

Intimate Partner Violence in Pregnancy in Ethiopia

Bosena Tebeje Gashaw

A dissertation submitted to the Faculty of Medicine, Institute of Health and Society, University of Oslo, Norway, in partial fulfilment of the requirements of degree of Philosophiae Doctor (PhD)



September, 2020

© **Bosena Tebeje Gashaw, 2021**

*Series of dissertations submitted to the
Faculty of Medicine, University of Oslo*

ISBN 978-82-8377-887-8

All rights reserved. No part of this publication may be reproduced or transmitted, in any form or by any means, without permission.

Cover: Hanne Baadsgaard Utigard.
Print production: Repräsentralen, University of Oslo.

Summary

Background- Intimate partner violence (IPV) during pregnancy is a serious public health problem and a potential risk factor for adverse maternal and fetal outcomes. IPV is closely linked to societal norms, gender roles, educational attainment and attitudes of societal leaders, all aspects being poorly understood in an Ethiopian context.

Objective- The general objective of this thesis was to examine IPV during pregnancy, ecologic factors, its link with ANC initiation and the stakeholders' response towards IPV during pregnancy.

Methods- The studies were conducted using mixed (quantitative and qualitative) methods in one of the biggest cities of Ethiopia, Jimma. The quantitative studies (Papers I and II) were employed using a consecutive probability sampling strategy, and cross-sectional study design among pregnant women attending antenatal care (ANC) at all government health institutions. Trained nurses or midwives interviewed 720 pregnant women using a standardized pretested survey questionnaire. Bivariate and multivariate logistic regression analysis was applied (for both quantitative studies) to assess the association between the exposure and outcome variables. In addition, we did qualitative studies using an exploratory design with a sampling strategy of maximum variation (multiple spectrum sources) (for papers III and IV). Paper III consists of 16 interviews of purposively selected participants representing different community institutions and guided by the Connell's theory of Gender and Power. Paper IV included 10 interviews of Health Care Workers (HCWs) (i.e., Nurses and Midwives) working at the public ANC centres. Both papers III and IV were analyzed using content analysis in the Atlas.ti 7 Software.

Results- among the 720 women interviewed, physical IPV was reported by 35.6 %. Perceiving violence as a means to settle interpersonal conflicts, emphasizing the presence of supportive attitudes of wife-beating in the society, considering violence as an expression of masculinity, and recognizing the presence of strict gender roles in the society, were all positively associated with experiencing IPV in pregnancy. The odds of IPV in pregnancy increased among those reporting the presence of groups legitimizing men's violence, isolation of IPV victims, having no social support for victims, and the presence of high unemployment in the community. In addition, we found over half of the pregnant women (51.8%) entered ANC late. Controlling for demographic, behavioural and reproductive health-related variables, among multiparous women, lifetime emotional or physical abuse was positively associated with a late entry into antenatal care (AOR =2.28; 95%CI=1.18, 4.39). While, reporting a recent partner sexual violence episode was associated with a late entry into ANC in the total group (AOR =1.55; 95%CI=1.09, 2.19).

In the qualitative studies, we identified the societal gender structure and social-cultural norms acting as barriers to receiving adequate assistance and promoting reconciliation as the core response to IPV victims by almost all stakeholders involved in the study. Limited awareness of the adverse impacts IPV can have on pregnant women and fetal health were identified in this study. Participants acknowledged the absence of strong support or networking among relevant institutions despite regular encounters with IPV victims. We also found out a limited understanding of the comprehensiveness of the adverse impacts of IPV on the pregnancy, the health of the women and their infants among the HCWs interviewed. HCWs were only treating evident obstetric complications or visible trauma of IPV. We also solicited their recommendations on what could be done related to IPV during pregnancy in an Ethiopian context.

Conclusions- IPV in pregnancy is very prevalent in Ethiopia and is associated with multiple social ecologic factors. Late entry into ANC is common in Ethiopia (52%), and associated with IPV in pregnancy. The

Intimate Partner Violence in Pregnancy in Ethiopia

impacts of IPV are not well understood by the community stakeholders and HCWs; its reasons and remedies are surrounded by socio-cultural, structural and economic factors. A reduction of IPV in pregnancy calls for cross-sectoral efforts from stakeholders at different levels including HCWs. While efforts to improve the utilization of ANC service in general and timely entry into the ANC, in particular, are in place in Ethiopia, reduction of IPV in pregnancy will require women empowerment, awareness-raising and training, horizontally arranged service centres that can effectively support survivors of IPV, developing and utilizing clear intervention guidelines and including IPV screening tools in the ANC card.

Acronyms

95%CI	95% Confidence Interval
AAS	Abuse assessment screening
AIC	Akaike's information criteria
ANC	Antenatal care
APH	Antepartum haemorrhage
AOR	Adjusted odds ratio
GBV	Gender-based violence
HCWs	Health care workers
FGM	Female Genital Mutilation
IPV	Intimate partner violence
IRB	Institutional review board
LBW	low birth weight
LNMP	Last normal menstrual period
PTSD	Post-traumatic stress disorder
SSA	Sub-Saharan Africa
SDGs	Sustainable Development Goals
SEM	Social-ecological model
STIs	Sexually transmitted infections

Table of contents	Page
Summary	1
Acronyms	3
Table of contents	4
List of Tables	7
List of Figures	7
Acknowledgments	8
List of original publications	10
1. Introduction	11
1.1 The situation of women in Ethiopia	11
2. Background	11
2.1 Intimate partner violence in the Global and Sub-Saharan Africa.....	11
2.2 Intimate partner violence actions in Ethiopia	12
2.3 The consequences of Intimate Partner Violence on Health.....	13
2.4 Intimate Partner Violence in pregnancy.....	13
2.4.1 Prevalence	13
2.4.2 Risk factors of IPV in pregnancy	16
2.4.3 Short and long term consequences of IPV for the woman	16
2.4.4 Short and long term consequences of IPV for the child	17
2.5 The impacts of IPV on women’s Health Care Utilizations	17
2.5.1 On the General and Reproductive health.....	17
2.5.2 On the Maternal health care utilization	17
2.5.3 IPV and health care institutions	18
2.6 Antenatal Care and IPV in Ethiopia.....	18
2.7 The social-ecological framework for IPV in pregnancy	19
2.8 Missing knowledge on IPV in pregnancy in Ethiopia	22
3. The aims of the thesis	23

3.1 The Overall Aim	23
3.2 Specific aims	23
4. Materials and Methods.....	24
4.1 The overall design.....	24
4.2 Study setting.....	24
4.3. The Quantitative studies	28
4.3.1 Study population	28
4.3.2 Data collection procedures.....	28
4.3.3 Sample size and sampling procedures	28
4.3.4 Data source.....	28
4.3.5 Variables and measurements, Paper I.....	28
Abuse assessment screening tools.....	28
4.3.6 Data processing and analysis, Paper I	29
4.3.7 Study Variables and Measurements, Paper II	29
4.3.8 Data processing and analysis, paper II	30
4.4 The Qualitative studies.....	31
4.4.1 Study Design and Setting.....	31
4.4.2 Sampling and Selection of Informants.....	31
4.4.3 Data collection process.....	32
4.4.4 Interview guides/tools.....	32
4.4.5 Analytical procedures	33
4.4.5.1 The theory of Gender and Power	33
4.4.5.2 The content analysis	34
4.5 Ethical aspect of the study.....	35
5. Results	37
5.1 Summary of results, Paper I	37
5.2 Summary of results, Paper II	37

5.3 Summary of results, Paper III	38
5.4 Summary of results, Paper IV	39
6. Discussion	41
6.1 Discussion of Methods	41
6.1.1 The Quantitative studies (Paper I and II).....	41
Strengths and limitations of the studies.....	41
6.1.2 Methodological issues in the Qualitative studies (papers III & IV).....	45
6.2 Discussion of main findings	47
Main findings	47
6.2.1 Discussion of the main findings in light of recent findings.....	47
6.2.1.1 Ecological Factors of IPV and Antenatal care	47
6.2.1.2 Barriers to an effective response to IPV in Pregnancy	53
6.2.1.3 Interventions towards IPV in pregnancy	54
7. Conclusions	57
8. Clinical implications	58
9. Future Research.....	58
References.....	60
Published articles I-IV	79
Appendices...	

List of Tables

Table 1. Studies published prior to the initiation of the current study on the prevalence and factors of IPV in pregnant women in Ethiopia.....	15
Table 2. Ethiopia’s three-tier health care system.....	25
Table 3. A summary of the methodological and analytic approach of each study papers (I-IV)	27
Table 4. Summary of the study setting and major activities.....	31
Table 5. Characteristics of the study participants.....	31
Table 6. Summary of major steps followed in the Atlas Ti analysis, based on thematic content analysis (Papers III and IV), and Connells’ theory of Gender and Power (paper III):.....	35
Table 7. Sample content analysis of HCWs’ response (theme 1) and the community stakeholders’ responses (theme 1, based on Connell’s theory of gender and power) to IPV in pregnancy.....	40
Table 8. Summary of recent Ethiopian studies on the prevalence of IPV in pregnant women and associated factors.....	50
Table 9. Proposed Interventions to eliminate IPV and IPV in pregnancy and its consequences, at different Social Ecologic Levels based on our findings.....	56

List of Figures

Fig. 1 A conceptual model illustrating the Social Ecologic Factors of IPV in pregnancy and its outcomes.	21
Fig. 2 Study area, Jimma Town in Jimma Zone in Ethiopia.....	24
Fig.3 Partial view of Jimma University specialized teaching hospital.....	26
Fig. 4 Simple Directed Acyclic Graph (DAG) for the study of ANC.....	30

Acknowledgements

First and foremost, I would like to praise the almighty 'God and his mother, St. Mary' for always being with me and giving me the strength to accomplish my PhD study.

My special gratitude goes to Dr. Jeanette H. Magnus, my principal supervisor, for all your strong and insightful guidance, patience, and willingness to impart your all rounded knowledge and experience over my PHD milestone. I should never deny that you can be strict sometimes, but this is because you always strive for scientific rigour. Your strong deeds to make real "50% PhD candidates of the Strategic and Collaborative Capacity Development in Ethiopia and Africa (SACCADE) project should be women", maintaining one of the UIO's core values, that seek gender balance and safeguard gender perspectives in the north-south cooperation, your innovative idea; be determined and very strong, all these inspired me to persistently work on my study and accomplish my goal. The PhD study, especially for us, "Six females out of 12 from Jimma and St. Paul University given the PHD chance in the SACCADE project", would not have been possible without your unwavering commitment.

Prof. Berit Schei, my co-supervisor, you have been meticulous with your professional guidance as an obstetrician and gynaecologist, and researcher on women's health, in all topics especially on intimate partner violence and late initiation of ANC. Additionally, thank you for challenging me sometimes, I used to convert the challenges into opportunities to learn new knowledge and skills in my PhD landscape.

Prof. Kari Nyheim accepted to be my co-supervisor during the fourth year of working with this thesis. Thank you for your kindness, professional support and guidance specifically in the qualitative part of my study.

I would like to extend my gratitude to the Jimma town Health Bureau, study institutions and administrators, Midwives and Nurses working at ANC, data collectors, supervisors, and participants of this study are all deserved acknowledgements for their collaboration and thank you all.

I am so grateful to the Norwegian Centre for Migration and Minority Health (NAKMI) staff and its research team (Bernadette, Mette, Ruth, Karin, Ela, and Emine) for the valuable comments you gave me to strengthen my research protocol. Also Helen G/Medhin, one of the NAKMI staff, thanks for your IT and facilitating other logistic supports. Dr Bernadette, the director of NAKMI, when we came to Oslo for the 1st time in 2015, given an office at NAKMI, I will never forget your kindness and leadership qualities, especially when you enter your office in the morning first, you come and warmly greeting, "good morning" to everyone, including we PhD students, which inspired us by creating a comfortable and friendly working environment. The SACCADE project coordinator, Line Marie Løv, you were so helpful each time we step into your office, thank you, Line.

I'm also grateful to all my colleagues, who in one way or another gave me their valuable comments available. This study would not have been possible without the UiO NORHED/SACCADE project funding, for which I'm so grateful. I would like to thank Jimma University College of Health Sciences, for encouraging me to undertake a research project relevant to our settings and the country at large. I would also like to express my sincere gratitude to Prof. Abraham Haileamlak, the PI of SACCADE project (South Part), for your commitment, encouragement, and support. Anyone can understand that this process may not be easier for you, but please be informed that you have succeeded, over all the difficulties. Ato Kora Tushune, Jimma University vice president of business and development, thank you for all the efforts you have done on the "fair distribution of educational opportunities to all of us".

Intimate Partner Violence in Pregnancy in Ethiopia

Special acknowledgement goes to those who taught me Biostatistics (from Jimma University, Henok Assefa), Clinical Epidemiology and qualitative research methods (UIO professors) which helped me to analyze and interpret my research.

I'm also grateful to my cohort PhD fellows of the SACCADE project Ethiopian colleagues; it has been a pleasure to work and travel with you to Oslo, share ups and downs with you. My colleague, Asresash, I will never forget our stay in Oslo, our shopping, class....etc, especially, when we try to mimicking our Ethiopian coffee ceremony, a Norwegian colleague sharing the same kitchen labelled us, "we are not drinking but eating coffee".

A great deal of gratitude goes to my husband Mr. Desta, our children Dr. Fitsum and Dr. Ephrem for supporting and encouraging me to be engaged in my study. I would also like to extend my gratitude to my lovely sisters and brothers, it's been a great pleasure to grow up in a large family with love, and share unforgettable happy moments with you that rejuvenate my day-to-day feelings. My sincere sister, Abebech, I'm so lucky to have a sister like you, who is very kind-hearted, honest and devoted the whole life to others. I could move forward because you are there to support our family (all our siblings and my nuclear family in general and Mama and Etalem in particular). My Uncle Teferi Gashaw, now your constant quest "when are you going to be a doctor?" is ended; I'm now a doctor!, thank you, Uncle.

My mother, a typical Ethiopian mother, devote everything to us 'children', very kind and strong, thank you Mama, your endless love, prayer and tireless efforts were incredible for my steps in life.

My beloved late father made me who I'm now, and always have a big place in the momentum of my life, especially your consistent advice to remain honest, have fear of God, work hard, and be focused on my education. Baba, though late, I kept my promise and did it!, but I wish you were able to see me for a single moment this time, thank you Baba, and RIP.

List of original publications

Paper- I. Gashaw BT, Schei B, Magnus JH. Social-Ecological Factors and Intimate Partner Violence in Pregnancy. PlosOne. 2018; 13(1).

Paper-II. Gashaw BT, Magnus JH, Schei B. Intimate Partner violence and late entry into Antenatal care in Ethiopia. J Women and Birth, 2018; 32 (6).

Paper- III. Gashaw BT, Magnus JH, Schei B, Solbraekke KN. Community Stakeholders' Perspectives on Intimate Partner Violence during Pregnancy—A Qualitative Study from Ethiopia. Int. J. Environ. Res. Public Health. 2019;16(23).

Paper- IV. Gashaw BT, Schei B, Solbraekke KN, Magnus JH. Ethiopian Health Care Workers' Insights into and Responses to Intimate Partner Violence in Pregnancy—A Qualitative Study. Int. J. Environ. Res. Public Health. 2020;17(10).

1. Introduction

1.1 The situation of women in Ethiopia

In Ethiopia, more than 80% of the population resides in rural areas and are engaged in agriculture (1). Women provide substantial labour; however, their contribution is largely unrecognized or not valued by society. Like many women in other third-world countries, women in Ethiopia are affected by discriminatory practices (2, 3). They are less educated, heavily affected by poverty and exposed to harmful deep-rooted socio-cultural patriarchal practices and beliefs. Studies in Ethiopia show that 30% of women are married by age 15-17 years (4), 11% are in polygamous unions (5, 6), and 74% undergone FGM (7). In Ethiopia like many other African countries, men are the main decision-makers in the family including family size, financial management, birth control, and use of health services (8). These power imbalances between men and women are detrimental to women and their children (9, 10).

Ethiopia exhibits one of the lowest gender equality performance indicators in Sub-Saharan Africa. The Global Gender Gap Index (GGGI) that captures the magnitude and scope of gender-based disparities ranks Ethiopia at 118 out of 136 countries (11). According to the 2014 report, based on the four fundamental categories of GGGI, Ethiopia stood with the overall rank of 93 in the Economic Participation and Opportunity, 131 in Educational Attainment, 68 in Health and Survival, and 66 in Political Empowerment out of 136 countries (12). Such various disadvantages and harmful practices faced by women, apart from violating their human right, it further influences their health, education, economic and overall well-being (13-15).

2. Background

2.1 Intimate partner violence in the Global and Sub-Saharan Africa

Intimate partner violence (IPV)-refers to a behaviour by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse and controlling behaviours (16). European Institute of Gender Equality broadly define an intimate partner as a “person with whom one has a close personal relationship, that can be characterized by emotional connection; regular contact; ongoing physical contact and or sexual behaviour; identity as couple and familiarity and knowledge about each other’s lives” (17). While violence against women may also be perpetrated by non-sexual relationships including family, friends, or acquaintances, the emphasis for IPV is commonly placed on the intimate and close relationship or sexual relationship between victim and offender (spouses or ex/partners).

IPV is a highly prevalent global problem (18, 19), that has gained attention in the SDGs, specifically, SDG target 5.2 “Eliminate all forms of violence against women and girls”(20). It is the leading cause of homicide death for women (19), crossing geographic and racial boundaries, impacting women’s life and their health in many ways (21). The global prevalence of lifetime physical and/or sexual intimate partner violence among all ever-partnered women is estimated at 30% (22), albeit the true extent is poorly quantified. IPV occurs in all regions and countries with varying prevalence between high and low-income countries. In the high-income regions, the lifetime prevalence of physical and /or sexual violence is estimated at 23%, below the global average of 26.4% (23).

In Sub-Saharan Africa (SSA), the prevalence of IPV is highest, where more than 40% of women reported abuse by their intimate partners (23, 24), at some point in their life. The entire SSA regions are above the global average, with the highest prevalence in central SSA, where nearly 66% of ever-partnered

Intimate Partner Violence in Pregnancy in Ethiopia

women report having faced IPV (19, 23). According to the "2005 WHO Multi-country study report on women's health and domestic violence against women" undertaken in 10 mainly low-and middle-income countries, among women aged 15-49, 71% of the women in Ethiopia reported physical and/or sexual violence by an intimate partner in their lifetime (18). Another population-based study, with 15 sites and ten countries including Ethiopia, reported lifetime prevalence of physical or sexual partner violence, or both, from 15 -71% (18). This figure may even be higher, as indicated by a recent study conducted in Western Ethiopia, where more than three fourth (76.5%) of women were victims of IPV (25). Currently, the severity of violence against women and girls, including stabbing, gunshot, acid attack, and gang rape (26) are increasing. When this study was started in 2015, there was a dire lack of rigorous IPV studies, although a few Ethiopian cross-sectional studies indicated IPV prevalence between 50-78% (27-30).

Surveillance systems on IPV and its consequences for reporting and recording are in many countries either lacking or being developed. Similarly, comparison studies exploring whether IPV is increasing or decreasing may not be possible especially in developing countries. Many IPV incidents may not be reported for different reasons. IPV studies are also not consistent in terms of the type of violence identified, time (lifetime, last 12 months, current), or type of perpetrator involved (intimate partner, x-partner, any family member).

2.2 Intimate partner violence actions in Ethiopia

The government of Ethiopia has taken steps in addressing violence against women and is a signatory to the international conventions (31), that endorsed the recommendations of the 1994 Cairo, and 1995 Beijing international conferences that reminds governments to urgently tackle the problem of violence against women and girls and increase the awareness of the health consequences (32-34). Ethiopia has revised various legislation and policy documents to address this in the 2000 revised family law, and in the 2004 criminal law (35-37), which criminalizes most forms of violence against women and girls including rape, trafficking women, prostitution for gain, and physical violence within marriage or in an irregular union, abduction, FGM, and early marriage (35, 38). Ethiopia has also established women and child protection units in the police stations and special benches at the justice system responsible for handling such cases (35, 37, 39). However, the current legislative framework is not strong enough to fully protect women from domestic violence. The limitations are due to the right to obtain a protection order, compensation relief, custody order, residence order, shelter or medical benefits or more as well as the absence of equivalent criminal liabilities on perpetrators (40). Evidence shows that civil protective orders that are widely used in the justice system protect women from IPV (41), do ensure their safety and encourage them to use the justice system. There are also very limited joint initiatives (non-governmental and governmental) aimed at providing coordinated and comprehensive service for women experiencing violence. These are the Association for Women's Sanctuary and Development (AWSAD), an NGO safe house initiated in 2003 (42, 43), and One-stop centres, established by the government of Ethiopia in collaboration with UN agencies in 2008 (44). These initiatives to help survivors of violence are encouraging; however, the services are limited to a few hospitals and scarce in several regions, and not accessible by the majority of needy women.

Insufficient legal coverage, lack of policy framework to provide services for victims, trivialization of domestic violence as a private matter, nurtured by the powerful patriarchal culture that excuses or accepts violence against women (35, 45), contribute to the perpetuation of IPV in Ethiopia. Studies document that when a society fails to lesson IPV offenders (46), the legal systems and cultural norms consider IPV as normal when help-seeking attempts are blocked by powerful social norms (47, 48), the violence will continue damaging the lives of many women, their children (49), and spread by inter-

generational transmissions (50). IPV is pervasive, a cross-cutting social issue, and given the high prevalence in Ethiopia and its multiple consequences on pregnancy outcomes, as well as the non-existence of data on this topic, warrants attention from the government and the research community.

2.3 The consequences of Intimate Partner Violence on Health

The effects of violence can be devastating to a women's reproductive health as well as to other aspects of their physical and mental well-being (51). In addition to causing injury, violence increases women's long-term risk of several physical, emotional and behavioural health problems. These include but not limited to chronic pain, physical disability, low self-esteem, drug and alcohol abuse, and depression (52, 53). Women with a history of physical or sexual abuse are also at increased risk for unintended pregnancy, sexually transmitted infections, and adverse pregnancy outcomes (54).

Mental health consequences of IPV include depression, PTSD (55, 56), stress, anxiety, depression, phobias, eating disorders, sleep disorders, panic disorders, suicidal behaviour, poor self-esteem, traumatic and post-traumatic stress disorders, and self-harming behaviours (57). The human cost in grief and pain cannot be calculated, as most of it may not involve visible trauma. The mental trauma related to psychological violence might be equally damaging as physical violence if not worse. Victims of survivors reported that the ongoing psychological violence (emotional torture, mental stress or living under terror is often unbearable than the physical brutality that can lead to suicidal attempts. Women's exposure to violence is also strongly associated with the adoption of risk behaviours that can further affect health, such as problematic substance use, alcohol abuse, physical inactivity and cigarette smoking (57). In addition, women with severe and combined abuse appear to have cumulative effects over time (57), with increased impacts on their health and quality of life. The more severe the forms of violence, the greater the impact on women's physical and mental health. The physical health consequences of IPV include chronic pain, somatic disorders, gastrointestinal problems, STIs and traumatic brain injury (58). Living with IPV stressors also increase the risk for metabolic syndrome and chronic cardiovascular diseases risk factors including diabetes and hypertension in women (58, 59).

Children whose mothers are the victim of violence can also directly experience the physical and mental health consequences of their exposure to violence. Evidence indicated that children who witness IPV are found to be at higher risk of anxiety, depression, trauma symptoms, mood problems, and loneliness, presence of persistent fear, low self-esteem, disobedience, aggression, peer conflict, lower social competence, nightmares and physical health complaints and anti-social behaviours (60, 61). Furthermore, studies demonstrate that childhood exposure to violence increases the future risk of cardiovascular outcomes in adulthood including hypertension, heart diseases, stroke, diabetes (62, 63), and increased risk of lung cancer (64). These indicate the effect of IPV will never remain only between the perpetrators and the victims, but they will be passed on to the offsprings.

2.4 Intimate Partner Violence in pregnancy

2.4.1 Prevalence

Pregnancy is a vulnerable phase in a woman and child's life. Exposure to violence is thus very harmful to both. The proportion of IPV in pregnancy varies across continents and countries (65). The overall global prevalence of IPV in pregnancy ranges between 3-30% (18, 65), with a higher prevalence reported in developing countries (66). An earlier review study identified the prevalence of violence during pregnancy in developing countries ranging between (3.8- 31.7%) and in industrialized countries (3.4 - 11%) (67). A very recent review of global studies consisting of a total of 12 systematically reviewed studies show physical IPV during pregnancy ranged between (1.6–78%), and psychological IPV (1.8– 67.4%) (68), demonstrating the current evidences do not illustrate the actual burden of the problem.

Intimate Partner Violence in Pregnancy in Ethiopia

Studies done in the SSA report an IPV prevalence ranging from 23-40 % (69). Another study that analyzes the prevalence of IPV during pregnancy from 19 countries reports higher prevalence in African and Latin American countries compared to the European and Asian countries (70).

Results whether pregnancy increases or decreases IPV are inconclusive, but it clearly showed that pregnancy neither stops nor prevents the occurrence of IPV, and it may commence or escalate during pregnancy (71, 72). IPV occurs more frequently than common obstetric complications [such as post-partum haemorrhage 6% (73), pre-eclampsia 4.6% (74), puerperal sepsis 4.4% (75)], all receiving great attention, and interventions aimed at prevention during ANC visits (76).

Although IPV is very high in SSA, studies specifically among pregnant women are scarce. In one study done in South Africa, nearly one in four women experienced some type of IPV during pregnancy (77). This figure is 37% (one form of IPV) in Kenya (78), 63% (physical, emotional and /or sexual IPV) in Zimbabwe (79), 27% (both sexual and physical) in Tanzania (80), and nearly one in three in Ethiopia (81-84). The disparity among these studies may partly be explained by inconsistency in the measurement of IPV, design, controlling of confounding variables, the timing of study through the course of pregnancy, and limited sample size.

However, studies on the prevalence of IPV among pregnant women were very limited in Ethiopia. We only identified four, when this study was initiated, and the reported prevalence of IPV in pregnancy ranged between 23-32% (81-84). All studies were cross-sectional in design, with a relatively small sample size (ranging from 195-425),(Table 1), linked mainly with individual-level factors, and all but one were institutionally based (81-84).

Table 1 -Studies published prior to the initiation of the current study on the prevalence and factors of IPV in pregnant women in Ethiopia

Author, Year	Region	Study design	Sample	Prevalence (%)	Risk factors
Abdurashid R and Tesfahun H, 2013 (84)	Addis Ababa	Facility based, cross-sectional	360	29.3	Unwanted pregnancy 2.9 (1.7-4.9) and partner's daily alcohol consumption 44.7(5.5-364.2) were associated with IPV in pregnancy *Very wide 95%CI in the association between partner's daily alcohol consumption and IPV in pregnancy may indicate very low precision.
Yimer T et al, 2014 (82)	Amhara	Community based, cross-sectional	425	32.2	Child marriage (AOR = 4.2, 95% CI: 1.9–9.0), childhood exposure to IPV (AOR = 2.3, 95% CI: 1.1–4.8), partner drinking behaviour (AOR = 3.4, 95% CI: 1.6–7.4), and whether partner wanted pregnancy (AOR = 6.2, 95% CI: 3.2–12.1) were factors increasing the odds of domestic violence during pregnancy
Laelago T et al, 2014 (83)	SNNPR	Facility based, cross-sectional	195	23	Partners' alcohol drinking (AOR = 22,95%CI:7.4, 65.6), partner with no formal education (AOR = 10.8, 95%CI: 1.06, 108.5) and planned pregnancy (AOR = 0.23, 95%CI: 0.08, 0.67) were associated with IPV during pregnancy *Wide 95%CIs in the association between partner's alcohol consumption, partner with no formal education, whether the pregnancy is planned or not and IPV in pregnancy may indicate lower precisions.
Demelash H et al., 2015 (81)	Oromiya	Facility-based, case-control	387	25.8	The primary aim was to examine the link between IPV and LBW

2.4.2 Risk factors of IPV in pregnancy

Many international studies identified low income, rural residence, low education, alcohol abuse, young age, unplanned pregnancy, risky sexual behaviour, HIV status, and uncommitted relationship with partner (82, 83, 85) as a risk factor for IPV in pregnancy. Other studies report poverty (86), low socio-economic status (69, 87), poor social support (88) and previous history of violence (69) as a risk factor of IPV in pregnancy. Likewise, why men use violence towards women are complex and cannot be attributed to single-factor explanations of personal history. Rather, their risk of perpetrating violence is mediated by a range of social and structural factors (57).

The 2005 WHO multi-country study on women's health and domestic violence against women highlight that the majority of women who reported physical abuse during pregnancy have also been beaten before getting pregnant (18). This illustrates that any prior IPV can be a risk factor for IPV in later pregnancy. Others were beaten for the first time during pregnancy suggesting pregnancy can be a risk factor for IPV (89). Speculations have been on if pregnancy-induced financial pressure, and/or a woman's reduced physical and emotional availability to her partner during pregnancy can be precipitating factors (90, 91).

2.4.3 Short and long term consequences of IPV for the woman

IPV during pregnancy can manifest as physical, sexual or emotional abusive acts as well as controlling behaviours. Studies indicate that IPV during pregnancy is associated with long and short term adverse health outcomes for the mothers and their unborn children (92, 93). Many studies reviewed on the impacts of IPV on pregnancy across continents and countries show fairly consistent adverse foeto-maternal outcomes. IPV during pregnancy is associated with adverse health outcomes on women that have direct physical health, mental health and behavioural effects that may interact with each other. The direct physical health impacts include increased risk of anaemia, infection, bleeding during pregnancy, and preterm labour (94, 95), increased risk of antepartum haemorrhage, and urinary tract infections (96, 97), STIs, high maternal cortisol, increased pregnancy-related symptoms, uterine rupture, hypertension, pre-eclampsia, and permanent physical disability (98).

Among the different types of IPV, physical violence is commonly studied during pregnancy by many researchers, while sexual and emotional IPV can equally as harmful for the women and their children's well-being (99, 100). A special concern, related to physical violence during pregnancy, is when abusive partners target a woman's abdomen, thereby not only hurting the women but also potentially endangering the fetus. IPV is also associated with obstetric complications including more antenatal hospitalization, negatively affects the mode of delivery (increased caesarean section), (55, 94, 101-104), and progress of labour (premature rupture of membrane, prolonged labour (dystocia), (105). The effect of IPV on mortality of women is very high, implicated in 38 % of all murders of women (16, 23). This is exceeding the mortality rates of major obstetric complications (postpartum haemorrhage, pre-eclampsia and puerperal sepsis), which respectively contribute to 27.1 %, 14.0%, and 10.7% of all maternal deaths (106). Homicide or suicide are also the leading causes of pregnancy-associated death, commonly resulting from IPV (107, 108).

The impact of IPV on maternal health behaviour includes poor nutrition, substance use, poor maternal weight gain) (72, 109-111); poor health care service utilization [poor and/or late ANC visits, less use of skilled health care provider (112) and low contraception use (103)]. IPV during pregnancy also influences women's mental health including increased depression, anxiety, PTSD, and suicide (80, 98, 113, 114). Such mental health distresses during pregnancy leads to a wide range of adverse health outcomes (including emotional and behavioural health problems) on the child (115, 116).

2.4.4 Short and long term consequences of IPV for the child

IPV during pregnancy is also associated with several adverse health outcomes for the newborn (94, 95). Its impact on the foetus includes, but are not limited to abortion (117, 118), low birth weight (55, 98, 119-122), pre-term birth (55, 98, 119, 121, 123), small size for gestational age (118, 124), intrauterine growth retardation, foetal fractures (118), perinatal death (97), neonatal death (98), poor breastfeeding (55), or decreased initiation of breastfeeding (125), and increased risk of requiring intensive care unit for infants (92).

Evidences are controversial on how IPV results in adverse birth outcomes; especially between psychosocial or biomedical risk factors. A study on low-income African American women reported that IPV intervention aimed at reducing behavioural and psycho-social risk factors did not but the biomedical risk factors (such as hypertension, diabetes mellitus) significantly contributed to adverse fetal outcomes (126). While another study indicated psychosocial risk factors independently linked with adverse birth outcomes (LBW and preterm birth) after controlling for socio-demographic or biological risk factors (127). It is evident that physical IPV can directly damage the fetus or may result in bleeding due to premature placental separation, premature birth, or fetal death. It is also possible that psychosocial risk factors might be mediated by biomedical (pre-eclampsia, hypertension, diabetes) risk resulting in adverse fetal outcomes. For example, IPV victimization and chronic stress or depression may lead to develop or exacerbate pre-existing diabetes or hypertension (128-130) in women, leading to compromise feto-maternal outcomes. However, controversies, (whether psychosocial, biomedical or both are responsible for pregnancy outcomes of IPV), might be attributed to a variation in context, design, and sampling and requiring large scale studies.

2.5 The impacts of IPV on women's Health Care Utilizations

2.5.1 On the General and Reproductive health

Women mainly in developing countries are frequently confronted with countless socio-cultural factors negatively imposing on their physical well-being and access to health care (131). IPV impact women's health care use in many ways, including but not limited to, interfering with help-seeking behaviour, their use or choice of contraception, and antiretroviral therapy (ART) use and adherence. Victims of IPV are less likely to use contraception (132). IPV is also associated with lower ART use and reduce ART adherence, consequently worsened viral suppression (133). Partner alcohol drinking problem is associated with the IPV victim's help-seeking behaviour(134).

Evidences on whether IPV increases or decreases women's health care utilization are contrasting. Most studies highlighted IPV compromises (135, 136), while others indicate it increases women's health care utilization (137-139). In addition, one study indicates women's household decision making increased the odds of the utilization of modern contraceptives (140). It appears that studies mainly done in developed countries report a positive association between IPV and utilization of health care, indicating context-specific differential impacts of IPV on women's health care use.

2.5.2 On the Maternal health care utilization

IPV impacts the entire maternity care services utilization including pregnancy, childbirth and the postpartum period. Apart from its vast physical and psychosocial complications, IPV in pregnancy may impact pregnancy outcomes by limiting women's ability to utilize maternal health care services including antenatal care (ANC) from a skilled care provider (98, 135). Many studies document that IPV decreases the use of ANC and child-birth services from a skilled provider (136, 141, 142). Studies have

demonstrated that timely ANC by a skilled health care provider and delivery at health facility play a great role in the reduction of maternal and neonatal mortality during pregnancy and childbirth (143), demonstrating the health of the women and infant survival is closely linked to the care that mother receives during pregnancy and childbirth (143-145).

2.5.3 IPV and health care institutions

Successful identification and management of IPV require multiple levels of support, including from the health care institutions. The health care systems as part of the multi-sectoral response have a critical role to play in addressing violence (146-148). Safe and effective identification of women victim of IPV in the health care setting is debated. Some advocates universal screening, while others recommend selective (based on clinical considerations) screening of IPV victims. In general, studies have shown that universal screening for IPV increases the identification of women, but have not shown a reduction of the occurrence of IPV (149). Given such evidences and the adversities of IPV on pregnancy, ANC provides an ideal place for screening. Likewise, Health Care Workers (HCWs), including nurses and midwives, are important in improving the health sector responses to IPV in general and during pregnancy in particular (150), as maternal health care provides a distinctive opportunity for their interventions (151-153). They can address issues related to IPV with pregnant women (154), including screening, counselling, giving other care within their scope and refer for further support.

WHO developed clinical and policy guidelines in 2013 and recommend violence against women to be integrated within the clinical care at all levels in the health care system (155). WHO also underlined ANC as an opportunity to ask women about IPV when assessing conditions that may be caused or complicated by IPV, and alarming HCWs working at ANC to routinely screen women, and that providers need to be well trained to properly make inquiries, respond to disclosure and referral to other supportive services (154). Nevertheless, the health care sectors have been rather slow to incorporate these recommendations into their routine practices (156, 157), and this screening tool is not included in the ANC card in many countries including Ethiopia.

To this end, screening IPV is a routine for some European and American countries, including Norway (158), Australia (159), Canada (160), which have introduced routine IPV screening among pregnant women. Evidence of a systematic review that evaluated IPV screening programs found that those incorporated comprehensive or multiple program components including institutional support, effective screening protocols, initial and ongoing training and referrals to support services were successful in increasing disclosure or detection rates (149). Other studies including targeted interventions such as a Nurse-led home visitation program and the Domestic Violence Enhanced Home Visitation Program (98, 161-163), also show promising results in the USA, in terms of decreased overall violence (163), and improvement in women's physical and mental health. However, the feasibility of these interventions in poor-resource settings including SSA and Ethiopia needs large scale studies to provide evidences of impact of mitigation of IPV in pregnancy.

2.6 Antenatal Care and IPV in Ethiopia

Like most women in SSA, maternal health care seeking behaviour in Ethiopia is very poor (164, 165). The majority of pregnant women entered ANC late, studies indicate between 53–74% (166-169). Many others do not come for ANC at all. The 2016 Ethiopian Demographic and Health Survey (EDHS) documented that only 20% of women enter ANC in the first trimester, 62% of pregnant women received antenatal care at least once, 32% had at least 4 ANC visits. Only 28% of the childbirths were attended by a skilled care provider, and 26% gave birth at a health institution. Many SSA countries have managed to half their levels of maternal mortality since 1990. Ethiopia is one of the countries lagging behind in

achieving its MDG goals (170), specifically Goal 5, “reducing maternal death by three forth”; as maternal mortality was 871/100,000 in 2000; 673 in 2005; 676 in 2011; and 412 in 2016 (EDHS) (171, 172), and the pace of reduction in neonatal mortality is very slow (i.e., 29/1000 births) (171, 173). Poor maternal health service utilization leads to high mortality and morbidity, and some could have been prevented through timely detection and management of complications at ANC centres.

Compared to other studies, there are not many studies linking IPV and late ANC initiation (141, 174-176) in the world. In SSA, specifically in Ethiopia, studies highlighting how IPV in pregnancy results in a late ANC visit are non-existent. IPV victimization may lead to a late entry into ANC by imposing psycho-social, physical /or sexual trauma (53, 177-180), which in turn may impact victims’ health-seeking behaviour including their ANC follow-ups. This understanding is in agreement with an earlier study that noted the association between psychological stress and late entry into ANC (181). Studies also show pregnant women living with significant psychosocial stressors, including the experience of IPV, are more likely to be isolated, engage in risky health behaviours such as smoking, alcohol use, substance use (182), and less likely to visit ANC (183). It becomes evident that, as IPV discourages ANC visits, it affects the health of women and children in many ways. In Ethiopia, prior research identifies factors influencing ANC visit as socio-demographic and reproductive health-related factors including older age, low education, rural residence, income (167, 184), unplanned pregnancy, multiparity and lack of knowledge about the time of ANC initiation (166, 185). However, investigation linking IPV and ANC initiation was non-existent at the time this study was launched.

2.7 The social-ecological framework for IPV in pregnancy

The Social-Ecological Model (SEM) framework was developed by Bronfenbrenner in 1960. The ecological theory considers human development within the context of the systems of relationship that shapes the human environment. It provides attention to patterning and inter-relationship of multiple determinants of human development (186). This theory is used by many disciplines, studies and interventions. To comprehensively capture the factors contributing to IPV, the SEM guided our study, as it gives a comprehensive understanding of the risk factors linked to IPV at different levels (187): individual, family, community and societal level related factors (188). The model consists of four overlapping rings or nested structures each inside the next, demonstrating factors at one level influence factors at other levels (Fig. 1).

The causes of IPV remain only partially clear and are often debated. Nonetheless, several factors are consistently associated with IPV, and as a result, widely believed to play some causal role. The SEM is tailored to show that the different levels are constantly interacting to influence IPV (189). The model conceptualizes violence as a multifaceted phenomenon grounded in the interplay among individual, family, social-structural, and socio-cultural levels (187, 190). The individual level of the model encompasses biological factors, beliefs and attitudes, and personal history related factors that influence an individual’s likelihood of becoming a victim or perpetrator. The relationship level reflects how an individual’s close social relationships influence the risk of violence; the community-level factors related to the settings of social relationships, such as neighbourhoods, workplaces and schools, and the characteristics of those environments that contribute to or protect against violence, and the societal level factors refer to underlying conditions of society that either encourage or condemn violence (191).

The major strength of the SEM approach especially in health is that it is possible to offer strategies of behavioural change and environmental enhancement (192). As it considers the entire populations, it provides a framework that gives many options for prevention and interventions. While having such strength, an ecologic model can be constrained by certain practical limitations, as the incorporation of

Intimate Partner Violence in Pregnancy in Ethiopia

those complex influencing factors operating at different levels may be intensive in many ways, including the concern on resources, and overcoming societal norms.

In summary, understanding the causes of IPV is more difficult than studying infectious disease. IPV is a product of its social-ecological context, and understanding the causes of such violence requires researching all contexts (193). Although a consensus has emerged on the need to explore factors and aspects of the dynamics of relationships, however, not many studies considered all these complex factors (69, 78, 79, 82).

Intimate Partner Violence in Pregnancy in Ethiopia

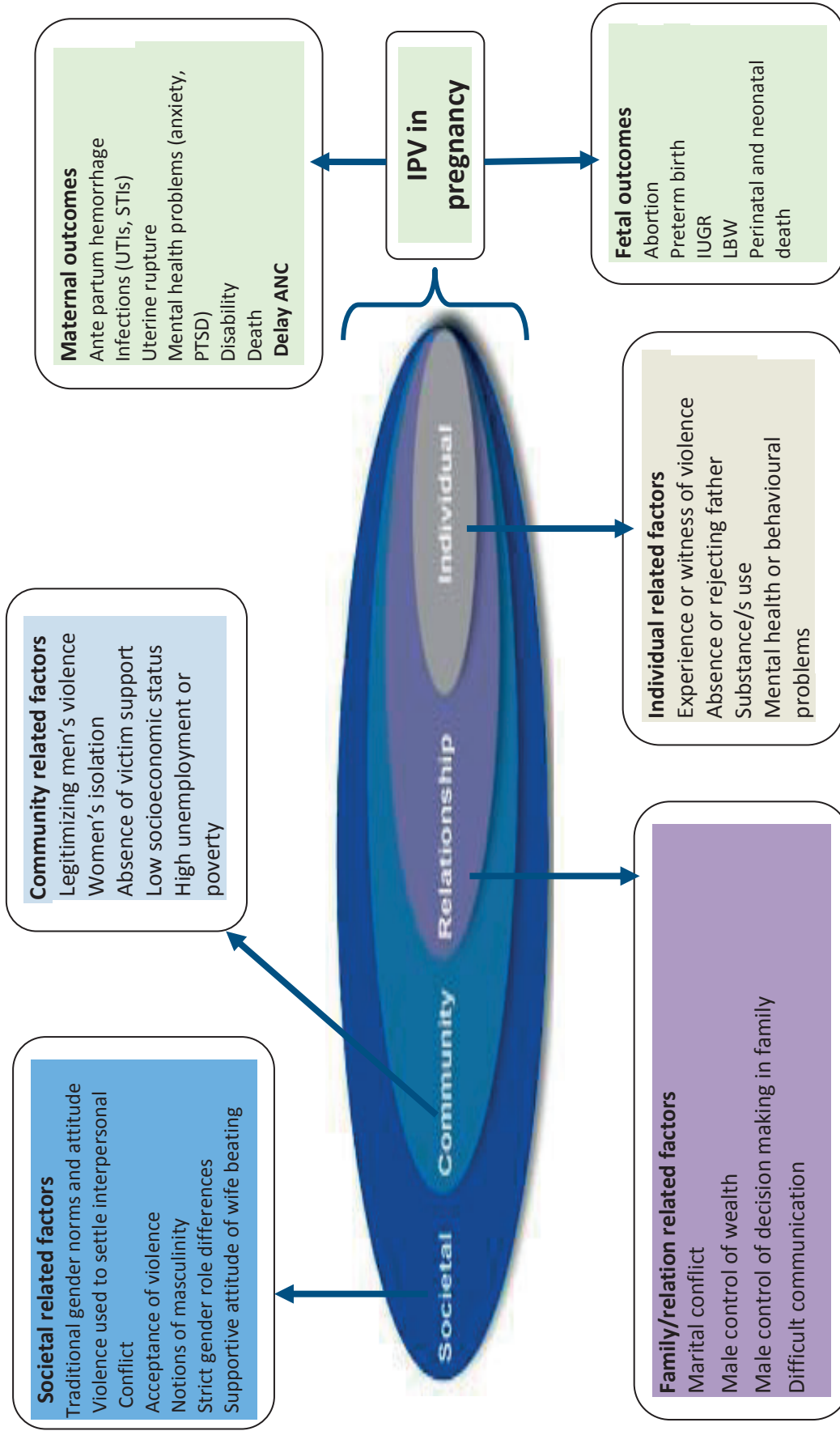


Fig. 1 A conceptual model illustrating the Social Ecologic Factors of IPV in pregnancy and its outcomes adapted from; Researching Violence against Women: Practical Guide for Researchers and Activists/ Mary Ellsberg, Lori Heise, WHO, PATH, 2005.

2.8 Missing knowledge on IPV in pregnancy in Ethiopia

IPV is very high in the SSA, and in Ethiopia, but studies specifically among pregnant women are scarce in Africa and very limited in Ethiopia. In addition, few studies done in these countries have identified various individual (socio-demographic, economic, behavioural, previous exposure) or family-related risk factors contributing to IPV (69, 78, 79, 82). Studies in Ethiopia, in this area, identified mainly individual risk factors associated with IPV during pregnancy (82-84). It is also worth noting that generalizations are difficult across studies even those finding positive associations, as they lack uniformity in definitions, design, and data analysis and in controlling for confounders associated with IPV in pregnancy, among others. This warrants a study that conceptualizes violence as a multifaceted phenomenon grounded in the interplay across societal, community, family, and individual levels.

ANC services and early initiation of ANC is significant for early detection, treatment or preventing adverse conditions in pregnant women that might otherwise give rise to serious morbidity or mortality (143). Timely ANC by a skilled health care provider and delivery at a health facility play a great role in the reduction of maternal and neonatal mortality (194, 195). Early identification of problems/or diseases (for example, hypertension, diabetes mellitus, cardiac, infection, haemorrhage, and pre-eclampsia) improve the well-being of mother and baby (196, 197). One of the Sustainable Development Goals (SDGs), is to reduce the global maternal mortality ratio by 2030 to less than 70 per 100, 000 live births, with no country having a maternal mortality rate of more than twice the global average (SDG 3) (198). Ethiopia has as mentioned a very high IPV prevalence (71%), (18), and IPV is negatively affecting ANC service utilization and thus pregnancy outcomes (93, 123). However, studies in this area are non-existent in Ethiopia. Therefore, efforts to achieve the SDGs related to maternal and child health should give due attention to the effects of IPV on the initiation of ANC.

As mentioned, IPV is a socially constructed and complex problem shaped by a set of interacting factors (cultural, religious, socio-economic, and political) that needs to be understood within the wider social ecologic context. Public perceptions and attitudes shape the social climate in which such violence takes place and either perpetuate or discourage its occurrence (199-201). Many of the formal and informal resources do exist to assist women experiencing IPV, but disclosure, help-seeking, and subsequent utilization of these resources are often hindered by socio-cultural, economic and institutional barriers (202, 203). Challenging harmful gender norms and unequal power between women and men requires assessing the views of different community stakeholders (32), addressing embedded societal perspectives leading to tolerance or justification of IPV.

Moreover, health care workers (HCWs) as part of the multi-sectoral agencies have a critical role to play in addressing violence (146, 147). They are important to improve the health sector responses to IPV in general and during pregnancy in particular (150). ANC provides a distinctive opportunity for interventions (151-153), as HCWs contact pregnant women constantly, they can identify women experiencing IPV. Currently, in Ethiopia, nearly three-fourth of pregnant women have at least one ANC visit (204). ANC provides an ideal 'window of opportunity' to address IPV, as this might be the only time most women step into the health institutions.

The high prevalence of IPV in pregnancy in Ethiopia, its threat on pregnancy outcomes, being a multi-factorial problem (72, 188), the limited literature in the SSA and Ethiopia warrants multi-dimensional studies and explanations, and places IPV at the top of a research agenda.

Our study will address some of the gaps in the existing literature towards IPV in pregnancy. In an Ethiopian setting, we will explore stakeholders' perspectives on IPV and the relation of IPV on ANC

initiation using mixed methods (quantitative and qualitative). The time and scope limitation of a dissertation restrict us from addressing all issues reflected in the conceptual/theoretical framework, (fig 1). The perspective is reflected in the overall and specific aims. The knowledge gained from this study will be imperative to inform policy, health and legal procedures that might improve the clinical management of pregnant women experiencing IPV and inform future interventions at different levels and ultimately contribute to improving the health and well-being of women and their children in Ethiopia.

3. The aims of the thesis

3.1 The Overall Aim-The overall aim of this thesis was to examine the occurrence and risk factors of Intimate partner violence during pregnancy, and the stakeholders' perspectives towards it, in one of the largest cities of Ethiopia, Jimma.

3.2 Specific aims

To determine the prevalence of IPV and its risk factors' association using a Social-Ecological Model.

To assess the influence of IPV on Antenatal care utilization.

To explore the perspectives of different community stakeholders/institutions on IPV during pregnancy.

To obtain a deeper understanding of health care workers insights and responses to IPV in pregnancy.

4. Materials and Methods

4.1 The overall design

This is a mixed-method study (thesis) including both quantitative and qualitative research sub-studies, each answering specific research questions of interest to the overall aim of the thesis. The quantitative method involves numerical values and measurements that enable researchers to describe and determine patterns, while the qualitative methods provide interpretation and exploration opportunities guiding researchers to a deeper understanding of cultural beliefs and gender norms underpinning the respondents' experiences informing interpretation of the issues addressed (205) as well as associated complex social processes (206, 207). Merging data using more than one method (methodological triangulation) is usually considered as a means to add new perspectives and offer a more complete picture of the issues under study (208). Employing mixed methods while having challenges, the benefits are acknowledged by many researchers. The synergistic approach involves a greater range of information that can provide more strong accounts and explanations of complex realities (209). Integrated studies from mixed-method provide a better understanding of the problem, more comprehensive and improved relevance of findings that can guide interventions.

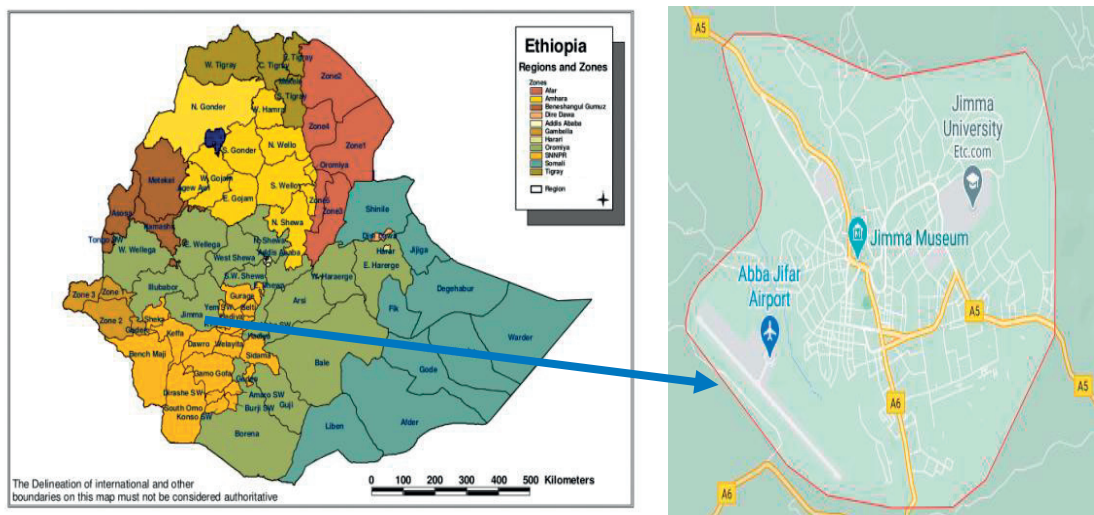


Fig. 2 Study area, Jimma Town in Jimma Zone in Ethiopia (source: Goggle map)

4.2 Study setting

This study was carried out in Jimma Town (Fig. 2), Ethiopia. The Ethiopian health care system follows the government's administrative structure, organized into a three-tier system (210). These include primary level (Health Posts, Health Centres, and district-based primary Hospitals), secondary level (general Hospitals), and tertiary level (teaching and Specialized Hospitals), (see Table 2). The different levels of health care services institutions are connected by a referral system.

Table 2. Ethiopia's three-tier health care system

Level of Health care	Type of health institution	Population covered	Major functions
Primary	Health posts, Health centres, and primary hospitals	Health posts, 3000-5000	Provide mainly promotive and preventive and limited curative health services
		Health centers, 15,000-25,000	Provide both preventive and curative services and serves as a referral centre for health posts
		Primary hospitals 60,000- 100,000	Provide inpatient and ambulatory services, and emergency surgical services, including caesarean sections, and access to blood transfusion services, also serve as a referral centre for health centres
Secondary	General hospitals	1-1.5 million	Mainly provide curative services for inpatient and ambulatory patients as well as serves as a referral centre for primary hospitals and health centres
Tertiary	Specialized hospital	3.5-5 million	Mainly provide curative services, Function as teaching, referral hospital and provide specialized medical care

Our study settings, ANC units at all Jimma Town governmental Health institutions include three health centres, one primary hospital and one specialized referral hospital [Jimma University specialized hospital (JUSH)]. JUSH, the only referral and teaching hospital in the South-West part of Ethiopia (Fig. 3), Shenan Gibe Hospital (primary level hospital located at the periphery of the town) and three other health centres provide different health care services for many people coming from both urban and rural areas. All the study institutions provide maternal and child health care services (with different scopes) including family planning, antenatal care, childbirth, postnatal and vaccination services for free. To reduce maternal and neonatal mortality, these institutions are linked through referral to provide the needed emergency obstetric and newborn care (211).

ANC is provided to ensure the best health conditions during pregnancy for both the mother and baby (212), through risk identification; prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion. A healthy pregnancy also requires a timely entry into ANC before 16 weeks (Ethiopian Ministry of Health ANC guideline), and a minimum of four subsequent routine follow-ups (213).



Fig.3 Partial view of Jimma University specialized teaching hospital.

The studies are institution-based and cross-sectional as both the exposure and outcome variables collected at the same time. The study is conducted in Jimma town, located in Oromiya regional state, have a total population of 177,900 (CSA 2015), and is one of the largest cities in Ethiopia and located 352 km South-West of the capital, Addis Ababa. Jimma is a multi-ethnic town with different religions, cultures, and languages. To obtain data from clients with different socioeconomic backgrounds, government health institutions were selected.

The different methods used are described in detail in each study. However, the summary of the methods is given in this section in Table 3, as well described in the text below.

Table 3. A summary of the methodological and analytic approach of each study papers (I-IV)

Papers	Title	Design, data collection and sample	Exposure variables	Covariates	Outcome	Statistical analysis and guiding theories
I	Social-ecological factors and Intimate partner violence in pregnancy	Survey questionnaire to the 720-pregnant women attending ANC	Societal, Community, Family and Individual related factors	Age and education of the woman and her partner	IPV in pregnancy	Descriptive, and binary logistic regression AIC (guards over-fitting penalty), and the principles of parsimony (simple model with few covariates) considered to identify the model that offered the best estimate Guided by the SEM
II	Intimate partner violence and late entry into ANC in Ethiopia	Survey questionnaire to the 720-pregnant women attending ANC	IPV sub-types	Demographic, behavioural and reproductive health-related confounders	Late entry into ANC	Descriptive, and stratified binary logistic regression
III	Community Stakeholders' Perspectives on Intimate Partner violence during pregnancy	Qualitative study, on 16-Community Stakeholders (Women's affairs, Religious leaders, Police officers, Prosecutors & Judges) interviewed at their workplace	-	-	Themes	Thematic content analysis in the Atlas Ti software Guided by the Connell's theory of gender and power
IV	Ethiopian health care workers' insights into and responses to IPV in pregnancy.	Qualitative study, on 10-HCWs (Midwives & Nurses) interviewed at ANC clinics	-	-	Themes	Thematic content analysis in the Atlas Ti software

4.3. The Quantitative studies

4.3.1 Study population

All pregnant women coming for ANC check-ups in the study institutions during the data collection period and those who fit the inclusion criteria (those who are in 2nd trimester and above specifically 24 weeks or more weeks of gestation, volunteer to participate, and not severely sick or in pain) were invited to participate in the study. We obtained the participants' voluntary consent after explaining the aims of the study, the importance of their confidential response and privacy.

4.3.2 Data collection procedures

The data were collected at the ANC follow up in all Jimma Town governmental health institutions from November 2015-March 2016, using interview tools identified in the literature (188, 214). These were translated into two major local languages (Oromifa and Amharic) by a translator, with a subsequent back translation into English by a second translator and adapted into the local context and for purpose of the study. The questionnaire was pretested before the initiation of data collection on 5% (i.e, 36) of the total sampled pregnant women with similar socio-demographic characteristics from institutions not selected for the survey. Subsequently, all necessary modifications were made and crucial information which was not included initially added into the instruments. Data collectors were female midwives or nurses working at the respective institutions. The training was provided on the introduction of IPV and IPV in pregnancy, instruction on interview techniques and procedures, detailed study of questionnaire contents, role play or / mock interviews with each other and training interviews with real responders.

4.3.3 Sample size and sampling procedures

The sample size was calculated (for the quantitative studies) based on a single population proportion formula using the assumptions of a 95% confidence interval, 4% degree of precision. We assumed 50% as IPV expected prevalence based on the average from previous studies (69, 215) and a 20% non-response rate (to minimize bias due to non-response) for our power calculation, indicating a sample size of 720. The number of clients to be recruited from each study facility was estimated based on their average monthly client flow.

4.3.4 Data source

The sources of data for the quantitative studies were primary data captured by face to face interview of pregnant women at ANC units of each study institutions. Information on entry into ANC was taken from the ANC records, together with the date of the first ANC visit. Timely ANC-visit defined at 16 weeks of gestation or less and late ANC-visit after 16 weeks of gestation. The gestational age was estimated by the Midwife/Nurse based on the woman's account of her last normal menstrual period (LNMP), or the clinical assessment and fundal height measurement.

4.3.5 Variables and measurements, paper I

The experience of IPV captured using the Abuse Assessment Screening (AAS) tools (214, 216, 217). IPV during the current pregnancy was the outcome variable; operationalized as, answering 'Yes' to any of the following: "since you've been pregnant (current pregnancy), have you been slapped, kicked, or otherwise physically hurt by your intimate partner (husband, ex-husband or boyfriend)". While the social-ecological factors shown in Fig.1, adapted from researching violence against women: a practical guide for researchers (218) was used to identify exposure variables in the paper I (see Table 3).

Abuse assessment screening tools

Our study uses IPV as an outcome variable in Paper I and exposure variable in Paper-II, to obtain valid and reliable information on IPV in pregnancy in line with the objectives. As evidenced in the literature,

there is no single IPV screening tool that has sound psychometric properties, as sensitivities and specificities varied widely within and between screening tools. The measurement of experiences of violence by pregnant women, AAS tools developed by the American Medical Association (AMA) and Nursing Research Consortium on violence was used in our study. AAS is one of the most valid and widely used IPV screening tools to screen partner abuse in pregnant populations (219). It consists of five short questions to screen for IPV in pregnancy. Literature evidenced that it has improved detection rates of battering both before and during pregnancy compared to a standard patient interview (214, 216, 219-221). Although the AAS tool was developed for the detection of abuse during pregnancy, it constitutes certain gaps (i.e., short length, combined items for measuring physical and emotional violence, non-availability of any measure of separate emotional or psychological violence in behavioural terms, (especially when asking participant, whether ever been experienced them). Thus, we included a separate question measuring psychological violence.

4.3.6 Data processing and analysis, Paper I

All the data were entered into the EpiData software and exported to SPSS (version 20.0) for analysis. Several ecologic factors (exposure variables) influencing the outcome, an outcome variable, and potential confounders (age and education of the woman and her partner) were fitted into the regression model to determine the independent effect of each variable on the outcome. Confounders were considered based on their significant statistical association between their effects (exposure and outcome) on crude analysis and the findings of previous studies (230, 231). Crude and adjusted odds ratios were calculated with 95% CIs when fitting logistic regression statistical models. The backward elimination variable selection process was used for multivariate regression to identify the final significant and independent variables (232).

We used Akaike's information criteria (AIC), (222-226) and the principles of parsimony (simple model) with few covariates, to identify the model that offered the best estimate of our data explaining the outcome (222) while bearing in mind that there is no single best model. AIC is increasingly being used when the analysis explores a range of variables associated with a particular behaviour (222-224) and used for estimating the predictive accuracy of models and guards against over fitting penalty. Based on AIC, a model with less AIC means a better fit and explains the outcome. Burnham and Anderson in 2002 also noted, once the most parsimonious model is established, the traditional null-hypothesis testing can be used to make statistical inferences (227). When adjusting for confounders, we entered all the variables in each domain simultaneously and every single factor in the variables under each domain. After analyzing the adjusted OR, a final decision was made on how to interpret the result, considering the over-fitting and under-fitting, and parsimony (237, 238). In addition, a composite score (sum of items under each area/domain factor) was generated based on the frequency of individual yes / no (Yes = 1; No = 0) responses. Those who scored above average, not expecting a normal distribution were classified as having a positive value. Keeping in the above model selection criteria, all domain factors (social, community, family, and individual) simultaneously entered into the logistic regression model, adjusted to the age and educational status of the woman and partner to analyze the strength of the association and the independent effect of each domain on IPV in pregnancy.

4.3.7 Study Variables and Measurements, Paper II

In Paper II, late entry (after 16 weeks of gestation) into antenatal care was an outcome variable. The different types of intimate partner violence in the Abuse Assessment Screening tools were considered as exposure variables as follows: whether the women have ever been emotionally or physically abused by a partner or someone important to them-was considered as- any life time emotional or physical abuse; If the different types of partner violence had occurred within the last year-referred as 'recent partner violence'; while if the women had ever been hit, slapped, kicked, or otherwise physically hurt by a

partner within the last year-considered as a recent physical violence; Recent sexual violence-if woman was forced to have sexual activities within the last year; Recent psychological violence - If woman had been insulted, belittled, constantly humiliated, intimidated, threatened of being harmed, or threatened to take away children by a partner; Recent controlling behavior-if a woman had been isolated from family and friends or experiencing monitoring of movements, restricted access to financial resources, or restricted from employment, and/or education or medical care, and Current physical violence by a partner- if the woman reporting having been slapped, kicked, or otherwise physically hurt during the current pregnancy. Whereas, the tools capturing: socio-demographic characteristics of women, and their partners; past obstetric and or/ reproductive health history and woman’s history of substance use were considered as covariates. All variables used and their corresponding measurements are also detailed in the article.

4.3.8 Data processing and analysis, Paper II

Chi-square tests were conducted to assess socio-demographic and obstetric/reproductive health differences and time of entry to ANC visits. Odds ratios (OR), with 95% confidence intervals (CIs) were estimated to assess the strength of the associations. The association between IPV subtypes and late initiation of ANC was adjusted for potential demographic, behavioural and reproductive health-related confounders. We conducted a post hoc stratified analysis based on parity.

We included different covariates in the analyses for controlling confounding variables. Our selection of covariates was based on prior knowledge using the concept of causal diagrams (DAG) that represent causal inferences, theoretical knowledge, and availability of information on specific covariates (228). While, direct acyclic graph (DAG) has increasingly become a useful tool to distinguish among the three different categories of covariates (229), but it may not be useful to identify effect modifiers. A confounder is a variable associated with the exposure and the outcome of interest, not affected by the exposure (not in the causal pathway), that change the effect estimate when included in the model (230) (Fig. 4A). A failure to appropriately control leads to biased estimates. In other ways, a confounder should not be affected by the exposure and is an independent risk factor for the exposure or outcome or both. A covariate is an effect modifier if the magnitude or direction of the association between the exposure and outcome varies within the levels of this covariate. When effect modification/interaction present, there will be different results for different levels of the third variable, and if present (effect modifier) should be reported in itself. Likewise, a covariate can be defined as an intermediate factor (Fig. 4B), when the exposure changes the mediator and the change in mediator affecting the outcome (231), and controlling for it may block the association between exposure and outcome leading to misleading results. Considering these, in Paper-II, IPV sub-types are exposure or predicting and Late ANC an outcome, and potential demographic, behavioural and reproductive health-related variables are confounders.



Fig. 4 Simple Directed Acyclic Graph (DAG) for the study of ANC.

4.4 The Qualitative studies

4.4.1 Study Design and Setting

The qualitative studies are based on interviews carried out using an exploratory design to gather different stakeholders' and HCWs perspectives towards IPV in pregnancy. The studies were conducted in Jimma town at different public institutions (Table 4). These include the Women's Affairs office, Court office, Police station, Churches, and Muslim Imams' office, for Paper III, and the five health institutions presented above for paper IV, from November 2015-April 2016. The participants were interviewed at their workplace.

Table 4. Summary of the study setting and major activities

Setting	Major functions
Women's affairs office	Implementing gender-relevant national policies and guidelines helping women victim of violence, counsel them or send them to the police (in case of severe physical attack)
Court office	Work on civil and criminal issues of women. The criminal court deals with crimes such as rape, and murder, while the civil court deals with family cases such as divorce, custody, and properties.
Police station	Women protection unit in police station organized at the federal and regional level, are responsible for handling cases of violence against women (investigate and process cases for court)
Churches, and Imams' office	Provide religious services
Health care Institutions (ANC units)	Provide health care service, specifically ANC, Child-birth service, and other maternal and child health care services

4.4.2 Sampling and Selection of Informants

We purposively selected participants after presenting the objective of the study to the heads of each study institution, who recruited the participants among their staff members working at the institutions, based on the criteria (i.e., those working at the respective units, and willing to provide their opinions on the subject freely). Then, participants were contacted in person to arrange an appointment that was convenient with their working schedule. A total of 26 interviews, of which 16 interviews held for Women affairs, Judges, Prosecutors, Police officers and Religious leaders (Christian and Muslim) (Paper III) and 10 Midwives and Nurses (Paper IV), at their work place. Participants representing various governmental institutions characterized by a wide range of age, education, profession, religion, and responsibility (Table 5) included in the study.

Table 5. Characteristics of the study participants (N=26).

Participant characteristics		n
Age	18–35	12
	36 & above	14
Gender	Male	11
	Female	15
Marital status	Married	23
	Single	3
Religion	Orthodox	9
	Muslim	9

	Protestant	8
Level of education	Grades 6–12	1
	Above 12 th grade	25
Occupation	Law enforcing bodies, (police officers, judges, and prosecutors)	7
	Religious leaders	7
	Women’s affairs	2
	Health Care workers	10

4.4.3 Data collection process

Participants’ voluntary consent was obtained before the interview after explaining the aims of the studies, being assured of their confidential response and privacy. We focused on conceptual requirements and continued data collection until no additional information emerged and saturation reached (232, 233). Taking into account the sensitivity of the study – the interview took place in a safe and secure place at the different workplaces. The atmosphere during the interviews was smooth for most but very few specifically female participants signal emotionally disturbed, as it provokes their victim status, while for others relieving. On the other hand, all men participants were comfortable during the discussion. We prepared for taping the interviews, but as the majority of the informants declined, the primary investigator (first author) conducted interviews that lasted an hour on average each with two trained note-takers having midwifery backgrounds took comprehensive notes during the sessions. Having note-takers who took notes during the session helped us not to interrupt the flow of information, as simultaneous note-taking and moderating by a single individual distract the discussion process. Immediately after each interview, the interview team took some time to review the notes and detail the information by expanding on the notes and /or add important comments or points. This would help us not to lose valuable information as things are still fresh in our minds and thereby enriching the scripts.

The interviews were conducted in Amharic (the official language of Ethiopia), as all the research team (interviewer, assistants, and interviewees) were able to speak the Amharic language. All the notes were later translated into English directly after the interview by the interview team and checked by others (outside the research team) with English and Amharic proficiency to ensure the accuracy and trustworthiness of the data. To clarify statements, a total of five sets of notes were discussed later with the informants and amended. Debriefing sessions with each participant on the notes were done after each session to ensure matching between the notes and the interviewees’ statements and possibly helped us to enrich our data.

4.4.4 Interview guides/tools

The qualitative data semi-structured interview guides were developed based on predefined (abstracted from the review of different related literatures on the subject (148, 154, 234-236), authors’ prior experience, expert opinions, and emerging interview guides. The instruments were pretested by the research team (PI and assistants) for cultural suitability and clarity. This was done in other sites not included in the study. Interview guides that are considered common to all leaders, and institutions consisted of the following key domains: the participants’ experience with IPV victims, current routine and institutionalized responses, views on reporting to police officers, whether they were aware of any medical and/or physical consequences of IPV in pregnancy, and any existing collaborative efforts or networking with relevant stakeholders (Paper-III) to capture the different aspects (perspectives) of

stakeholders. While Paper IV captured the HCWs' insights on the consequences of IPV in pregnancy; individual encounters with and responses to pregnant IPV victims; and their recommendations on what could be done about IPV in pregnancy. The consolidated criteria for reporting qualitative research (COREQ), was followed (237), in both qualitative studies.

4.4.5 Analytical procedures

4.4.5.1 The theory of Gender and Power

IPV is a socially constructed and complex problem shaped by a set of interacting factors (cultural, religious, socio-economic, political) that needs to be understood within the wider social context (238, 239). Public perceptions and attitudes shape the social climate in which such violence takes place and either perpetuate or discourage its occurrence (199-201). Many formal and informal resources do exist to assist women experiencing IPV, but studies demonstrate that disclosure, help-seeking, and subsequent utilization of these resources are often hindered by socio-cultural, economic and institutional factors (202, 203). Challenging these harmful gender norms and power inequity requires assessing the views beyond the individual level (32), addressing embedded societal perspectives, exploring if the different attitudes and routines of various institutions that maintain tolerance or justification of IPV.

To better understand how this influences the responses of IPV in pregnancy, we decided one of our studies be guided by the theory of Gender and Power mainly at the analysis and interpretation stage. Gender and Power are rooted in the individual, interactional, and institutional dimensions of most societies (250-252). One of the most influential theories of gender and power is the one developed by Robert Connell in 1987, which is a social structural theory that explores the depths of sexual inequity as well as gender and power imbalances (253). Based on Connell, there are two levels at which the three constructs [the sexual division of labour, power and control, and the structure of cathexis (social norms and attitudes)] of the theory of Gender and Power exist, at the societal and institutional levels (253). The sexual division of labour, at a societal level, divides women and men into gender-specific occupations where women are assigned to unequal, lower-paying positions. At the institutional level, women are often assigned uncompensated responsibilities such as childrearing, housework, and caring for the sick and elderly. Due to the uncompensated nature of this work or not income-generating, the economic divide that favours men over women has a profound implication on women's health and well-being. Hence, the basis for the sexual division of power begins at the societal level with the inequality of power between men and women. The sexual division of power, at the institutional level, is maintained by abuse of power, authority, and control (254). Men who abuse women often see the woman's feelings and concerns as being less worthy than their own and lack empathy for these women, often believing that the woman should take care of the man's feelings. The structure of cathexis (240), identified by Connell to address the affective nature of relationships (social norms and attitudes), defining culturally normative roles for men and women. At the societal level, the structure of cathexis characterizes the attitude of women towards men and this dictates appropriate sexual behaviour from the woman. In addition, patriarchy legitimizes men by the virtue of their gender to dominate and exercise their power over women, and use violence to strengthen their position over marriage. Supportive attitudes of wife-beating and the presence of strict gender roles in the society (187, 241, 242) linked with IPV implying the adverse effect of such structure. Women may perceive themselves as having no power to liberate themselves over partner violence or may even believe to deserve it. Therefore this model was also used as a theoretical framework to investigate how the structure of cathexis, along with the structures of the sexual division of labour and the sexual division of power influences the encounters and responses of different institutions about IPV in Pregnancy.

4.4.5.2 The content analysis

Since qualitative research is about conducting the study in the natural setting in which the event is rooted, the researcher plays an important role in collecting participants' words, analyzing them by searching for common themes, and focusing on participants' meaning, and describing the process (257). The Hsieh and Shannon content analysis approach is mainly used in AtlasTi software (for both papers III and IV). This approach consists of three distinct approaches: conventional, directed, or summative. In conventional content analysis, the coding categories are derived directly from the text data; directed approach, the analysis starts with a theory or relevant research findings as guidance for initial codes; while, a summative content analysis, involves counting and comparisons, commonly keywords or content (258). All three approaches are used to interpret meaning from the content of text data. The major differences among these approaches are coding schemes, origins of codes, and threats to trustworthiness. These approaches (mainly conventional and direct approaches) are used interactively in our analysis.

Content analysis is guided by a more structured process that can provide predictions about the variables of interest or the relationships among variables, and thus helping to determine the initial coding scheme or relationships between codes. This has been referred to as inductive category application (243). Initially, we had to rely on preconceived literature/ theory (deductive), while having codes for emerging issues (inductive), iteratively. It is also stated that relying on a purely inductive analysis approach limits the possibility of the researcher forcing a preconceived result, that initial codes are drawn from researcher expertise, topic inquiry, existing literature or frameworks. We had themes or ideas (pre-set categories) and preliminary analysis was done from the data gathered, scripted, reflected, write summaries, created categories and emergent categories as we work through the data to adjust the interview guide. It is also noted that using existing theory or prior research, researchers begin by identifying key concepts or variables as initial coding categories. Hsieh HF and Shannon SE, 2005 (243) also recommended, if the researcher feels confident that the initial coding will not bias the identification of relevant text, then coding can begin immediately. Finally, after classifying all scripts into their respective categories and themes we started describing and interpreting both the manifest of content [what the text says (244)] and the latent content [the interpreted meaning (245)]. We interpreted the content of textual data through the systematic process of coding and recognizing themes and categories (Table 6), adapted from Elo and Kyngas (246), and based on previous research on IPV, the concepts of theoretical approaches chosen (gender and power, in paper III), as well as emerging issues. It is also worth noting that, no theme can entirely be inductive (data-driven) or deductive (theory-driven), as researchers' knowledge and preconception inevitably influence the identification of themes (247), thus we did both ways interactively.

In conclusion, our analyses was mainly an iterative process [going back and forth (the dynamic)] between sampling and coding data on the one hand and theoretical- and literature-in-the-field-reading on the other. The outcomes of content analysis are categories or themes describing the issue and its goal is to provide an understanding of the issue under study (243, 246). The thematic content analysis approach applied to describe or explain the phenomenon of intimate partner violence in pregnancy by examining the real-world experiences of the community. In this study, the analysis progressed until the manifest content was clarified and the categories and subcategories determined. Taking into consideration the iterative nature of the qualitative study, data collection and analysis were done simultaneously. The first author did the data coding and categorizing using the Atlas.ti software. Then the co-authors reviewed and agreed upon the final list of categories and themes. Having constant peer-debriefing sessions among the research team, a flexible interview guide, multidisciplinary research team, and predefined analytical procedures and emergent design and constant comparison and

checking between the text, codes and categories were done to promote the trustworthiness or rigour of the study.

Table 6. Summary of major steps followed in the Atlas Ti analysis, based on thematic content analysis (Papers III and IV), and Connells’ theory of Gender and Power (paper III):

S.N	Steps	Description of process
1	Creating file naming and Importing files	Create file name and save the project (under new hermeneutic unit/analysis project) and importing all scripts (all Interviews) and line up under ‘P-Docs’
2	Familiarizations	read and re-read all scripts to make a general impression out of it and reflect on the overall meaning
3	Condensed meaning unites	each script opened turn by turn and meaning unites that gives sense created
4	Coding	Codes created, “Create codes (labels)”, under code manager, highlight quotations that best describe the main findings, then drag and drop codes for each respective quotation, or create new codes as necessary, then grouping data related to each code
5	Categorizing	Codes collated -codes are grouped into clusters around similar and interrelated ideas or concepts- leading to themes.
6	Themes	Interpretative concepts that describe aspects of data (categories) created as a final output of the analysis
7	Producing-out puts (themes)	Open code manager, click on each code, click on outputs and save each output of the codes of categories/families
8	Result (describing themes and quotations)	In the result section, a detailed description of each output of categories under the respective themes, based on the content Analysis method (selected for this specific analysis) and include supporting quotations in each respective theme
9	Discussion	In the discussion, we interpret results and discuss them in light of relevant literatures within the topic and /or theory.

4.5 Ethical aspect of the study

Ethical approval to conduct the study was obtained from the Norwegian Regional Ethical Committee (NREK), and Jimma University College of Health Sciences, Institutional Review Board (IRB), following the Helsinki Declaration of 1975, as revised in 2008 and WHO recommendation on Ethical safety for domestic violence research (248). A collaboration letter written by Jimma University was also handed to the respective administrative bureaus to obtain permission for data collection. Verbal and written consent for data collection was obtained from eligible participants. For participants under the age of 18 years, no parental informed consent was required as the Ethiopian National Research Ethics Review Guideline (2014), section 8.3.5.3 stated, “emancipated minors (i.e., those working or earns their living, married, parenting) and “ research related to sensitive topics, such as drug use, sexuality or reproduction, and STIs where obtaining consent from a parent or guardian may be problematic to the minors because of the nature of the research”, assent with a waiver of consent may be applicable. Thus, assent was obtained from women aged 15–17 years who are entitled to be legally capable. Respondents were also fully anonymized and assured about the confidentiality of their responses, their right to refuse participation or withdraw from the study at any time without giving any reason.

Intimate Partner Violence in Pregnancy in Ethiopia

Respondents in the quantitative study were provided information about the study and told that their care (antenatal care) would not be affected in any way should they decide not to participate in the study. Since the subject of the study was a private matter, involving sensitive cultural and ethical issues, it may provoke painful memories and hidden emotions; care was taken when selecting the place of interview and their emotions. Counselling was provided to all survivors by the interviewers briefly, including finding out the different options available to them, their social support networks (families, friends, relatives...etc) and the formal centres they can be supported. For example, there was an instance that a woman victim of IPV started crying while being interviewed. The interviewer stopped interviewing, helped her to calm down and provide information on the local resource centres where she can be helped. After a while, the midwife continued interviewing upon the participant's determination to do so. Telephone No. of the 1st author was also given to them if they need to talk to someone or have any concern.

The interview was done in a separate room where the conversation between data collector and participant was not overheard as well as without partners, friends, or relatives except children less than 3 years of age present. Confidentiality and privacy were also maintained to keep the women's safety and increase trust and the rate of the disclosure; only the card No., and telephone No. were collected on the questionnaire. Care was taken on ensuring that the participants should feel stronger and/ or not broken, after the interview. Data collectors for interviews were trained and reminded to respect the local cultural norms.

5. Results

A summary of the results of each paper that contributed to answering the research questions are presented below.

5.1 Summary of results, Paper I

Gashaw BT, Schei B, Magnus JH. Social-ecological factors and intimate partner violence in pregnancy. PLoS ONE 13(3): journal.pone.0194681.2018.

In the current pregnancy, more than one in three women (35.6%) reported experiencing IPV. Half or more women experienced sexual, psychological, or physical abuse in the past year. One-third returned to their family (32.4%) or remained silent (29.5%) during IPV incidents. The main reasons for being silent are: not to leave children, feeling ashamed, respecting the tradition of valuing marriage, not having money or going anywhere, fearing that the husband may retaliate or kill them.

A logistic regression model was fitted to examine significant variables under each ecologic domain factors associated with IPV in pregnancy for age and education of woman and partner. The odds of IPV in pregnancy were higher among women reporting violence as a means to settle interpersonal conflicts (AOR=2.6; 95%CI=1.7,3.9), presence of supportive attitudes of wife-beating (AOR=2.6; 95%CI=1.7,4.2), regarding violence as an expression of masculinity (AOR=1.8; 95%CI=1.2,2.9), and presence strict gender role differences in the society (AOR=4.1; 95%CI=2.2,7.8). Community-related factors that significantly and positively associated with IPV in pregnancy included: the presence of groups legitimizing men's violence (AOR=3.0; 95%CI=2.0, 4.5), women feeling isolated (AOR=2.5; 95%CI=1.7, 3.7), having no social support (AOR=2.6; 95%CI=1.7, 4.0) and the presence of high unemployment (AOR=3.0; 95%CI=1.6, 6.0).

Family-related factors increasingly associated with IPV in pregnancy were: household property controlled by a partner, difficult intra-spousal communication, and marital conflict. The reporting of violence in the woman's childhood, partner experienced and witnessed violence as a child, his use of substance/s, and his having mental health or personality problems were individual-related factors increasingly associated with IPV in pregnancy. Likewise, the dichotomized sum of the score for each domain of Societal (AOR: 2.1; 95%CI: 1.2, 3.7), Community (AOR: 2.1; 95%CI: 1.2, 3.6), Family (AOR: 5.8; 95%CI: 3.5, 9.5), and individual (AOR: 12.2; 95%CI: 6.9, 21.5) factors were positively and increasingly associated with IPV in pregnancy, and the individual related factor having the highest effect size.

5.2 Summary of results, Paper II

Gashaw BT, Magnus JH, Schei B. Intimate Partner Violence and late entry into antenatal Care in Ethiopia. J Women and Birth. 2018. 32 (6).

Of the total pregnant women who participated in the study, one-third were in parent-arranged marriages and/or had experienced early marriage before the age of 18, and 15% were in a polygamous relationship; 61% of women had a trusted, supportive, and/or respectful relationship. Most women (54%) started late in the ANC from rural and 51% from urban.

Concerning the time of ANC initiation, more than half (51.8%; 95%CI= 48.1, 55.5%) pregnant women entered ANC late, while 48.2% timely in their first ANC visit. Analyses of the full sample of IPV and late entry into Antenatal care show a statically significant association between partner sexual violence (AOR=1.55: 95% CI=1.09, 2.19) and partner controlling behaviour (AOR=0.56: 95%CI=0.38, 0.85) and late

entry into ANC. However, when the analysis in the logistic regression model stratified by parity and controlled for demographic, behavioural, and reproductive health-related variables, it shows a significant positive association between the lifetime emotional or physical abuse and late entry into antenatal care (AOR =2.28; 95%CI=1.18, 4.39), among multiparous women, but did not reach the level of significance among nulliparous. Whereas, a recent partner sexual violence was associated with late entry into ANC (AOR =1.55; 95%CI=1.09, 2.19), in all groups.

5.3 Summary of results, Paper III

Gashaw BT, Magnus JH, Schei B, Solbraekke KN. Community Stakeholders' Perspectives on Intimate Partner Violence during Pregnancy-A Qualitative Study from Ethiopia. *Int. J. Environ. Res. Public Health*, 2019, 16 (23).

This study aimed to explore community stakeholders' perspectives related to IPV in pregnancy, using an exploratory design qualitative study.

The study produced data from multiple perspectives of participants (16) and settings with a wide range of socio-demographic characteristics. From the analysis of the interviews, the following major themes emerged, in light of the theory of gender and power: reconciliation as the main response; reluctance to initiate officers' action; limited awareness of the consequences of IPV during pregnancy, and lack of coordinated responses or strategic plan.

Participants met many pregnant and non-pregnant battered women. They express IPV as a private problem that happens to people of all ages but is hidden among the elderly. It is accepted/tolerated in the community if not severe and the interference of neighbours not allowed. They expressed their desire to advise the victims to be tolerant and to seek reconciliation with their partner. Participants provided several socio-cultural, structural, and economic accounts of why they prefer agreement between couples (see Table 7). Other reasons for encouraging reconciliation were the fear of divorce and its psycho-social repercussion on the children. These include children of the divorced family become more raped, street children and it goes vicious circle. The religious leaders interviewed reinforced the idea of condemning divorce by citing religious accounts, helping a woman to stay with her husband using religiously informed advice and quoting related verses, and emphasizing the essence of forgiveness to preserve family and children, generation, and the country.

Participants underline that some male police officers have a problem when it comes to IPV, and they may even abuse their wives. It is then difficult for female officers to carry out their responsibilities as they may be intimidated by their male counterparts. As a result, they do not support the idea of reporting IPV cases to the police. Participants reported how IPV affects women and the fetus, including death, bleeding, and abortion during pregnancy. When they highlight the effect of IPV on the fetus in general, they said, "fetus listens to what is going on outside." They also underline that pregnancy affects a couple's relationship by removing the husband's attention from the woman, and he may step to other women.

Participants acknowledged, despite regular victim encounters, there are no strong victim support or networking between related organizations, other than limited referral link between the police, women's affairs representatives, and the courts. These in turn contribute to a community's preference for reconciliation between couples and indicate the social gender system and socio-cultural norms act as barriers to adequate assistance to victims.

5.4 Summary of results, Paper IV

Gashaw BT.; Schei B.; Solbraekke KN.; Magnus JH. Ethiopian Health Care Workers' Insights into and Responses to Intimate Partner Violence in Pregnancy—A Qualitative Study. *Int. J. Environ. Res. Public Health*, 2020, 17(10).

The purpose of this study was to examine Health Care Workers' (HCWs) insights and responses to IPV. Themes emerged, using an exploratory qualitative study design and semi-structured interviews with HCWs representing prenatal care units of various healthcare organizations: mainly claiming physical violence as an adverse pregnancy outcome; Recommendation for reconciliation with the offender; and recommending a change in health care systems.

Our study has identified that health professionals frequently encounter pregnant IPV sufferers with various complications as a result of partner violence. However, their response is mainly limited to the treatment of obstetric complications and other visible trauma. Professionals have limited knowledge about the effects of IPV on pregnancy and consider that physical violence, in particular, adversely affects pregnancy outcomes (Table 7). One participant gave her account: "I have repeatedly encountered victims of partner violence with obstetric problems, but I did not help them much, except for the clinical management, and I myself was assaulted by my partner; I think IPV has nothing to do with ANC because it is not listed on the ANC card, we mainly focus on whether there is an injury to the fetus, check its movement and heart rate".

HCWs also emphasize the impact of IPV during pregnancy as it may act as a barrier to every aspect of life and opportunities, including women's access to health care and ANC. However, they express that they do not ask women if they were victims of IPV, as they fear and lack skill in managing the resultant consequences and emotional problems that may arise upon disclosure. Other reasons given for their limited assistance were: the absence of IPV on the item's listing of the ANC chart, lack of guidelines on how to manage IPV, lack of skills and knowledge on how to screen, and instructions on how to help IPV victims.

Our study identified that no linkage that allows HCWs to report IPV to the police, and this may help criminals not held accountable for their actions. Even when the police realize that the offender is a husband, they immediately send the woman to neighbours for reconciliation, expressed by the participants. In addition, if a partner realizes that his wife is stepping to the police, he may even become more aggressive and end the relationship. If a woman loses a husband, the breadwinner and leaving the children behind is equivalent to turning her life from bad to worse. Therefore, advising victims to be calm, inviting their husbands and teach that IPV may affect the fetus during pregnancy (without mentioning what happens between couples (IPV)) were the strategies reported by HCWs, and forcing them to promote reconciliation.

Participants also underlined the absence of formal referral linkages to transfer victims to other resource centres. They recommended the need for women empowerment, awareness-raising, training of HCWs, incorporate IPV screening tools in the ANC chart/card, and develop a protocol and referral process to improve the responses in the fight against IPV and prevent its impacts on pregnancy outcomes.

Table 7. Sample content analysis of HCWs' response (theme 1) and the community stakeholders' responses (theme 1, based on Connell's theory of gender and power) to IPV in pregnancy

Papers	Condensed meaning units	Codes	Sub-themes	Themes
Paper 3, theme 1	Reconciliation, tolerance, prayer repairing marriage as a solution	Reconciliation is commonly preferred Keeping with the marriage	Reconciliation was taken as the best solution to attenuate IPV (social norms, values and attitude)	Reconciliation considered as the main response
	Most women are economically dependent	Economic dependency	Women's economic dependency as a barrier not to leave an abusive partner (the structure of the sexual division of labour and power)	
	Women should stay in abusive relationships for the sake of their children/sacrifice Women fear the social and spiritual consequences of divorce	Having children Fear of divorce	Having children and fear of divorce as a barrier not to leave abusive partner, (the sexual division of labour, social norms, values and attitude)	
Paper 4, theme 1	Perceive mainly Physical IPV adversely affecting pregnancy outcomes HCWs only treat visible trauma HCWs lack skills and knowledge on how to manage IPV victims.	Physical violence adversely affecting pregnancy outcomes Lack of skills and knowledge	HCWs regard mainly Physical Health consequences to have an adverse outcome on pregnancy HCWs respond to IPV mainly by treating obstetric complications and visible trauma	Mainly Physical IPV considered having adverse outcomes of pregnancy

6. Discussion

6.1 Discussion of Methods

This study was carried out using a mixed-method overall design (quantitative and qualitative methods). The use of more than one method is usually considered as a means of adding new perspectives and provides a detailed picture of the study that enhances the integrity of findings (206, 249). Although the advantages of mixed methods research design are acknowledged by many researchers, it is also challenging when both methods are used in the same study because of variations in their philosophical orientations (positivist vs. interpretivist) and views on reality (263). However, both of these studies in our thesis are designed to understand a particular area of interest, and they have both strengths and weaknesses. When combined (as in this study) there is a great opportunity to reduce the gaps of each method and reinforce the benefits for better results. Jogulu and Pansiri reinforced this idea and linked statistics to thematic approaches to avoid over-reliance in the former, capturing “soft central views and experiences,” and subjective factors necessary to identify complex social situations (264). Similarly, other scholars have suggested that conceptual analysis may run the risk of imposing the meanings of dominant groups on participants from more marginalized groups, while, thinking with theory, can challenge researchers to move beyond their taken for granted assumptions and see the world from different angles, through the qualitative study (265). In conclusion, the use of mixed methods designed to understand a particular aspect of the study provides a better understanding and comprehensive evidence of the problem that in turn provides strong support for the interventions.

6.1.1 The Quantitative studies (Paper I and II)

Strengths and limitations of the studies

The quality of a quantitative study is often considered in terms of precision (random error), and validity (systematic errors), (250). This study used primary data, and we did a pre-test to ensure that the data collection instrument was culturally appropriate and understandable by the participants. We also used a standard and translated survey questionnaire; trained data collectors using a standardized training manual; the study (paper I) guided by the Social Ecologic framework; ensuring privacy and confidentiality and regular supervision of data collection by the principal investigator and the research assistants support the reliability and validity of the data. Taking into account the complexity of factors impacting IPV in pregnancy, the simultaneous assessment of all social ecologic factors (in Paper I) while controlling for potential confounders may suggest its strength. To increase validity we used AAS, one of the most widely used instrument to detect IPV among the pregnant populations (219). A systematic review conducted to identify the quality of IPV screening tools tested in healthcare settings indicated AAS constitutes 93%–94% sensitivity and 55%–99% specificity (217). Nevertheless, the AAS specificity is evaluated in only a small number of studies done both in the developed and developing countries (217). On the other hand, an IPV screening tool with high sensitivity would avoid missing affected victims. This tool has been successfully used for similar studies in both developed and developing countries (220, 251-253), as well as in some African countries. For example, studies in Uganda (104); and in Nigeria (254), reported the prevalence of domestic violence in pregnancy as 28% and 27% respectively but did not report its specificity and sensitivity. While evidenced as having a high IPV detection rate in pregnancy, the evaluation of the psychometric property of AAS requires further testing and validation in diverse populations and cultures.

Reliability addresses the degree of consistency or stability of a measuring instrument (255). To validating the instruments and reducing error in the measurement process, in the paper I-consistency (internal validity) of factors for each four domain was measured by Cronbach’s alpha and were all in the

acceptable range (alpha value 0.7 and above). The assumption in logistic regression analysis that exposure variables included in the model should be independent of each other (no multi-collinearity or redundancy) (256) was checked by a variance inflation factor (normal < 10), tolerance test (normal > 0.1) and examining the standard errors of the regression coefficients (normal < 2). The use of AIC and parsimony (in the Paper-I) in selecting the best model, making inferences (good prediction) and interpret the result based on it may also imply strength.

While considering that our study will add knowledge to the prevention and management of IPV in pregnancy; we acknowledge its limitations. The subject studied is very sensitive and even stigmatizing; assessment of IPV and associated factors based on self-reporting might have introduced both random and systematic errors:

Random error (chance)

The presence of chance (random variation) should always be kept in mind in designing studies and interpreting the data. It is also evidenced that a small sample size may lead to imprecise estimates, and committing type I (false positive) or type II error (false negative). The sample size is often the dominant factor in determining the precision, vital in answering the research question, ensuring the true relationships thereby avoiding type II error. The larger the sample the more precise the estimates (257). The role of chance in this study was addressed by using an adequate sample size (720), estimated based on necessary assumptions. Additionally, proportional allocation to sizes was done to each five study institutions, to enhance representation and increase precision and power. The required statistical tests were also done to get some idea of how close our estimates are to the true population value and quantify the role of chance by determining parameters of random errors including P-values (a measure of consistency between the data and hypothesis or the probability of the data could have occurred given the null hypothesis true (258)) and the 95%CI for each measure of association (odds ratio). The narrower the CI, the higher the precision (as measured by the narrowness of CIs) and the lower the random errors (257), or the more precise the effect size. Conversely, the wider the CIs, the greater the uncertainty. While, the 95%CIs in our studies are not as such wider, implying good precisions. Other multiple sources of bias might influence the internal validity (systematic errors) of our study, mainly selection, information, and confounding biases that are briefly discussed in relation to their influence in our quantitative studies as described below:

Selection bias:

Selection bias may occur during the identification of participants if the selection process is based on the exposure and the disease under the study (259). To avoid selection bias, one should try to ensure that the participants are similar in all important respects other than exposure status. Bias could occur if the response rate was higher in the most heavily exposed persons who had been diagnosed with the disease than in other persons (250). For example, in this study, the bias would have been introduced if the exposed and unexposed groups differ in some important respects other than the exposure status. Selection bias may result in spurious association towards or away from the null. In this study, data on socio-demographic, reproductive health characteristics and women's exposure to IPV were collected at 24+ weeks of gestation to ensure individual women's exposure status stringently and avoid potential bias.

The estimates of IPV, late entry into ANC and their associations (especially in Paper II) are among those who came for ANC visit at one specific period. It may be that many women exposed to IPV are likely not attending ANC at all or attend more lately. If included, and meet them at multiple time point it may have altered our estimates, while providing other important information.

Information bias:

Whether the information gathered, in the same way, affects the result. Information bias or misclassification of results arise from the incorrect determination of exposure or outcome, or both (250). Misclassification can considerably affect the validity of a study. We tried to minimize this by ensuring misclassification non-differential; by ensuring that exposure information is collected identically in all participants. we also tried to minimize information bias on the accuracy of recall of exposures by trying to validate the classification of exposure; e.g., by comparing interview results with other data sources such as ANC records, and assessing the potential magnitude of bias due to misclassification (including underreporting, cultural bias, recall bias, social and desirability bias) of exposure and/or outcome.

Since the subject studied is a very sensitive one, which may be considered to override the couples' privacy, fear of retaliation and cultural norms, one would expect to under-report due to the social stigma surrounding domestic affairs including partner violence. There might also be low rates of disclosing violence due to fear, feelings of shame, or embarrassment, and lack of information about community resources. The response rate, on the other hand, maybe inflated by recent incidents of IPV or ignored or forgotten if incidents occurred long ago which also might have introduced bias. However, it is unlikely that underreporting has resulted in differential misclassification of exposure. Hence, the underreporting, assuming it was non-differential, would only have weakened the association between the exposure and outcome. Data collectors, being speakers of the local language, familiar with the values, culture and norms would help them to easily understand participants' account, overcome information biases. Recall bias may have also influenced the results; one could hypothesis that women exposed to IPV were less likely to precisely recall the date of their last normal menstrual period (LNMP). Hence their estimated entry into ANC as to gestation age would among the exposed women have a wider range, thus our estimate may have been conservative. In addition, ultrasound is not a routine procedure in ANC and gestational age was measured by LNMP and/ or fundal height, which may have also introduced misclassification in the outcome (paper II).

Confounding:

is a variable associated with both the outcome and the exposure without being a consequence or intermediate in the causal pathway (260), and may create a spurious association or mask a real association between the exposure and the outcome if not controlled. Controlling the bias caused by confounding requires careful use of a priori knowledge, together with assessment of the extent to which the effect of estimate changes when the factor is controlled in the analysis (261). Confounding can be controlled by restriction, stratification and controlling for the confounding factors in regression analyses at the different milestones of the research: at the design, analysis stage or both. In the design stage; by randomization (random allocation to exposure categories), restrict the study to narrow ranges of values, and matching study subjects on potential confounders, (ex, age), while, in the analysis, stage stratifying data according to the levels of confounders and calculate the effect estimates that summarizes association across the strata.

In the current study, we have adjusted for confounders for which we have information. However, unknown confounders may have been operating, and if known may have altered the results. We have tried to consider all these strategies in the quantitative part, known confounders were controlled in the adjusted analysis (for example, the association between social ecologic factors and IPV in pregnancy was adjusted for- age and education level of the woman and her partner in the Paper-I; and the association between IPV and late entry onto ANC was adjusted for demographic, behavioural and reproductive health-related variables in paper II). Further, to identify the model that offered the best estimate of our

data explaining the outcome, we also used Akaike's information criteria (AIC), (223-225, 227) and the principles of parsimony (simple model) with a few covariates (222) in paper 1, as results based on such a model promote numerical stability and generalizability of the results. In addition, controlling for potential confounders, in Paper II, we stratified the analysis by parity as it is a risk factor for the outcome (late ANC visit) from previous studies (184, 262). Finally, this study being a cross-sectional design limits the potential to draw causal inferences.

External validity:

refers to the degree to which results of a study can be generalized and applied to other populations, settings and time (250, 263). It can be affected by the geographic area involved, the background of the participants included, and the representation of different socio-cultural and ecological characteristics (263). The issue of external validity in our studies is whether the findings are valid for the pregnant population in Jimma, but can also be extrapolated to other regions of Ethiopia with similar socio-demographic characteristics and settings. The findings of these studies are supported by previous studies which would strengthen external validity. Hegyvary, 2002, reported integrating the findings with other similar research studies reported in the literature can be useful for positioning the study within the knowledge of the discipline (263). In this study, we used primary data from all public health institutions in Jimma town in which all pregnant women coming for ANC were invited to participate. Nevertheless, the external validity might have been threatened by the cross-sectional design, institution-based, data collected at one point in time and self-reported data.

Causal inferences: is the relationship between a cause and an outcome where the outcome is considered as a consequence of the cause. While a model of causation that describes causes in terms of sufficient and their component causes illuminates important principles of multi-causality, the dependence of the strength of component causes on the prevalence of complementary component causes, and interaction between component causes (264). Philosophers agree that causal propositions cannot be proved and not yet settled. Causal inference in epidemiology is better viewed as an exercise in the measurement of an effect rather than as a criterion-guided process for deciding whether an effect is present or not (264). An English epidemiologist, proposed a list of nine criteria while discussing the causality of an association (265): Temporality, the strength of an association, consistency, biological gradient dose-response, plausible, coherent, specificity and experimental evidence. When examining this study (quantitative) through these lenses: the strength of an association, consistency, plausibility and coherence were applicable:

The strength of an association- the association between social ecologic factors (society community, family and individual) and IPV in pregnancy becomes increasingly stronger, while IPV in pregnancy and delayed initiation of ANC were also positively associated. Consistency-the link between social ecologic factors and IPV in pregnancy; and IPV and delayed initiation of ANC has been discussed in our papers (paper I and II) with examples from other studies that support our findings. Plausibility and coherence- the associations that we have shown were plausible and coherent with the current theory and linkage between social ecologic factors and IPV in pregnancy; and IPV and delayed initiation of ANC. Whereas temporality- the directions of the relationships or the cause must come before the effect, our study being cross-sectional design, the time element and temporality cannot be claimed, neither is appropriate to determine causal relationships. However, this design is commonly used and considered appropriate for exploring associations between the exposure and outcome variables in a fixed period. Similarly, biological gradient dose-response (association increased with the increasing severity of exposure), specificity (either that one cause leads to a single effect or that one effect has a single cause)

and experimental evidence (RCT) are the criteria that do not apply to this study and calls for future more rigorous study including prospective longitudinal study with larger sample size.

6.1.2 Methodological issues in the Qualitative studies (papers III & IV)

The qualitative research studies permit the researchers to explore and better understand the cultural beliefs and gender norms that underpin the respondents' experiences and interpretation of IPV in pregnancy (205). It also encourages clarification of the views of participants, promoting a deeper understanding of the problem under study. We used an interview, one of the most commonly used qualitative methods to get an insight into how people interpret and order the world, express their opinions and experiences. Literature also indicated interviews are especially appropriate for addressing sensitive topics that people might be reluctant to discuss in the group (266). A topic such as IPV in our case is a sensitive one where interviews are more appropriate. We tried to extract a spectrum of ideas from various sources, representing different institutions (data triangulation), analyzed the data using thematic content analysis in the Atlas Ti software. Content analysis of which part of this thesis is based on the interpretation of the content of textual data through the systematic process of coding and recognizing themes or categories. The categories or themes describing the issue are the outcomes of the content analysis and its goal is to provide knowledge and understanding of the issue under study. Hence, the content analysis applied (243) to describe or explain the issue of IPV in pregnancy by examining real-world experiences of relevant stakeholders. The use of the theoretical framework (Gender and Power in paper III), helped us to have a clear understanding of the data related to the aim of the study, data collection, interpret and explain the issue under study. This in turn may enhance the transferability of our findings to other areas.

Four parameters proposed by Lincoln and Guba (267) are widely used to evaluate the trustworthiness of qualitative research: credibility (equivalent to internal validity in the quantitative or positivist research)-i.e, confidence in the truth of findings, dependability (reliability)-findings are consistent and could be repeated, confirmability (objectivity)-the degree of neutrality and transferability (for external validity)-applicability of findings to another context. While others recommended using a qualitative research validation checklist (268), to attain a wider recognition and acceptability of qualitative research methods, and as a useful criterion in the assessment of the quality of qualitative research in a more objective manner (237).

These criteria based on the interpretivist/constructivist philosophic orientations, whose central attempt is to understand the subjective world of human experience, emphasizes understanding the individuals and their interpretation of the world around them, rather than the viewpoint of the observer. Hence, the key stance of the Interpretivist paradigm is that reality is socially constructed (269). This is why sometimes this paradigm has been called the Constructivist paradigm. In this paradigm, the theory does not precede research but follows it so that it is grounded on the data generated by the research act. However, this can be argued that a given study can be guided by the prior theory developed by previous scholars, not only driven by the current data or both. As such these criteria were initially challenged (270), they are still well accepted by many scholars. Thus we tried to look through our findings by addressing these four key criteria prepared for evaluating the trustworthiness of qualitative research.

To ensure credibility of the data on my study, close rapport with participants, member check (ex, give/read scripts for participant/s) that allows further input and elaborations, peer debriefing, prolonged engagement, piloting, training and maximum variation (at multiple setting and institutions) in sampling was carried out. Additionally, as most of the informants declined to be taped, I did not record and transcribe the interviews, but field notes produced during the session. Field notes are claimed to lack credibility (not replayable, loss of or forget information, biased), (271). I tried to overcome these gaps by

running the sessions using the PI moderating the sessions and two note-takers (to ensure the participants own responses and minimize researcher bias) who are familiar with the subject matter. Summary notes were also developed by the main researcher and assistants immediately after each session. However, as the women health care workers who engage in contact with women were interviewed (in paper IV), and thus can give an experience-based view of the phenomena in question, we believe the gender composition to be relevant for our research question.

Dependability refers to whether the findings of this study may be repeated in the same context, in other places by other researchers, with the same methods and participants, similar results would be obtained, and confirmability/neutrality is the ability that these findings can be confirmed by others. However, the nature of the phenomena examined by qualitative researchers (unlike the quantitative or positivist assumptions) makes such condition problematic in their work (272), as another researcher follow the same procedure possibly reaching different results, signifying multiple realities behind variations. This assumption also holds problematic based on the constructivist paradigm and naturalistic inquiry (context-specific or setting), because human behaviour and interactions can never be static, and thus obtaining a photocopy of results between studies seems difficult. This can also be argued that because the interpretivist researcher deals with human behaviour which has a nature of continuously variable, contextual, and subjected to multiple interpretations of reality, and the researcher cannot able to replicate the same results (269). With this in mind, to ensure dependability and confirmability: scripts, codes and categories extracted from the data were examined by experienced researchers in qualitative research within the research team. Additionally, to ensure confirmability and the data represent participants' point of views, the principal investigator worked continuously to maintain a certain distance and/ or sets aside preconceived notions (273), and assumptions about the phenomenon before data collection and analysis (274). We also tried our best to make inferences and interpretation emerge from the data gathered and analyzed, but not based on our stances. Participant response bias was also minimized by not asking the informants about their own experience of IPV and reminding them to focus their response on the objectives of the study.

Reflexivity- is another key criteria to evaluate the trustworthiness of qualitative study (275). It refers to the effect of the researcher at every step of the research process and in the context of knowledge construction which is parallel to the researchers' positionality (bias/stance) accounted by minimizing the unique identities, power dynamics (ex, like a leader-subordinate relation), experiences, and biases that researchers bring to a given study (276), and may consequently affect the interpretation of results. We tried to overcome this, by having two note-takers in addition to the interviewer, and work hard to avoid imposing researchers' personal opinions and assumptions on the data and as well as trying not to manipulate the phenomenon towards our interest.

To make the participants feel safe, the interview team was very conscious to ensure that the relationship between them and the participants was built on trust. While the interview team being part of the local culture tried to establish an "optimal" distance from the study (277). This team, the first author and assistants considered themselves as an insider due to that they are being part of the local culture, able to interact with the language that all participants can speak and have shared experiences and understanding (278), with the participants (to some extent in paper IV), thereby helped them to understand the context. While, the team maintained the outsider role, partly as they are not working with the interviewees. There were also regular discussions and consultations among authors throughout the research process (design, data analysis, result interpretations and discussions among the authors) till the final stage of manuscripts endorsement, validating the dependability of the data.

Transferability: This aspect concerns the application of the findings from this study to the larger study population. In the qualitative study, however, the knowledge gained from this study could be of value for similar groups and/ or contexts. This was achieved in this study by providing rich and thick descriptions and relevant examples. Having maximum variation among participants representing different institutions (gaining information from diverse sources) was also used to enhance transferability; however future qualitative meta-synthesis study is recommended for more readily be used in the clinical practice and policy formation.

6.2 Discussion of main findings

Main findings: We found IPV in pregnancy as very prevalent in Ethiopia and associated with multiple social ecologic factors. Late entry into ANC is common in Ethiopia and associated with IPV in pregnancy. However, among stakeholders, there was limited awareness of the adverse impacts IPV in pregnancy has on the health of the woman and the fetus. The responses of stakeholders towards IPV in pregnancy seemed influenced by gender and power biases as reconciliation between victims and their abusers were the solution encouraged. We also identified that HCWs only gave medical treatment for obstetric complications or visible trauma. There is currently no organized formally structured referral linkage between the participating institutions to support pregnant IPV victims.

6.2.1 Discussion of the main findings in light of recent findings

6.2.1.1 Ecological Factors of IPV and Antenatal care

We found more than one-third of women reported being victims of IPV during pregnancy. The studies (Table 8) published from Ethiopia after our study was initiated, estimate the rate of pregnant women who experienced IPV during pregnancy between 12-59% (215, 279-286), in concert with our prevalence of 35.6%. What a successful criterion is when evaluating the rigor of a scientific paper is debated. There are variations across institutions and no standards, but we used the recommended to the best of our ability when we assess the recent studies and compared them to our results (287-289). We have assessed these studies listed in table 8 in terms of controlling confounders, design, sampling, source of tools used to identify IPV, and how the information was collected. These studies mainly identified individual-level factors, which may introduce confounding bias. Among those studies which have similar objectives to ours, all except one (283), have cross-sectional designs and claiming a cause-effect relationship is impossible. Similarly, all except one (290), did not separately consider the exposure and covariates (confounding variables) in their analysis. This may illuminate or obscure the “active ingredients” (a variable that lies in the causal pathway) while predicting the outcome (291) undermining the influence of covariates. Almost all of the studies used WHO multi-country study tools, despite reports that studies using the AAS tools involve a high detection rate of IPV in pregnancy (219, 220). This might imply a lower prevalence rate. Future comparison studies using these different tools (AAS Vs WHO multi-country study tools) are warranted. The majority (75%) of studies are facility-based, possibly introducing bias in the selection of participants and making generalization difficult. Furthermore, most of the studies have a relatively small sample size, which may yield an under-representation of the reported prevalence, and the occurrence of IPV was determined based on the reports of women who might be affected by social desirability bias. Additionally, considering the wide 95% CIs in some,(283, 284, 292, 293) may lead to less precise effect sizes. Given this several of these studies have potential biases, making it difficult to summarize results across studies and/or draw meaningful inferences and their contribution. These reflections and methodological issues are summarized in table 8. Our conclusion is that they do not challenge the results of our study.

Our study indicated a range of social-ecologic factors associated with IPV in pregnancy. We also indicated an insensitive response to IPV by various members of law enforcement bodies, and religious leaders, the expectation that women should tolerate IPV for the sake of their children, and their poor economic status as some of the main structural factors forcing women to reconciliation. Leaving its impacts on pregnancy outcomes aside, the repercussions of these set a dire precedent for future generations. Investigating the factors of IPV in pregnancy comprehensively should be on top of the agenda for the research community. However, studies that examine factors beyond the individual level, especially, community and societal-level factors including the deep-rooted social norms which maintain gender inequality, and shaping the high rates of IPV are lacking especially in the SSA. A few studies in Africa investigated individual and family level factors predicting IPV in pregnancy (79, 294-299). There is one recent multilevel study in Ethiopia, examine IPV “among reproductive-age women, not in pregnancy” (299), which reported living in a community with high IPV accepting norms, increased the risk. Furthermore, if the women’s decision-making autonomy in the household decreased, the odds of lifetime IPV increased (300). This is in support of our findings that stated when a household property is controlled by a partner, and presence of supportive attitudes of wife-beating increased the likelihood of IPV in pregnancy) (301). This also demonstrates IPV in the general women population and during pregnancy share common risk factors to a larger extent.

More than half of the women in our study entered ANC late, increasing the risk of feto-maternal adverse events (302). The late initiation of ANC in our study is associated with IPV. This is supported by a growing body of studies that document the exposure to violence during pregnancy influence timely entry into ANC, and preparedness for childbirth (214, 251, 303), utilization of maternal health care services (290), utilization of adequate ANC and skilled attendance at childbirth (304). In Ethiopia low utilization, and late ANC entry is still an issue, given estimates between 42–82% (290, 305-308). Only one recent study (290), identified emotional partner violence as associated with a late ANC entry.

The association of how IPV leads to late entry into ANC may be explained by physical, mental and psycho-social issues related to IPV (177, 309, 310) leading to women’s decreased physical and emotional ability to take care of their health and ANC visits. Such understanding is in line with other studies documenting an association between IPV and psychological stress or depression (311, 312), and late entry into ANC, or not attending ANC at all (309). However, not all pregnant women suffering from IPV and its mental health consequences delay or reduce the frequency of ANC. A few studies from high-income countries report that women suffering anxiety and depression are more likely to have more ANC visits, mainly due to fear of childbirth, and increased preference of C/S births (313, 314). Implicating a possibility that the relationship between IPV, its resultant mental distress and ANC use are context-specific.

The association between any lifetime emotional or physical abuse and late ANC among multiparous women in our study may, in addition to the stress resulting from exposure to violence and pregnancy-related physical symptoms; have increased responsibility in taking care of many children, consequently affecting the initiative for timely ANC visit. Studies also confirm that in multiparous women there is an elevated level of psychological distress during pregnancy (315, 316), increased likelihood of IPV (30, 317, 318) and persistent depression (319), which consequently may influence their ANC utilization. Integrating results from the qualitative and quantitative studies, the ecologic factors, gender and power biases placing the care of children only on women may constrain their healthcare-seeking behaviour and overall health. This warrants interventions on male-involvement in sharing household responsibilities and caring for children needed as an immediate solution, and transforming the societal norms and attitudes that impose such a burden on women in the long-term.

Intimate Partner Violence in Pregnancy in Ethiopia

Overall, the results of our study illustrate that in Ethiopia there is no single risk factor, but a synergistic effect of several social ecologic factors combined influencing the risk of IPV in pregnancy. This is in concert with the international literature (320, 321). Multifaceted factors contributed to IPV in pregnancy require horizontally linked comprehensive and sustained responses from several agencies at different levels. This is also suggested in a recent concept paper from Italy, that provide a set of guidelines taking into account the four levels of ecological model (322) for interventions. The relationship between IPV victimization and delayed entry to ANC identified in this study open for ANC interventions linked to IPV. However, this calls for designing and implementing holistic interventions aimed at improving maternal health care service utilization, including the inclusion of IPV screening tools in the ANC card which can be a prerequisite to detect, manage women victim of IPV and prevent its myriad of consequences.

Table 8. Summary of recent Ethiopian studies on the prevalence of IPV in pregnant women and associated factors

Author, Year	Region	Study design	Sample	Prevalence (%)	Factors associated with outcome
Kassa ZY, Mienale AW, 2016 (293)	SNNPR	Facility-based, Cross-sectional	216	12	Partner's illiteracy (AOR = 1.7, 95% CI: 1.1-2.8), unwanted pregnancy (AOR = 17.1, 95% CI: 3.5-83.2), and partners' substance use (AOR = 8.7, 95% CI: 2.98-25.6) were positively associated with partner violence during pregnancy. *The relatively wide 95%CI between partners' substance use and IPV in pregnancy shows low precision.
Abate A et al, 2016 (215)	Oromiya	Community based, cross-sectional	282	29.2	Having an illiterate partner (AOR =0.5, 95 % CI: 0.2, 0.9) decreased, dowry payment (AOR= 8.7, 95 % CI: 4.2, 17.9) increased, and not undergoing through marriage ceremony (without religious, customary or civil ceremony) (AOR= 4.1, 95 % CI: 2.0, 8.2) increased the experience violence during pregnancy
Fekadu E et al, 2016 (285)	Amhara	Facility-based, cross-sectional	450	58.7	Being housewives (AOR = 3.43, 95% CI: 1.63, 7.21), women not generating income (AOR = 3.37, 95% CI: 2.14, 7.95), partners' daily use of alcohol (AOR = 4.59, 95%CI: 1.82, 11.56), women who believed in women's rights to decide to be pregnant (AOR = 1.77, 95%CI: 1.18, 2.89), and women who disobeyed their partner (AOR = 2.36, 95%CI: 1.37, 4.07) were significantly associated with domestic violence during pregnancy. These suggest that gender and power issues (biased societal norms and roles expected from women) increased women's vulnerability to their victim status.
Biftu B et al., 2017 (292)	Amhara	Facility based, cross-sectional	418	25.4	Low educational status (AOR = 4.59, 95%CI : 1.49, 14.07), rural residency (AOR = 5.53, 95%CI I : 2.31, 13.25), unplanned pregnancy (AOR = 4.34, 95%CI : 2.35, 8.02), and late initiation of antenatal care (AOR = 5.41, 95%CI : 1.49, 19.69) were factors increasing the odds of domestic violence, *Wide 95%CI between late initiation of ANC and domestic violence suggests less precision.
Gebrezgi BH et al, 2017 (323)	Tigray	Facility based, Cross-sectional	422	20.6	Early marriage (AOR = 4.42, 95%CI: 2.07, 9.42), women with no formal education (AOR = 2.78, 95%CI: 1.10, 7.08), rural dwellers (AOR = 2.63, 95%CI: 1.24, 5.58), partners with no formal education (AOR = 2.78,

Intimate Partner Violence in Pregnancy in Ethiopia

Laelago T et al 2017 (324)	SNNPR	Facility based, Cross-sectional	183	23	95%CI: 1.10, 7.08) and partner alcohol consumption (AOR = 3.8, 95%CI: 1.85, 7.82) were factors associated with intimate partner physical violence towards pregnant women The primary aim was to examine the effect of IPV on pregnancy outcomes
Mohammed BH et al, 2017 (290)	Addis Ababa	Community based, Cross- sectional	210	18.6	The primary aim was to examine the effect of IPV on maternal health care service utilization, After adjusted for- women's and partner's age and educational status, women's decision-making autonomy, women's employment status, women's mass media exposure, marital duration and monthly income, women who experienced emotional IPV were less likely to have their 1 st ANC within three months of pregnancy (AOR = 0.69; 95%CI: 0.49–0.96).
Alebel A et al, 2018 (283)	5- Regions	Systematic review of 8 studies	2691	26.1	Mothers' educational status (AOR: 2.1, 95% CI: 1.1, 3.7), partners' educational status (AOR: 3.5, 95%CI: 1.4, 8.5), and partners' alcohol use (AOR: 11.4, 95%CI: 2.3, 56.6) were significantly associated with IPV among pregnant women. *The relatively, wide 95%CI between partners' alcohol use and IPV in pregnancy suggests less precision.
Belay S et al, 2019 (177)	SNNPR	Community based, Cross- sectional	589	21	The aim was to examine the association between IPV and depression
Azene ZN et al, 2019(281)	Amhara	Facility-based, Cross-sectional	409	41.1	Partner's lower educational status (AOR = 3.26, 95%CI: 1.45–7.36), rural residency (AOR = 4.04, 95%CI: 1.17– 13.93), partner's frequent alcohol abuse (AOR = 4.79, 95% CI: 2.08–11.04), early initiation of antenatal care (AOR = 0.44, 95% CI: 0.24–0.81), the age of women between 17–26 years (AOR= 0.21, 95%CI: 0.09–0.49), women choose her partner (AOR = 3.26,95% CI:1.24–8.57) were statistically significant factors associated with IPV towards pregnant women
Lencha B et al, 2019 (282)	Oromiya	Facility-based, Cross-sectional	612	20.3	Partner's alcohol drinking (AOR = 2.9; 95% CI: 1.5–5.4), partner's chewing Khat (AOR = 1.7; 95% CI: 1.1–2.6), partner's smoking (AOR = 2.6; 95% CI: 1.4–4.9) partner's aggressive behavior (AOR = 2.8; 95% CI: 1.7–4.6), having partner age ≥30 years old (AOR = 1.8; 95% CI: 1.2–2.9), unwanted pregnancy (AOR = 3.3; 95% CI: 1.9–5.5) and history of adverse pregnancy outcome (AOR = 2.1; 95% CI: 1.2–3.6) were the factors significantly

Intimate Partner Violence in Pregnancy in Ethiopia

Berhanie E et al, 2019 (280)	Tigray	Facility-based, Case-control	954	40.8	associated with IPV in pregnant women. The aim was to examine adverse outcomes of IPV in pregnancy
Yohannes K et al, 2019 (279)	Oromiya	Facility-based, Cross-sectional	299	44.1	The woman being illiterate (AOR = 6.3; 95%CI: 2.23, 11.65), Husband's alcohol consumption (AOR = 5.73; 95% CI: 1.87, 11.51), husband's history of arrest (AOR = 2.59; 95% CI: 1.15, 5.88) and occupation of husband (farmer) (AOR = 3.26; 95% CI: 1.29, 8.25) were significantly associated with domestic violence against pregnant women.
Adhena G et al, 2020 (284)	Tigray	Facility-based, Cross-sectional	543	37.5	IPV was associated with an unplanned pregnancy (AOR = 4.56, 95% CI: 2, 10.28)), unmarried women (AOR = 2.59, 95% CI: 1.18, 5.73), having an alcoholic partner (AOR = 3.3, 95% CI: 2.1, 5.16), spouse's having multiple sexual partners (AOR = 5.1, 95% CI: 2.2, 12.0), acceptance of violence by women (AOR = 1.85, 95% CI: 1.1, 3.16), the low decision-making power of women (AOR = 2.64, 95% CI: 1.6, 4.3), and no interest in current pregnancy by partner (AOR = 5.9, 95% CI: 2.36, 14.9). *Wide 95%CI between spouses' having multiple partners and IPV in pregnancy suggests less precision. *The association between women's acceptance of violence, and their low decision-making power with IPV demonstrate how gender and power increases their victim status
Ashenafi W et al, 2020 (286)	Oromiya	Community-based, Cross-sectional	3015	30.5	The aim was to examine the link between IPV and neonatal mortality
Musa A et al, 2020 (325)	Harari	Facility-based, Cross-sectional	648	39.8	Longer duration of marriage (AOR = 1.68, 95% CI = 1.01–2.79), recent pregnancy being unplanned (AOR = 1.55, 95% CI = 1.03–2.34), experiencing controlling behaviour by a partner, (AOR = 2.23, 95 CI = 1.46–3.40) and having an attitude that justifies intimate partner violence (AOR = 1.60, 95% CI = 1.09–2.36) were associated with experiencing intimate partner violence. *The association between partner's controlling behaviour and women's attitude of endorsing IPV indicates the influence of gender and power on women's risk of IPV.

6.2.1.2 Barriers to an effective response to IPV in Pregnancy

Gender biased Social Norms

There are several barriers to an effective response to IPV in pregnancy. In the following, we will discuss gender-biased social norms and knowledge related barriers based on our findings. These norms and attitudes dictate societal practices contrary to women's health and their human rights. Following the Connell's theory of gender and power social constructs, including the sexual division of labour, power and social norms, conflict/violence in marriage is taken for granted, and women are expected to be tolerant and sacrifice themselves for others, an outlook supported by other studies (326, 327). We also noted that traditional gender norms and power differentials are perceived as inherent and enforced by the structures deeply rooted in all formal and informal institutions. The literature also evidenced that almost all lower and middle-income countries (LMIC) have socio-cultural norms, religious values and political systems that ignore or violate women's rights (328). Like women in other patriarchal societies (45, 328), Ethiopian women are reluctant to disclose IPV and suffer in silence (329, 330). This is partly due to societal disapproval of disclosure, accepting IPV as normal, fear of further violence, and other socio-cultural and economic penalties (235, 329). When violence reaches brutal, the majority of these women resort to their informal networks of friends, relatives, and religious leaders for help. Some of these leaders, including police officers and religious leaders, may hold a culture of patriarchy, be perpetrators themselves, or side with the abusers and promote mediation, (235, 331), illustrating the responses to IPV in pregnancy are shaped by a host of structural and socio-cultural norms (187). The results of our study emphasise that societal norms exert direct and indirect pressure, make speaking out about IPV a taboo, possibly leading to under-reporting IPV and inhibiting women from coming forward or seeking help. Even in cases when they do, authorities are often unwelcoming, in turn forcing the majority of Ethiopian women to tolerate such injustices in silence. Survivors of IPV turning mainly to the informal networks in our study provide certain advantages including, the service is more accessible, affordable, and suited with the local culture. This can be an important entry point for interventions, but we need to find ways to increase their effectiveness of such networks, for example, by providing training and linking them with other formal agencies.

Consistent with other studies (202, 332), our findings identified a strong social opposition against taking the case of IPV to the court, limited access to legal services, and insensitivity of the law enforcement body are some of the main structural factors forcing stakeholders to prefer reconciliation of women with their abusive partners. Furthermore, we found that many victims keep silent of the incidents of IPV due to shame, not wanting to leave children behind, wanting to honour the value of marriage, or have no money or nowhere to go. We also found that our informants, considered having children and/or being pregnant as one of the main reasons for recommending reconciliation as a remedial action in IPV. They cited a common proverb said by many Ethiopian communities that "a Buffalo is stabbed for the sake of her child" implying that a woman having children should stay in the relationship whatever it costs. Such societal norms and attitudes continue to emphasize women's primary roles as mothers, housewives and the sacrifice of the family. Even when women decide to end the relationship, and stand up for their rights, they lack the economic power that can provide financial security, freedom, self-confidence, and social connections. Most women in Ethiopia are economically dependent on their partners (333), making it difficult to make a choice and free themselves from their abusers. Nevertheless, even though economic power appears protective against IPV, it is confounded by other aspects of empowerment including control over the resources, strength to overcome the social pressure against divorce, decision making power, and the value given to their economic contribution (334). This also implies that social ecologic factors and the gender and power imbalances influence women's health and all aspects of her life, reminding the need to consider comprehensive ecologic variables when considering interventions.

The prevailing patriarchal family values use religion to justify violence (335, 336). In agreement with our findings, one recent study in Africa illustrates, a range of patriarchal informed social, cultural, and religious factors combined explain the construction of traditional masculinity (337). Such deep-rooted, gender-biased, patriarchal orientation of the social, historical and cultural dimensions of everyday life of women in Ethiopia might exacerbate partner violence in the country. This calls for increased gender-sensitive social structures, and multi-sectoral responses to prevent IPV in pregnancy and its staggering aftermaths.

Poor Knowledge and attitude

The potential danger of IPV for the mother and the unborn child was poorly, or not comprehensively, understood by the informants in our study, and support other studies (338, 339). The limited understanding, failure to properly respond, and their exclusive focus on physical violence and its obstetric consequences, could lead to increased adverse psychosocial and physical consequences on women and their infants. Evidence shows, not only physical but also psychological and sexual violence have an impact on pregnancy outcomes (178), while more than half of women in our study faced psychological or sexual violence. Despite the psychological abuse often undervalued, studies show its association with preterm labour (340), and poor mental health outcomes (341, 342), which consequently lead to women's increased risk of thinking about harming themselves or their infants. A recent study in Norway identified women with a history of sexual violence as at risk of pregnancy-related physical symptoms, being hospitalized during pregnancy and ultimate caesarean section (343-345). It is also worth noting that a single type of IPV may not occur alone, as sexual violence is linked with other types of violence (346) with its increased adversities. In concordance with this argument, one recent systematic review study report women experiencing combined IPV increase inadequate ANC use from 25% (single type IPV) to 50 % (304).

HCWs in conjunction with other agencies play an important role in the prevention and care of IPV through ANC. However, the HCWs in our study were neither interested nor prepared to deal with IPV in pregnancy and its consequences. Studies in Europe and Asia (339, 347, 348), supported our findings, but studies are few in Sub-Saharan Africa (349-351), and our study is the first in Ethiopia. Failure to respond to IPV by HCWs may increase survivors' lack of trust, and reduce their willingness to share their victim status. A Nepali study stated that women concealed their experience of domestic violence due to fear of being insulted, discriminated against, or experience negative attitudes by the health care providers (347). However, a recent study in South Africa reported beneficial results when HCWs, following appropriate training were supportive in addressing IPV, including identification and responding to IPV in the ANC using a referral system (351). A 2011 pilot intervention study in Tanzania on screening of IPV victims after attending a training, provided HCWs with an opportunity to update their knowledge and increased their screening skills (352). However, the HCWs raised concern that screening may be challenging in resource-poor settings as it poses ethical dilemmas when women are left without adequate support. The results of these studies demonstrate the need for comprehensive training and availability of adequate resource to effectively respond to IPV in health care settings.

6.2.1.3 Interventions towards IPV in pregnancy

We found out that IPV in pregnancy is associated with a range of ecological factors which in turn influence the ANC initiation. Whereas, efforts to improve utilization of ANC service in general and timely entry into ANC care in particular, would improve maternal and child health. The ecological model used in our study support that IPV can only be prevented when all four level interventions are simultaneously integrated (348). However, our study showed there is no formal coordinated linkage among relevant

agencies. Strong evidence of effective and comprehensive interventions in the area of IPV during pregnancy is limited in general and in Ethiopia in particular. There is only one recent protocol of a randomized controlled feasibility trial aimed at problem-solving therapy (i.e., psychological interventions for prenatal depression and anxiety), tailored to pregnant women experiencing IPV in rural Ethiopia (353). There are also very few interventions conducted in Africa, including the one in the Democratic Republic of Congo (DRC), which evaluated the effectiveness of livestock, 'Pigs for peace (PFP)' intervention on economic, health and women empowerment outcomes and showed a reduction in experiencing and perpetration of IPV, although not statistically significant (354). A community mobilization intervention project 'SASA' (Start, Awareness, Support, and Action) in Uganda employed an RCT study design, assesses the potential of a community mobilization IPV prevention intervention to reduce the overall prevalence of IPV, new onset of abuse and continuation of prior abuse prevention by transforming community norms and behaviours that support violence, and gender inequality (355). Such intervention was able to reduce the overall prevalence of IPV, new onset of abuse (primary prevention) and continuation of prior abuse (secondary prevention) when evaluated after four years. However, another trial of community mobilization intervention in South Africa, recommended for resource-constrained settings as it requires additional financial, infrastructural, organizational, or political support to effectively engage community members and reduce IPV (356). Another study in South Africa indicated intervention combining microfinance and gender equality training able to reduce IPV (357)

However, encouraging trials with targeted interventions are skewed towards high-income countries, (USA). An interesting Nurse-led Domestic Violence home visit program shows promising results (358) with reduced rates of IPV, and improved feto-maternal outcomes (359). In general, evidences show screening during pregnancy increases the identification of women experiencing IPV in the healthcare settings (214, 360), but we have limited knowledge related to if screening reduces IPV, if any problems arise of screening, if it improves health, and referral to other support services, requiring future studies especially in the poor resource countries including Ethiopia.

Our findings highlight the need for an overall comprehensive health sector response, to avoid system-level barriers. By empowering the HCWs, incorporating IPV screening tools in the ANC chart/card and having formal referral linkages could be a prerequisite to improving the responses in the fight against IPV and its substantial impact on pregnancy outcomes. Based on our results, we propose some of the preliminary interventions aimed at reducing IPV in pregnancy as compiled and structured in Table 9 by the social-ecological levels. Suggestions could be: women's empowerment (in terms of economy and education), awareness-raising, training, and horizontally organized service centres to support survivors. This calls for networking among relevant stakeholders (361), including policymakers, authorities of health service institutions, and law-enforcing authorities. Additionally, stronger evidences resulted from rigorous research are required before adopting certain interventions on IPV in ANC clinics in low-income countries, along with the safety issues, socio-cultural, geographic and financial constraints.

Table 9. Proposed Interventions to eliminate IPV and IPV in pregnancy and its consequences, at different Social Ecologic Levels based on our findings

Social Ecologic factors and or /Gender power biases	Potential Interventions
<p>Level 1</p> <ul style="list-style-type: none"> • Experiencing and/or witnessing violence as a child, • Lack of knowledge on consequences of IPV in pregnancy • Biased attitude towards IPV • Having mental health or personality problems • Use of substance/s 	<ul style="list-style-type: none"> • Teach parents how to bring up their children in a non-violent, caring and respectful atmosphere • Promote attitudes, beliefs, and behaviours that prevent violence by providing training on how to resolve conflict around the table, life skills, social skills and healthy relationships • Target perpetrators and teach them about harmonious relationships and their benefits • Teach men and young boys at school to act against violence • Hold public events, and community dialogue on IPV and its consequences • Have media campaign against IPV, and equal value of men and women • Prevent, detect and treat mental health or personality problems • Limit substance outlets including alcohol, Khat, cigarette and avoid them around school /university premises • Promote norms that support the safety and dignity of women
<p>Level 2</p> <ul style="list-style-type: none"> • Household property controlled by a partner, • Difficult intra-spousal communication • Marital conflict • Women’s lack of decision making power 	<ul style="list-style-type: none"> • Promote family-focused prevention programs and strengthen parent-child communication, respect and fairness • Raise awareness on the benefits of violence-free relationships for women, men and families • Promote problem-solving skills and healthy relationships. • Empower women through education, employment and decision making capacity • Establish micro-financing programs for women • Increase women’s awareness of their rights • Encourage male involvement in ANC and teach them the impact of IPV on pregnancy
<p>Level 3</p> <ul style="list-style-type: none"> • Community stakeholders sharing patriarchal attitude and providing gender-biased responses to IPV in pregnancy • Legitimizing men’s violence • Woman feeling isolated 	<ul style="list-style-type: none"> • Organize and launch awareness-raising and advocacy campaigns against IPV • Improving the safety of the physical and social environment in the settings such as schools, workplaces, and neighbourhoods, (Ex, by creating safe places where people live, learn, work, and play) • Address conditions that give rise to violence in communities including, neighbourhood poverty, and residential isolation, instability, and high density of alcohol outlets.

<ul style="list-style-type: none"> • Woman having no social support • Presence of high un-employment • Stakeholders lack formal linkages 	<ul style="list-style-type: none"> • Encourage community engagement, social cohesion and stop tolerating VAW • Train HCWs how to screen and manage IPV victims at ANC • Provide survivors safety and lesson harms (for example, safe housing, restraining order, custody order...etc) • Launch Health Education campaigns, and community mobilization on IPV and IPV in pregnancy • Train community leaders, religious leaders, couples, local cultural and government leaders, and police officers on IPV consequences and preventions and create linkage among them
<p>Level 4</p> <ul style="list-style-type: none"> • Using violence as a means to settle interpersonal conflicts • Supportive attitudes of wife-beating • Regarding violence as an expression of masculinity • Presence of strict gender role differences • Societal norms and attitude accepting wife beating 	<ul style="list-style-type: none"> • Avoid social and cultural norms that support violence as an acceptable way to resolve conflicts • Persuade policymakers to design and strengthen policies that affect the structural determinants of health and including household financial security, education and employment • Train and strengthen legal system and judiciary in handling IPV victims • Challenge the cultural and social norms that support IPV, creating mobilization campaigns, and implementing a zero-tolerance policy. • Promote social norms that condemn violence and strict gender roles • Create evidence-informed interventions along with regular monitoring and evaluation to further improve services, programmes, and policies. • Insist the Ministry of health to integrate IPV screening into ANC services.

7. Conclusions

This thesis presents the results from a mixed-method study. It examines the contribution of complex ecologic factors to the occurrence of IPV in pregnancy, how IPV relates to a late entry into ANC (stratified by parity) and offers comprehensive perspectives from stakeholders and HCWs on IPV in pregnancy. The results add to the limited current knowledge, including the non-physical consequences of IPV in pregnancy, in Ethiopia and SSA.

In summary, the findings of the four papers included in this PhD thesis, present documentation for interventions and prevention strategies for the two health challenges in Ethiopia; utilization and timely uptake of ANC and reduction of IPV in pregnancy. Both requiring sustained evidence-informed health care system interventions that address behavioural and structural barriers comprehensively. The need for extended formal training and clear guidelines for HCWs to be able to screen, manage victims within their scope, and refer women for further support as well as formal linkages with other institutions

outside the health sector should be a critical area of attention. There is also an urgent need to advance gender-sensitive social structures and well organized multi-sectoral responses and community norms that condemn IPV.

8. Clinical implications

Complex ecological factors contribute to IPV in pregnancy, which restrains maternal health service utilization including timely ANC visit. ANC offers the best opportunity to identify women at risk for IPV, prevent related complications, and reduce the cost of IPV. In countries such as Ethiopia, it is important to recognize that a significant number of pregnant women who do not attend ANC may be at higher risk for IPV. Policymakers, community members, and HCWs, in particular, need to understand that pregnancy is a risk factor for increased abuse. HCWs should be aware of the existence of a history of abuse if women present multiple health complaints for no apparent reason. HCWs need training on how to ask about IPV in a culturally appropriate way, how to respond to any disclosure, and how to recognize the symptoms and potential consequences of IPV. They should also respond to the disclosure of IPV in pregnancy and manage its physical and psycho-social outcomes on women and children considering its effects. Encouraging male engagement and identifying and challenging dangerous behaviours such as alcohol or drug abuse, often associated with IPV, ANC may present opportunities as a previous or current violence exposures.

To ensure the well-being and safety of women experiencing IPV, organized referral pathways, identified support agencies are integrated with an environmentally relevant and verified screening program in the ANC system. In short, with greater emphasis on children and youth, efforts to effectively prevent IPV should focus on healthy relationships throughout life. IPV is the result of complex factors that suggest the importance of finding ways to incorporate different social and professional perspectives and their participation in addressing IPV and IPV in pregnancy.

The presented studies contribute to new knowledge in Ethiopia. Emphasizing that IPV in pregnancy is multi-factorial, influencing the time of entry into ANC, especially among multiparous women. This information could guide future interventions aimed at improving ANC service utilization and its returns. The current responses to IPV are surrounded by many socio-cultural, structural and economic aspects that erect barriers and prevent pregnant victims from obtaining help. Our studies suggest that prevention of IPV in pregnancy requires comprehensive, multi-sectoral collaboration between government and institutions at all sectoral levels.

9. Future Research

This is a unique study in the Ethiopian context. The utilization of translated, adapted, and internationally standardized data collection instruments increased the validity and reliability. Almost all studies done towards IPV in pregnancy in Ethiopia are cross-sectional studies indicating longitudinal studies are strongly needed. Utilizing the instruments developed in other settings in Ethiopia would enrich the data and facilitate policy decision of future inclusion of IPV screening across ANC settings. Translational research with context-relevant interventions of HCWs training manuals related to IPV screening and handlings are warranted in Ethiopia. The effectiveness of interventions evaluated against their impacts on women's safety and pregnancy outcomes is also an area of concern for future studies.

The contribution of mixed methods while enhancing the rigor of the study, would have helped us better address the multi-faceted nature of the issues under the study. Addressing community norms and

Intimate Partner Violence in Pregnancy in Ethiopia

attitudes related to IPV demands a comprehensive overarching strategy with multiple synergistic interventions. The eradication of IPV needs to be an overarching political agenda requiring systematic research identifying what the host of Ethiopian communities need. Religious leaders and other relevant stakeholders across society need to be included in the intervention. The policies implemented need to be embedded in all aspects of education and training. A challenging task, but various small-scale interventions will need to be undertaken to ensure community endorsement and participation.

References

1. Dorosh P, Schmidt E. The rural-urban transformation in Ethiopia. International Food Policy Research Institute (IFPRI); Addis Ababa, Ethiopia. 2010.
2. 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(5).
3. Aklilu H, Udo H, Almekinders C, Van der Zijpp A. How resource-poor households value and access poultry: Village poultry keeping in Tigray, Ethiopia. *Agricultural Systems*. 2008;96(1-3):175-83.
4. Erulkar A. Early marriage, marital relations and intimate partner violence in Ethiopia. *International perspectives on sexual and reproductive health*. 2013;39(1):6-13.
5. Gossaye Y DN, Berhane Y, et al. Women's Health and Life Events Study in Rural Ethiopia. *Ethiopian J of Health Dev*. 2003; Volume 17, Second Special issue. .
6. Agency. CS. Ethiopia Demographic and Health Survey. Addis Ababa, Ethiopia.; 2011.
7. Macro O. Central Statistical Agency: Ethiopia Demographic and Health Survey 2005. Calverton, MD: ORC Macro; 2006.
8. Geleta D, Birhanu Z, Kaufman M, Temesgen B. Gender norms and family planning decision-making among married men and women, rural Ethiopia: a qualitative study. *Science Journal of Public Health*. 2015;3(2):242-50.
9. Fantahun M, Berhane Y, Wall S, Byass P, Högberg U. Women's involvement in household decision-making and strengthening social capital—crucial factors for child survival in Ethiopia. *Acta paediatrica*. 2007;96(4):582-9.
10. Dito BB. Women's intrahousehold decision-making power and their health status: Evidence from rural Ethiopia. *Feminist Economics*. 2015;21(3):168-90.
11. Hausmann R, Tyson LDA, Zahidi S, editors. The global gender gap report 20122012: World Economic Forum Geneva.
12. Gebru SG, Demeke MA. The millennium development goals and the status of gender disparity in Ethiopia: achievements and challenges. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*. 2014;8(1):56-78.
13. Parsons J, Edmeades J, Kes A, Petroni S, Sexton M, Wodon Q. Economic impacts of child marriage: a review of the literature. *The Review of Faith & International Affairs*. 2015;13(3):12-22.
14. Walker J-A. Early marriage in Africa—trends, harmful effects and interventions. *African journal of reproductive health*. 2012;16(2):231-40.
15. Mulongo P, Hollins Martin C, McAndrew S. The psychological impact of female genital mutilation/cutting (FGM/C) on girls/women's mental health: a narrative literature review. *Journal of Reproductive and Infant Psychology*. 2014;32(5):469-85.
16. WHO. Violence against women: Intimate partner and sexual violence against women. Fact sheet N°239, 2014. Available from: www.who.int/mediacentre/factsheets/fs239/en/.
17. European institute of gender equality. Analysis of national definitions of Intimate Partner Violence report on the quality of the GBV data. 2016. Available from: [eige.europa.eu> files> database>gbv_natdefn_ipv](http://eige.europa.eu/files/database/gbv_natdefn_ipv).
18. 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;368(9543):1260-9.
19. Devries KM, Mak JY, Garcia-Moreno C, Petzold M, Child JC, Falder G, et al. The global prevalence of intimate partner violence against women. *Science*. 2013;340(6140):1527-8.
20. Gigliotti M, Schmidt-Traub G, Bastianoni S. The sustainable development goals. Editor-in-Chief: Brian Fath; 2019. p. 426-31.

Intimate Partner Violence in Pregnancy in Ethiopia

21. WHO. Understanding and addressing violence against women: Intimate partner violence. World Health Organization; 2012. Available from: https://www.who.int/reproductivehealth/topics/violence/vaw_series/en/.
22. WHO LSoHTM, South African Medical Research Council. . Global and regional prevalence estimates of intimate partner violence: WHO; 2013. Available from: www.who.int/iris/bitstream/10665/85239/1/9789241564625_eng.pdf
23. WHO. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence: World Health Organization; 2013.
24. Kwagala B, Wandera SO, Ndugga P, Kabagenyi A. Empowerment, partner's behaviours and intimate partner physical violence among married women in Uganda. *BMC public health*. 2013;13:1112.
25. Abeya SG, Afework MF, Yalew AW. Intimate partner violence against women in western Ethiopia: prevalence, patterns, and associated factors. *BMC public health*. 2011;11:913.
26. R Y. Violence Against Women in Ethiopia: The Case of ... Nov 25, 2014. Available from: <https://kweschn.wordpress.com/.../violence-against-women-in-ethiopia-th...>
27. Semahegn A, Belachew T, Abdulahi M. Domestic violence and its predictors among married women in reproductive age in Fagitalekoma Woreda, Awi zone, Amhara regional state, North Western Ethiopia. *Reproductive health*. 2013;10:63.
28. Deribe K, Beyene BK, Tolla A, Memiah P, Biadgilign S, Amberbir A. Magnitude and correlates of intimate partner violence against women and its outcome in Southwest Ethiopia. *PloS one*. 2012;7(4):e36189.
29. Abeya SG, Afework MF, 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. *Reproductive health*. 2012;9:14.
30. Dibaba Y. Prevalence and correlates of intimate partner physical violence against women in Kofale District, Ethiopia. *Tropical doctor*. 2008;38(1):52-4.
31. Ashenafi M. Advocacy for legal reform for safe abortion. *African journal of reproductive health*. 2004:79-84.
32. Amin A, Chandra-Mouli V. Empowering adolescent girls: developing egalitarian gender norms and relations to end violence. *Reproductive health*. 2014;11(1):75.
33. García-Moreno C, Stockl H. Protection of sexual and reproductive health rights: addressing violence against women. *Health and Human Rights in a Changing World*. 2013:780-1.
34. Maoulidi M, Salim A. Gender Needs Assessment for Kisumu City, Kenya. 2011. Available from: http://mci.ei.columbia.edu/sitefiles/file/Kisumu_Gender_Needs_Assessment_VF.pdf.
35. Fite MD. The Ethiopia's Legal Framework on Domestic Violence against Women: a Critical Perspective. *International journal of gender and women's studies*. 2014;2(1):49-60.
36. Ogato GS. The quest for gender equality and womens empowerment in least developed countries: Policy and strategy implications for achieving millennium development goals in Ethiopia. *International Journal of Sociology and Anthropology*. 2013;5(9):358-72.
37. UN. Preliminary Gender Profile of Ethiopia. Addis Ababa. 2014. Available from: <https://africa.unwomen.org/en/digital-library/publications/2015/12/preliminary-gender-profile-of-ethiopia>.
38. Nation U. The Federal Democratic Republic of Ethiopia, National report on the implementation of the Beijing declaration and platform for action. 2015. Availble from: https://www.uneca.org/sites/default/files/uploaded-documents/Beijing20/NationalReviews/natl_review_ethiopia_-_eng.pdf.
39. Marshall EP, Lyytikainen M, Jones N, Montes A, Pereznieto P, Tefera B. Child marriage in Ethiopia. London: Overseas Development Institute (ODI); 2016.

40. Fite MD. International Journal of Gender and Women's Studies. Published by American Research Institute for Policy Development. 2014;Vol. 2, No. 1, pp. 49-60.
41. Wright CV, Johnson DM. Encouraging legal help seeking for victims of intimate partner violence: The therapeutic effects of the civil protection order. *Journal of traumatic stress*. 2012;25(6):675-81.
42. LS M. Experiences of Women Survivors of Gender-Based Violence with Survivor-Centred approach, A case of Association for Women's Sanctuary And Development (AWSAD) Ethiopia: University of Nairobi. 2017.
43. U A. AWSAD U. Association for Women's Sanctuary and Development organizational profile. Available at: awsad.org/wp-content/uploads/2018/01/AWSAD_Organizational_Profile2018.pdf. 2018 [
44. Women U. Shelters for women and girls who are survivors of violence in Ethiopia. 2016. Available from: www.peacewomen.org/sites/default/.../shelters-for-survivors-of-violence-ethiopia.pdf.
45. Kedir A, Admasachew L. Violence against women in Ethiopia. *Gender, Place & Culture*. 2010;17(4):437-52.
46. Yonas M, Akers AY, Burke JG, Chang JC, Thomas AL, O'Campo P. Perceptions of prominent neighborhood individuals regarding neighborhood factors and intimate partner violence. *Journal of Urban Health*. 2011;88(2):214-24.
47. Ragusa AT. Rural Australian women's legal help seeking for intimate partner violence: Women intimate partner violence victim survivors' perceptions of criminal justice support services. *Journal of interpersonal violence*. 2013;28(4):685-717.
48. Rizo CF, Macy RJ. Help seeking and barriers of Hispanic partner violence survivors: A systematic review of the literature. *Aggression and Violent Behavior*. 2011;16(3):250-64.
49. WHO. Gender, women and health; Gender Based Violence. 2011. Available from: <http://www.who.int/gender/violence/gbv/en/>.
50. Pears KC, Capaldi DM. Intergenerational transmission of abuse: A two-generational prospective study of an at-risk sample. *Child abuse & neglect*. 2001;25(11):1439-61.
51. Moore AM, Frohwirth L, Miller E. Male reproductive control of women who have experienced intimate partner violence in the United States. *Social science & medicine (1982)*. 2010;70(11):1737-44.
52. Matheson FI, Daoud N, Hamilton-Wright S, Borenstein H, Pedersen C, O'Campo P. Where did she go? The transformation of self-esteem, self-identity, and mental well-being among women who have experienced intimate partner violence. *Women's health issues*. 2015;25(5):561-9.
53. Coker AL, Smith PH, Bethea L, King MR, McKeown RE. Physical health consequences of physical and psychological intimate partner violence. *Archives of family medicine*. 2000;9(5):451.
54. Heise L, Ellsberg M, Gottmoeller M. A global overview of gender-based violence. *International Journal of Gynecology & Obstetrics*. 2002;78:S5-S14.
55. Sarkar N. The impact of intimate partner violence on women's reproductive health and pregnancy outcome. *Journal of Obstetrics & Gynecology*. 2008;28(3):266-71.
56. Rodriguez MA, Heilemann MV, Fielder E, Ang A, Nevarez F, Mangione CM. Intimate partner violence, depression, and PTSD among pregnant Latina women. *The Annals of Family Medicine*. 2008;6(1):44-52.
57. VicHealth. Preventing VAW in Australia: Addressing the social and economic determinants of mental and physical health. Victorian health promotion foundation. 2011.
58. El-Serag R, Thurston RC. Matters of the heart and mind: interpersonal violence and cardiovascular disease in women. *Am Heart Assoc*; 2020.
59. Bosch J, Weaver TL, Arnold LD, Clark EM. The impact of intimate partner violence on women's physical health: Findings from the Missouri behavioral risk factor surveillance system. *Journal of interpersonal violence*. 2017;32(22):3402-19.
60. WHO. World Report on Violence and Health. WHO, Geneva,2002. Available from: https://www.who.int/world_report/summary_en.

61. Richards K. Children's exposure to domestic violence in Australia. *Trends and issues in crime and criminal justice*. 2011;419:1-7.
62. Suglia SF, Sapra KJ, Koenen KC. Violence and cardiovascular health: a systematic review. *American journal of preventive medicine*. 2015;48(2):205-12.
63. Monnat SM, Chandler RF. Long-term physical health consequences of adverse childhood experiences. *The Sociological Quarterly*. 2015;56(4):723-52.
64. Brown DW, Anda RF, Felitti VJ, Edwards VJ, Malarcher AM, Croft JB, et al. Adverse childhood experiences are associated with the risk of lung cancer: a prospective cohort study. *BMC public health*. 2010;10(1):1-12.
65. Daoud N, Urquia ML, O'Campo P, Heaman M, Janssen PA, Smylie J, et al. Prevalence of abuse and violence before, during, and after pregnancy in a national sample of Canadian women. *American journal of public health*. 2012;102(10):1893-901.
66. Nasir K, Hyder AA. Violence against pregnant women in developing countries. *The European Journal of Public Health*. 2003;13(2):105-7.
67. Campbell J, Garcia-Moreno C, Sharps P. Abuse during pregnancy in industrialized and developing countries. *Violence against women*. 2004;10(7):770-89.
68. Román-Gálvez RM, Martín-Peláez S, Martínez-Galiano JM, Khan KS, Bueno-Cavanillas A. Prevalence of intimate partner violence in pregnancy: an umbrella review. *International journal of environmental research and public health*. 2021;18(2):707.
69. Shamu S, Abrahams N, Temmerman M, Musekiwa A, Zarowsky C. A systematic review of African studies on intimate partner violence against pregnant women: prevalence and risk factors. *PloS one*. 2011;6(3):e17591.
70. Devries KM, Kishor S, Johnson H, Stöckl H, Bacchus LJ, Garcia-Moreno C, et al. Intimate partner violence during pregnancy: analysis of prevalence data from 19 countries. *Reproductive health matters*. 2010;18(36):158-70.
71. Jasinski JL. . Trauma V, and Abuse. *Pregnancy and domestic violence: a review of the literature*. 2004, 5(1):47-64.
72. WHO. Intimate partner violence during pregnancy: information sheet. World Health Organization, 2011. Available from: <https://apps.who.int/iris/handle/10665/70764>.
73. Carroli G, Cuesta C, Abalos E, Gulmezoglu AM. Epidemiology of postpartum haemorrhage: a systematic review. *Best practice & research Clinical obstetrics & gynaecology*. 2008;22(6):999-1012.
74. Abalos E, Cuesta C, Grosso AL, Chou D, Say L. Global and regional estimates of preeclampsia and eclampsia: a systematic review. *European journal of obstetrics, gynecology, and reproductive biology*. 2013;170(1):1-7.
75. AbouZahr C. Global burden of maternal death and disability. *British medical bulletin*. 2003;67(1):1-11.
76. Mezey GC, Bewley S. Domestic violence and pregnancy. *BJOG: An International Journal of Obstetrics & Gynaecology*. 1997;104(5):528-31.
77. Groves AK, Kagee A, Maman S, Moodley D, Rouse P. Associations between intimate partner violence and emotional distress among pregnant women in Durban, South Africa. *Journal of interpersonal violence*. 2012;27(7):1341-56.
78. Makayoto LA, Omolo J, Kamweya AM, Harder VS, Mutai J. Prevalence and associated factors of intimate partner violence among pregnant women attending Kisumu District Hospital, Kenya. *Maternal and child health journal*. 2013;17(3):441-7.
79. Shamu S, Abrahams N, Zarowsky C, Shefer T, Temmerman M. Intimate partner violence during pregnancy in Zimbabwe: a cross-sectional study of prevalence, predictors and associations with HIV. *Tropical Medicine & International Health*. 2013;18(6):696-711.

80. Mahenge B, Likindikoki S, Stöckl H, Mbwambo J. Intimate partner violence during pregnancy and associated mental health symptoms among pregnant women in Tanzania: a cross-sectional study. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2013;120(8):940-7.
81. Demelash H, Nigatu D, Gashaw K. A Case-Control Study on Intimate Partner Violence during Pregnancy and Low Birth Weight, Southeast Ethiopia. *Obstetrics and gynecology international*. 2015;2015:394875.
82. Yimer T, Gobena T, Egata G, Mellie H. Magnitude of domestic violence and associated factors among pregnant women in Hulet Ejju Enessie District, Northwest Ethiopia. *Advances in public health*. 2014;2014.
83. Laelago T, Belachew T, Tamrat M. Prevalence and Associated Factors of Intimate Partner Violence during Pregnancy among Recently Delivered Women in Public Health Facilities of Hossana Town, Hadiya Zone, Southern Ethiopia. *Open Access Library Journal*. 2014;1(07):1.
84. Abdurashid R. The prevalence of domestic violence in pregnant women attending antenatal Care at the Selected Health Facilities in Addis Ababa: Addis Ababa University, Ethiopia. 2013. Available from: <http://localhost:80/xmlui/handle/123456789/2331>.
85. Hoque ME, Hoque M, Kader SB. Prevalence and experience of domestic violence among rural pregnant women in KwaZulu-Natal, South Africa. *Southern African Journal of Epidemiology and Infection*. 2009;24(4):34-7.
86. Aizer A. Poverty, violence, and health the impact of domestic violence during pregnancy on newborn health. *Journal of Human resources*. 2011;46(3):518-38.
87. Kaye D, Mirembe F, Bantebya G. Risk factors, nature and severity of domestic violence among women attending antenatal clinic in Mulago Hospital, Kampala, Uganda. *Cent Afr J Med*. 2002;48(5-6):64-8.
88. Melchiorre MG, Chiatti C, Lamura G, Torres-Gonzales F, Stankunas M, Lindert J, et al. Social support, socio-economic status, health and abuse among older people in seven European countries. *PLoS one*. 2013;8(1).
89. Bacchus L, Mezey G, Bewley S. A qualitative exploration of the nature of domestic violence in pregnancy. *Violence against women*. 2006;12(6):588-604.
90. Borghi J, Sabina N, Blum LS, Hoque ME, Ronsmans C. Household costs of healthcare during pregnancy, delivery, and the postpartum period: a case study from Matlab, Bangladesh. *Journal of health, population, and nutrition*. 2006;24(4):446.
91. Brownridge DA, Taillieu TL, Tyler KA, Tiwari A, Chan KL, Santos SC. Pregnancy and intimate partner violence: risk factors, severity, and health effects. *Violence against women*. 2011;17(7):858-81.
92. Silverman JG, Gupta J, 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 : an international journal of obstetrics and gynaecology*. 2007;114(10):1246-52.
93. Bailey BA. Partner violence during pregnancy: prevalence, effects, screening, and management. *International journal of women's health*. 2010;2:183.
94. Pool MS, Otupiri E, Owusu-Dabo E, De Jonge A, Agyemang C. Physical violence during pregnancy and pregnancy outcomes in Ghana. *BMC pregnancy and childbirth*. 2014;14(1):71.
95. Leone JM, Lane SD, Koumans EH, DeMott K, Wojtowycz MA, Jensen J, et al. Effects of intimate partner violence on pregnancy trauma and placental abruption. *Journal of women's health (2002)*. 2010;19(8):1501-9.
96. DY. PMMJ. Intimate partner violence in pregnancy. *Patil Univ [serial online]* 2014 [cited 2015 Apr 6];7:480-1. 2014. Available from: <http://www.mjdrdypu.org/text.asp?2014/7/4/480/135275>.
97. Janssen PA, Holt VL, Sugg NK, Emanuel I, Critchlow CM, Henderson AD. Intimate partner violence and adverse pregnancy outcomes: A population-based study. *American journal of obstetrics and gynecology*. 2003;188(5):1341-7.

98. Alhusen JL, Ray E, Sharps P, Bullock L. Intimate partner violence during pregnancy: maternal and neonatal outcomes. *Journal of women's health*. 2015;24(1):100-6.
99. WHO. Intimate partner violence during pregnancy. WHO fact sheet, 2011. Available from: http://www.who.int/reproductivehealth/publications/violence/rhr_11_35/en/.
100. Alsaker K, Morken T, Baste V, CAMPOS-SERNA J, Moen BE. Sexual assault and other types of violence in intimate partner relationships. *Acta obstetrica et gynecologica Scandinavica*. 2012;91(3):301-7.
101. Hassan M, Kashanian M, Hassan M, Roohi M, Yousefi H. Maternal outcomes of intimate partner violence during pregnancy: study in Iran. *Public health*. 2014;128(5):410-5.
102. Sarkar N. The cause and consequence of domestic violence on pregnant women in India. *Journal of Obstetrics and Gynaecology*. 2013;33(3):250-3.
103. Okenwa L, Lawoko S, Jansson B. Contraception, reproductive health and pregnancy outcomes among women exposed to intimate partner violence in Nigeria. *The European Journal of Contraception & Reproductive Health Care*. 2011;16(1):18-25.
104. Kaye DK, Mirembe FM, Bantebya G, Johansson A, Ekstrom AM. Domestic violence during pregnancy and risk of low birthweight and maternal complications: a prospective cohort study at Mulago Hospital, Uganda. *Tropical medicine & international health : TM & IH*. 2006;11(10):1576-84.
105. Khodakarami N, Naji H, Dashti MG, Yazdgerdi M. Woman abuse and pregnancy outcome among women in Khoram Abad, Islamic Republic of Iran. *Eastern Mediterranean health journal = La revue de sante de la Mediterranee orientale = al-Majallah al-sihhiyah li-sharq al-mutawassit*. 2009;15(3):622-8.
106. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller A-B, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. *The Lancet Global Health*. 2014;2(6):e323-e33.
107. WHEC. Practice Bulletin and Clinical Management Guidelines for healthcare providers. Educational grant provided by Women's Health and Education Center (WHEC). 2009. Available: from: www.womenshealthsection.com.
108. Shadigian EM, Bauer ST. Pregnancy-associated death: a qualitative systematic review of homicide and suicide. *Obstetrical & gynecological survey*. 2005;60(3):183-90.
109. Campbell JC. Health consequences of intimate partner violence. *The lancet*. 2002;359(9314):1331-6.
110. Bailey BA, Daugherty RA. Intimate partner violence during pregnancy: incidence and associated health behaviors in a rural population. *Maternal and child health journal*. 2007;11(5):495.
111. Alhusen JL, Frohman N, Purcell G. Intimate partner violence and suicidal ideation in pregnant women. *Archives of women's mental health*. 2015;18(4):573-8.
112. Metheny N, Stephenson R. Intimate partner violence and uptake of antenatal care: A scoping review of low-and middle-income country studies. *International perspectives on sexual and reproductive health*. 2017;43(4):163-71.
113. Gold KJ, Singh V, Marcus SM, Palladino CL. Mental health, substance use and intimate partner problems among pregnant and postpartum suicide victims in the National Violent Death Reporting System. *General hospital psychiatry*. 2012;34(2):139-45.
114. 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. *Clinical practice and epidemiology in mental health*. 2009;5(1):8.
115. Staneva A, Bogossian F, Pritchard M, Wittkowski A. The effects of maternal depression, anxiety, and perceived stress during pregnancy on preterm birth: A systematic review. *Women and Birth*. 2015;28(3):179-93.
116. Glover V. Maternal depression, anxiety and stress during pregnancy and child outcome; what needs to be done. *Best practice & research Clinical obstetrics & gynaecology*. 2014;28(1):25-35.
117. Nur N. Association between domestic violence and miscarriage: a population-based cross-sectional study among women of childbearing ages, Sivas, Turkey. *Women & health*. 2014;54(5):425-38.

118. Han A, Stewart DE. Maternal and fetal outcomes of intimate partner violence associated with pregnancy in the Latin American and Caribbean region. *International Journal of Gynecology & Obstetrics*. 2014;124(1):6-11.
119. Sharps PW, Laughon K, Giangrande SK. Intimate partner violence and the childbearing year: maternal and infant health consequences. *Trauma, Violence, & Abuse*. 2007;8(2):105-16.
120. Yost NP, Bloom SL, McIntire DD, Leveno KJ. A prospective observational study of domestic violence during pregnancy. *Obstetrics & gynecology*. 2005;106(1):61-5.
121. Boy A, Salihu HM. Intimate partner violence and birth outcomes: a systematic review. *International journal of fertility and women's medicine*. 2004;49(4):159-64.
122. Murphy CC, Schei B, Myhr TL, Du Mont J. Abuse: a risk factor for low birth weight? A systematic review and meta-analysis. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*. 2001;164(11):1567-72.
123. Shah PS, Shah J. Maternal exposure to domestic violence and pregnancy and birth outcomes: a systematic review and meta-analyses. *Journal of women's health*. 2010;19(11):2017-31.
124. Alhusen JL, Bullock L, Sharps P, Schminkey D, Comstock E, Campbell J. Intimate partner violence during pregnancy and adverse neonatal outcomes in low-income women. *Journal of women's health*. 2014;23(11):920-6.
125. Grigoriadis S, VonderPorten EH, Mamisashvili L, Tomlinson G, Dennis C-L, Koren G, et al. The impact of maternal depression during pregnancy on perinatal outcomes: a systematic review and meta-analysis. *The Journal of clinical psychiatry*. 2013;74(4):321-41.
126. Subramanian S, Katz KS, Rodan M, Gantz MG, El-Khorazaty NM, Johnson A, et al. An integrated randomized intervention to reduce behavioral and psychosocial risks: pregnancy and neonatal outcomes. *Maternal and child health journal*. 2012;16(3):545-54.
127. Wadhwa PD, Sandman CA, Porto M, Dunkel-Schetter C, Garite TJ. The association between prenatal stress and infant birth weight and gestational age at birth: a prospective investigation. *American journal of obstetrics and gynecology*. 1993;169(4):858-65.
128. Islam SMS, Ferrari U, Seissler J, Niessen L, Lechner A. Association between depression and diabetes amongst adults in Bangladesh: a hospital based case-control study. *Journal of global health*. 2015;5(2).
129. Thombre MK, Talge NM, Holzman C. Association between pre-pregnancy depression/anxiety symptoms and hypertensive disorders of pregnancy. *Journal of Women's Health*. 2015;24(3):228-36.
130. Gallo LC, Roesch SC, Fortmann AL, Carnethon MR, Penedo FJ, Perreira K, et al. Associations of chronic stress burden, perceived stress, and traumatic stress with cardiovascular disease prevalence and risk factors in the HCHS/SOL Sociocultural Ancillary Study. *Psychosomatic medicine*. 2014;76(6):468.
131. Ojanuga DN, Gilbert C. Women's access to health care in developing countries. *Social science & medicine*. 1992;35(4):613-7.
132. Maxwell L, Devries K, Zions D, Alhusen JL, 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.
133. Hatcher AM, Smout EM, Turan JM, Christofides N, Stoeckl H. Intimate partner violence and engagement in HIV care and treatment among women: a systematic review and meta-analysis. *AIDS (London, England)*. 2015;29(16):2183-94.
134. Ghose B, Yaya S. Experience of intimate partner violence and help-seeking behaviour among women in Uganda. *Psych*. 2019;1(1):182-92.
135. Tura H, Licoze A. Women's experience of intimate partner violence and uptake of Antenatal Care in Sofala, Mozambique. *PloS one*. 2019;14(5):e0217407.

Intimate Partner Violence in Pregnancy in Ethiopia

136. Rahman M, Nakamura K, Seino K, Kizuki M. Intimate partner violence and use of reproductive health services among married women: evidence from a national Bangladeshi sample. *BMC public health*. 2012;12(1):1-12.
137. Hegarty KL, O'Doherty LJ, Chondros P, Valpied J, Taft AJ, Astbury J, et al. Effect of type and severity of intimate partner violence on women's health and service use: findings from a primary care trial of women afraid of their partners. *Journal of interpersonal violence*. 2013;28(2):273-94.
138. Rivara FP, Anderson ML, Fishman P, Bonomi AE, Reid RJ, Carrell D, et al. Healthcare utilization and costs for women with a history of intimate partner violence. *American journal of preventive medicine*. 2007;32(2):89-96.
139. Montero I, Ruiz-Pérez I, Martín-Baena D, Talavera M, Escribà-Agüir V, Vives-Cases C. Violence against women from different relationship contexts and health care utilization in Spain. *Women's health issues*. 2011;21(5):400-6.
140. Mai V, Phyu WE. Intimate partner violence and utilization of reproductive and maternal health services in Cambodia. *Journal of Health Research*. 2019.
141. Ononokpono DN, Azfredrick EC. Intimate partner violence and the utilization of maternal health care services in Nigeria. *Health care for women international*. 2014;35(7-9):973-89.
142. Cha S, Masho SW. Intimate partner violence and utilization of prenatal care in the United States. *Journal of interpersonal violence*. 2014;29(5):911-27.
143. Carroli G, Rooney C, Villar J. How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of the evidence. *Paediatric and perinatal epidemiology*. 2001;15:1-42.
144. WHO. World Health Organization recommendations on antenatal care for a positive pregnancy experience. Available from: 2016. Available from: http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/anc-positive-pregnancy-experience/en/.
145. Chingle MP, Jonah M, Zoakah A. Antenatal Care and Pregnancy Outcomes among Mothers Who Delivered in a Rural Hospital in Nigeria. *International Journal of Innovative Research and Development*. 2017;6(3).
146. Deosthali-Bhate P, Rege, S., Pal, P. Nandi, S., Bhatla, N. & Kashyap, A. Role of the Health Sector in Addressing Intimate Partner Violence in India: A Synthesis Report. New Delhi: International Center for Research on Women.; 2018.
147. Organization WH. Global plan of action to strengthen the role of the health system within a national multisectoral response to address interpersonal violence, in particular against women and girls, and against children. 2016.
148. Rees K, Zweigenthal V, Joyner K. Health sector responses to intimate partner violence: A literature review. *African journal of primary health care & family medicine*. 2014;6(1):1-8.
149. O'Campo P, Kirst M, Tsamis C, Chambers C, Ahmad F. Implementing successful intimate partner violence screening programs in health care settings: evidence generated from a realist-informed systematic review. *Social science & medicine*. 2011;72(6):855-66.
150. Colombini M, Mayhew S, Watts C. Health-sector responses to intimate partner violence in low- and middle-income settings: a review of current models, challenges and opportunities. *Bulletin of the World Health Organization*. 2008;86:635-42.
151. Durant T, Gilbert BC, Saltzman LE, Johnson CH, Group PW. Opportunities for intervention: discussing physical abuse during prenatal care visits. *American journal of preventive medicine*. 2000;19(4):238-44.
152. Ramachandran DV, Covarrubias L, Watson C, Decker MR. How you screen is as important as whether you screen: a qualitative analysis of violence screening practices in reproductive health clinics. *Journal of community health*. 2013;38(5):856-63.
153. Organization WH. Intimate partner violence during pregnancy: Information sheet. Geneva: World Health Organization; 2011.

154. WHO. Responding to intimate partner violence and sexual violence against women: WHO clinical and policy guidelines: World Health Organization; 2013.
155. García-Moreno C, Zimmerman C, Morris-Gehring A, Heise L, Amin A, Abrahams N, et al. Addressing violence against women: a call to action. *The Lancet*. 2015;385(9978):1685-95.
156. Garcia-Moreno C, Amin A. The sustainable development goals, violence and women's and children's health. *Bulletin of the World Health Organization*. 2016;94(5):396.
157. García-Moreno C, Hegarty K, d'Oliveira AFL, Koziol-McLain J, Colombini M, Feder G. The health-systems response to violence against women. *The Lancet*. 2015;385(9977):1567-79.
158. Henriksen L, Garnweidner-Holme L, Thorsteinsen KK, Lukasse M. 'It is a difficult topic'—a qualitative study of midwives experiences with routine antenatal enquiry for intimate partner violence. *BMC pregnancy and childbirth*. 2017;17(1):165.
159. O'Reilly R, Peters K. Opportunistic domestic violence screening for pregnant and post-partum women by community based health care providers. *BMC women's health*. 2018;18(1):128.
160. Siemieniuk RA, Krentz HB, Gish JA, Gill MJ. Domestic violence screening: prevalence and outcomes in a Canadian HIV population. *AIDS patient care and STDs*. 2010;24(12):763-70.
161. Olds DL, Henderson Jr CR, Phelps C, Kitzman H, Hanks C. Effect of prenatal and infancy nurse home visitation on government spending. *Medical care*. 1993;31(2):155-74.
162. Kiely M, El-Mohandes AA, El-Khorazaty MN, Gantz MG. An integrated intervention to reduce intimate partner violence in pregnancy: a randomized trial. *Obstetrics and gynecology*. 2010;115(2 Pt 1):273.
163. Parker B, McFarlane J, Soeken K, Silva C, Reel S. Testing an intervention to prevent further abuse to pregnant women. *Research in nursing & health*. 1999;22(1):59-66.
164. Regassa T, Agero G. Factors Affecting Prenatal Care Utilization in East Wollega Zone, Oromia Regional State, Ethiopia. *Science, Technology and Arts Research Journal*. 2014;3(2):148-54.
165. Fekadu M, Regassa N. Skilled delivery care service utilization in Ethiopia: analysis of rural-urban differentials based on national demographic and health survey (DHS) data. *African health sciences*. 2014;14(4):974-84.
166. Gebremeskel F, Dibaba Y, Admassu B. Timing of first antenatal care attendance and associated factors among pregnant women in Arba Minch town and Arba Minch district, Gamo Gofa zone, South Ethiopia. *Journal of environmental and public health*. 2015;2015.
167. Belayneh T, Adefris M, Andargie G. Previous early antenatal service utilization improves timely booking: cross-sectional study at university of Gondar hospital, northwest Ethiopia. *Journal of pregnancy*. 2014;2014.
168. Zegeye AM, Bitew BD, Koye DN. Prevalence and determinants of early antenatal care visit among pregnant women attending antenatal care in Debre Berhan Health Institutions, Central Ethiopia. *African journal of reproductive health*. 2013;17(4).
169. Abosse Z, Woldie M, Ololo S. Factors influencing antenatal care service utilization in hadiya zone. *Ethiopian journal of health sciences*. 2010;20(2).
170. Tessema GA, Laurence CO, Melaku YA, Misganaw A, Woldie SA, Hiruye A, et al. Trends and causes of maternal mortality in Ethiopia during 1990–2013: findings from the Global Burden of Diseases study 2013. *BMC public health*. 2017;17(1):160.
171. Central Statistical Agency (CSA) E. Ethiopia Demographic and Health Survey 2016: Key Indicators Report. Addis Ababa, Ethiopia, and Rockville, Maryland, USA. CSA and ICF. . 2016.
172. Berhan Y, Berhan A. Review of Maternal Mortality in Ethiopia: A story of the past 30 years. *Ethiopian journal of health sciences*. 2014;24:3-14.
173. Assefa Y, Van Damme W, Williams OD, Hill PS. Successes and challenges of the millennium development goals in Ethiopia: lessons for the sustainable development goals. *BMJ global health*. 2017;2(2):e000318.

174. Rahman M, Nakamura K, Seino K, Kizuki M. Intimate partner violence and use of reproductive health services among married women: evidence from a national Bangladeshi sample. *BMC public health*. 2012;12(1):913.
175. Koski AD, Stephenson R, Koenig MR. Physical violence by partner during pregnancy and use of prenatal care in rural India. *Journal of health, population, and nutrition*. 2011;29(3):245.
176. Taggart L, Mattson S. Delay in prenatal care as a result of battering in pregnancy: Cross-cultural implications. *Health care for women international*. 1996;17(1):25-34.
177. Belay S, Astatkie A, Emmelin M, Hinderaker SG. Intimate partner violence and maternal depression during pregnancy: A community-based cross-sectional study in Ethiopia. *PloS one*. 2019;14(7):e0220003.
178. Islam MJ, Broidy L, Baird K, Mazerolle P. Intimate partner violence around the time of pregnancy and postpartum depression: The experience of women of Bangladesh. *PloS one*. 2017;12(5):e0176211.
179. Sanchez SE, Islam S, Zhong Q-Y, Gelaye B, Williams MA. Intimate partner violence is associated with stress-related sleep disturbance and poor sleep quality during early pregnancy. *PloS one*. 2016;11(3):e0152199.
180. Chambliss LR. Intimate partner violence and its implication for pregnancy. *Clinical obstetrics and gynecology*. 2008;51(2):385-97.
181. Chandler D. Late entry into prenatal care in a rural setting. *Journal of midwifery & women's health*. 2002;47(1):28-34.
182. Martin SL, Beaumont JL, Kupper LL. Substance use before and during pregnancy: links to intimate partner violence. *The American journal of drug and alcohol abuse*. 2003;29(3):599-617.
183. Roberts SC, Pies C. Complex calculations: how drug use during pregnancy becomes a barrier to prenatal care. *Maternal and child health journal*. 2011;15(3):333-41.
184. Tekelab T, Berhanu B. Factors Associated with Late Initiation of Antenatal Care among Pregnant Women Attending Antenatal Clinic at Public Health Centers in Kembata Tembaro Zone, Southern Ethiopia. *Science, Technology and Arts Research Journal*. 2014;3(1):108-15.
185. Lerebo W, Kidanu A, Tsadik M. Magnitude and Associated Factors of Late Booking for Antenatal Care in Public Health Centers of Adigrat Town, Tigray, Ethiopia. *Clinics Mother Child Health*. 2015;12(171):2.
186. Darling N. Ecological systems theory: The person in the center of the circles. *Research in human development*. 2007;4(3-4):203-17.
187. Heise LL. Violence against women an integrated, ecological framework. *Violence against women*. 1998;4(3):262-90.
188. WHO. Researching violence against women: practical guidelines for researchers and activists World Health organization. 2005. Available from: <https://apps.who.int/iris/handle/10665/42966>.
189. Terry MS. Applying the social ecological model to violence against women with disabilities. 2014.
190. Carlson BE. Causes and maintenance of domestic violence: An ecological analysis. *The Social Service Review*. 1984:569-87.
191. WHO. Primary prevention of intimate-partner violence and sexual violence: Background paper for WHO, 2007. Available from: <https://vawnet.org/material/primary-prevention-intimate-partner-violence-and-sexual-violence-background-paper-who>.
192. Glanz, K., Rimer, B. K., & Viswanath, K. *Theory, research, and practice* (4th Ed.). San Francisco, CA: Wiley/Jossey-Bass. 2015.
193. Jewkes R. Intimate partner violence: causes and prevention. *The lancet*. 2002;359(9315):1423-9.
194. Berhan Y, Berhan A. Antenatal care as a means of increasing birth in the health facility and reducing maternal mortality: a systematic review. *Ethiopian journal of health sciences*. 2014;24:93-104.
195. Organization WH. Making pregnancy safer: the critical role of the skilled attendant: a joint statement by WHO, ICM and FIGO: World Health Organization; 2004.

196. Mengistu TA, Tafere TE. Effect of antenatal care on institutional delivery in developing countries: a systematic review. *JBI Database of Systematic Reviews and Implementation Reports*. 2011;9(35):1447-70.
197. Ghulmiyyah L, Sibai B, editors. *Maternal mortality from preeclampsia/eclampsia. Seminars in perinatology*; 2012: Elsevier.
198. Tangcharoensathien V, Mills A, Palu T. Accelerating health equity: the key role of universal health coverage in the Sustainable Development Goals. *BMC medicine*. 2015;13(1):101.
199. Waltermaurer E. Public Justification of Intimate Partner Violence A Review of the Literature. *Trauma, Violence, & Abuse*. 2012;13(3):167-75.
200. Flood M, Pease B. Factors influencing attitudes to violence against women. *Trauma, Violence, & Abuse*. 2009;10(2):125-42.
201. Gracia E, Herrero J. Acceptability of domestic violence against women in the European Union: A multilevel analysis. *Journal of epidemiology and community health*. 2006;60(2):123-9.
202. Odero M, Hatcher AM, Bryant C, Onono M, Romito P, Bukusi EA, et al. Responses to and resources for intimate partner violence: qualitative findings from women, men, and service providers in rural Kenya. *Journal of interpersonal violence*. 2014;29(5):783-805.
203. Ahmad F, Driver N, McNally MJ, Stewart DE. "Why doesn't she seek help for partner abuse?" An exploratory study with South Asian immigrant women. *Social science & medicine*. 2009;69(4):613-22.
204. The Ethiopian Public Health Institute. *Key Indicators, Mini Demographic and Health Survey*; Addis Ababa. 2019.
205. Sofaer S. Qualitative methods: what are they and why use them? *Health services research*. 1999;34(5 Pt 2):1101.
206. Curry LA, Nembhard IM, Bradley EH. Qualitative and mixed methods provide unique contributions to outcomes research. *Circulation*. 2009;119(10):1442-52.
207. Salehi K, Golafshani N. Commentary: Using mixed methods in research studies: An opportunity with its challenges. *International journal of multiple research approaches*. 2010;4(3):186-91.
208. Foss C, Ellefsen B. The value of combining qualitative and quantitative approaches in nursing research by means of method triangulation. *Journal of advanced nursing*. 2002;40(2):242-8.
209. Day C, Sammons P, Gu Q. Combining qualitative and quantitative methodologies in research on teachers' lives, work, and effectiveness: From integration to synergy. *Educational researcher*. 2008;37(6):330-42.
210. MOH E. Federal Democratic Republic of Ethiopia Ministry of Health Health Sector Development Program IV October 2010 Contents. October 2010. 2014.
211. Federal Ministry of Health. *Ethiopian Emergency Obstetric and Newborn Care (EmONC) Assessment*. Addis Ababa, Ethiopia. 2016. Available from: <https://www.ephi.gov.et/images/pictures/download2010/FINAL-EmONC-Final-Report-Oct25-2017>.
212. WHO. *World Health Organization recommendations on antenatal care for a positive pregnancy experience*: World Health Organization, 2016. Available from: https://www.who.int/reproductivehealth/publications/maternal_perinatal_health/anc-positive-pregnancy-experience/en/.
213. Villar J, Bergsjö P. WHO antenatal care randomized trial: manual for the implementation of the new model. *WHO antenatal care randomized trial: manual for the implementation of the new model* 2002. p. 37-.
214. McFarlane J, Parker B, Soeken K, Bullock L. Assessing for abuse during pregnancy: severity and frequency of injuries and associated entry into prenatal care. *Jama*. 1992;267(23):3176-8.
215. Abebe Abate B, Admassu Wossen B, Tilahun Degfie T. Determinants of intimate partner violence during pregnancy among married women in Abay Chomen district, Western Ethiopia: a community based cross sectional study. *BMC women's health*. 2016;16:16.

216. Deshpande NA, Lewis-O'Connor A. Screening for intimate partner violence during pregnancy. *Reviews in obstetrics and gynecology*. 2013;6(3-4):141.
217. Rabin RF, Jennings JM, Campbell JC, Bair-Merritt MH. Intimate partner violence screening tools: a systematic review. *American journal of preventive medicine*. 2009;36(5):439-45.e4.
218. Ellsberg MC, Heise L, Organization WH. *Researching violence against women: practical guidelines for researchers and activists*. 2005.
219. Chisholm CA, Bullock L, Ferguson II JEJ. Intimate partner violence and pregnancy: epidemiology and impact. *American journal of obstetrics and gynecology*. 2017;217(2):141-4.
220. O'Reilly R, Beale B, Gillies D. Screening and intervention for domestic violence during pregnancy care: a systematic review. *Trauma, Violence, & Abuse*. 2010;11(4):190-201.
221. Norton LB, Peipert JF, Zierler S, Lima B, Hume L. Battering in pregnancy: an assessment of two screening methods. *Obstetrics and gynecology*. 1995;85(3):321-5.
222. Royston P, Sauerbrei W. *Multivariable Model - Building: A Pragmatic Approach to Regression Analysis based on Fractional Polynomials for Modelling Continuous Variables*: Wiley; 2008.
223. Agresti A. *Building and applying logistic regression models*. *Categorical Data Analysis, Second Edition*. 2003:211-66.
224. Symonds MR, Moussalli A. A brief guide to model selection, multimodel inference and model averaging in behavioural ecology using Akaike's information criterion. *Behavioral Ecology and Sociobiology*. 2011;65(1):13-21.
225. Snipes M, Taylor DC. Model selection and Akaike Information Criteria: An example from wine ratings and prices. *Wine Economics and Policy*. 2014;3(1):3-9.
226. Burnham KP, Anderson DR. *Model Selection and Inference: A Practical Information-Theoretic Approach*: Springer New York; 2013.
227. Burnham KP, Anderson DR. *Model Selection and Multimodel Inference: A Practical Information-Theoretic Approach*: Springer New York; 2003.
228. VanderWeele TJ. Principles of confounder selection. *European journal of epidemiology*. 2019;34(3):211-9.
229. Shrier I, Platt RW. Reducing bias through directed acyclic graphs. *BMC medical research methodology*. 2008;8(1):1-15.
230. Blakely T, Lynch J, Simons K, Bentley R, Rose S. Reflection on modern methods: when worlds collide—prediction, machine learning and causal inference. *International journal of epidemiology*. 2020;49(6):2058-64.
231. VanderWeele TJ. Mediation analysis: a practitioner's guide. *Annual review of public health*. 2016;37:17-32.
232. Saunders B, Sim J, Kingstone T, Baker S, Waterfield J, Bartlam B, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*. 2018;52(4):1893-907.
233. Moser A, Korstjens I. Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*. 2018;24(1):9-18.
234. Colombini M, Mayhew SH, Ali SH, Shuib R, Watts C. An integrated health sector response to violence against women in Malaysia: lessons for supporting scale up. *BMC public health*. 2012;12(1):548.
235. Yigzaw T, Berhane Y, Deyessa N, Kaba M. Perceptions and attitude towards violence against women by their spouses: A qualitative study in Northwest Ethiopia. *Ethiopian Journal of Health Development*. 2010;24(1).
236. Djikanovic B, Celik H, Simic S, Matejic B, Cucic V. Health professionals' perceptions of intimate partner violence against women in Serbia: Opportunities and barriers for response improvement. *Patient education and counseling*. 2010;80(1):88-93.

237. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care*. 2007;19(6):349-57.
238. Nelson E-UE. Intimate Partner Violence against Women and the Social Construction of Masculinity in Oron, South-Coastal Nigeria. *Nordic Journal of African Studies*. 2017;26(1):20-.
239. Campbell C, Mannell J. Conceptualising the agency of highly marginalised women: Intimate partner violence in extreme settings. *Global public health*. 2016;11(1-2):1-16.
240. Wingood GM, DiClemente RJ. Application of the theory of gender and power to examine HIV-related exposures, risk factors, and effective interventions for women. *Health education & behavior*. 2000;27(5):539-65.
241. Abramsky T, Watts CH, Garcia-Moreno C, Devries K, Kiss L, Ellsberg M, et al. What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. *BMC public health*. 2011;11(1):109.
242. Stith SM, Smith DB, Penn CE, Ward DB, Tritt D. Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. *Aggression and violent behavior*. 2004;10(1):65-98.
243. Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qualitative health research*. 2005;15(9):1277-88.
244. Joffe H, Yardley L. Content and thematic analysis. *Research methods for clinical and health psychology*. 2004;56:68.
245. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse education today*. 2004;24(2):105-12.
246. Elo S, Kyngäs H. The qualitative content analysis process. *Journal of advanced nursing*. 2008;62(1):107-15.
247. Marks DF, Yardley L. *Research Methods for Clinical and Health Psychology*: SAGE Publications; 2004.
248. Hussein A. The use of triangulation in social sciences research: Can qualitative and quantitative methods be combined. *Journal of comparative social work*. 2009;1(8):1-12.
249. Schoonenboom J, Johnson RB. How to construct a mixed methods research design. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*. 2017;69(2):107-31.
250. Rothman KJ, Greenland S, Lash TL. *Modern epidemiology*. 3rd Ed, Lippincott camp, Philadelphia, USA. 2008.
251. Pun KD, Rishal P, Infanti JJ, Bjørngaard JH, Koju R, Schei B, et al. Exposure to domestic violence influences pregnant women's preparedness for childbirth in Nepal: A cross-sectional study. *PloS one*. 2018;13(7):e0200234.
252. Finnbogadottir H, Dykes AK, Wann-Hansson C. Prevalence and incidence of domestic violence during pregnancy and associated risk factors: a longitudinal cohort study in the south of Sweden. *BMC pregnancy and childbirth*. 2016;16:228.
253. Moonesinghe LN, Rajapaksa LC, Samarasinghe G. Development of a screening instrument to detect physical abuse and its use in a cohort of pregnant women in Sri Lanka. *Asia-Pacific journal of public health / Asia-Pacific Academic Consortium for Public Health*. 2004;16(2):138-44.
254. Gyuse AN, Ushie AP. Pattern of domestic violence among pregnant women in Jos, Nigeria. *South African Family Practice*. 2009;51(4):343-5.
255. Kimberlin CL, Winterstein AG. Validity and reliability of measurement instruments used in research. *American journal of health-system pharmacy*. 2008;65(23):2276-84.
256. Martz E. Enough is Enough! Handling Multicollinearity in Regression Analysis. Retrieved. 2013;6(14):2014.
257. Dattalo P. *Determining sample size: Balancing power, precision, and practicality*: Oxford University Press; 2008.

258. Panagiotakos DB. The value of p-value in biomedical research. *The open cardiovascular medicine journal*. 2008;2:97.
259. Pannucci CJ, Wilkins EG. Identifying and avoiding bias in research. *Plastic and reconstructive surgery*. 2010;126(2):619.
260. Rothman KJ. *Modern epidemiology*. 2nd Ed, Oxford Univ. press, New York, USA. 2012.
261. Pearce N. *A short introduction to epidemiology*: Centre for Public Health Research, Massey University; 2005.
262. Gross K, Alba S, Glass TR, Schellenberg JA, Obrist B. Timing of antenatal care for adolescent and adult pregnant women in south-eastern Tanzania. *BMC pregnancy and childbirth*. 2012;12(1):16.
263. Ferguson L. External validity, generalizability, and knowledge utilization. *Journal of Nursing Scholarship*. 2004;36(1):16-22.
264. Rothman KJ, Greenland S. Causation and causal inference in epidemiology. *American journal of public health*. 2005;95(S1):S144-S50.
265. Hill AB. Environment and disease: association or accusation? *Revista Cubana de Salud Pública*. 2008;34(2):0-.
266. Milena ZR, Dainora G, Alin S. Qualitative research methods: A comparison between focus-group and in-depth interview. *Annals of the University of Oradea, Economic Science Series*. 2008;17(4):1279-83.
267. Lincoln YS, Guba EG. But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New directions for program evaluation*. 1986;1986(30):73-84.
268. Elliott R, Fischer CT, Rennie DL. Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British journal of clinical psychology*. 1999;38(3):215-29.
269. Kivunja C, Kuyini AB. Understanding and applying research paradigms in educational contexts. *International Journal of higher education*. 2017;6(5):26-41.
270. Lincoln YS, Lynham SA, Guba EG. Paradigmatic controversies, contradictions, and emerging confluences, revisited. *The Sage handbook of qualitative research*. 2011;4:97-128.
271. Tessier S. From field notes, to transcripts, to tape recordings: Evolution or combination? *International Journal of Qualitative Methods*. 2012;11(4):446-60.
272. Pandey SC, Patnaik S. Establishing reliability and validity in qualitative inquiry: A critical examination. *Jharkhand journal of development and management studies*. 2014;12(1):5743-53.
273. Noble H, Smith J. Issues of validity and reliability in qualitative research. *Evidence-based nursing*. 2015;18(2):34-5.
274. Palaganas EC, Sanchez MC, Molintas M, Visitacion P, Caricativo RD. Reflexivity in qualitative research. 2017.
275. Stenfors T, Kajamaa A, Bennett D. How to... assess the quality of qualitative research. *The clinical teacher*. 2020;17(6):596-9.
276. Bourke B. Positionality: Reflecting on the research process. *The Qualitative Report*. 2014;19(33):1-9.
277. Greene MJ. On the inside looking in: Methodological insights and challenges in conducting qualitative insider research. *The qualitative report*. 2014;19(29):1-13.
278. Gair S. Feeling their stories: Contemplating empathy, insider/outsider positionings, and enriching qualitative research. *Qualitative health research*. 2012;22(1):134-43.
279. Yohannes K, Abebe L, Kisi T, Demeke W, Yimer S, Feyiso M, et al. The prevalence and predictors of domestic violence among pregnant women in Southeast Oromia, Ethiopia. *Reproductive health*. 2019;16(1):37.
280. Berhanie E, Gebregziabher D, Berihu H, Gerezgiher A, Kidane G. Intimate partner violence during pregnancy and adverse birth outcomes: a case-control study. *Reproductive health*. 2019;16(1):22.

281. Azene ZN, Yeshita HY, Mekonnen FA. Intimate partner violence and associated factors among pregnant women attending antenatal care service in Debre Markos town health facilities, Northwest Ethiopia. *PloS one*. 2019;14(7):e0218722.
282. Lencha B, Ameya G, Baresa G, Minda Z, Ganfure G. Intimate partner violence and its associated factors among pregnant women in Bale Zone, Southeast Ethiopia: A cross-sectional study. *PloS one*. 2019;14(5):e0214962.
283. Alebel A, Kibret GD, Wagnew F, Tesema C, Ferede A, Petrucka P, et al. Intimate partner violence and associated factors among pregnant women in Ethiopia: a systematic review and meta-analysis. *Reproductive health*. 2018;15(1):1-12.
284. Adhena G, Oljira L, Dessie Y, Hidru HD. Magnitude of Intimate Partner Violence and Associated Factors among Pregnant Women in Ethiopia. *Advances in Public Health*. 2020;2020.
285. Fekadu E, Yigzaw G, Gelaye KA, Ayele TA, Minwuye T, Geneta T, et al. Prevalence of domestic violence and associated factors among pregnant women attending antenatal care service at University of Gondar Referral Hospital, Northwest Ethiopia. *BMC women's health*. 2018;18(1):138.
286. Ashenafi W MB, Egata G, Berhane Y. Prevalence and Associated Factors of Intimate Partner Violence during Pregnancy in Eastern Ethiopia. *International journal of women's health*. 2020; 12: 339–358. 2020.
287. Kreiman G, Maunsell J. Nine criteria for a measure of scientific output. *Frontiers in computational neuroscience*. 2011;5:48.
288. Abramo G, D'Angelo CA. Evaluating research: from informed peer review to bibliometrics. *Scientometrics*. 2011;87(3):499-514.
289. Cheng J-L, Chu Y-P, Han S-F, Li Y-J, Tan Q. Research and perspectives on criteria for evaluation of nursing research achievements. *Chinese Nursing Research*. 2017;4(3):107-12.
290. Mohammed BH, Johnston JM, Harwell JI, Yi H, Tsang KW-k, Haidar JA. Intimate partner violence and utilization of maternal health care services in Addis Ababa, Ethiopia. *BMC health services research*. 2017;17(1):178.
291. Field-Fote E. Mediators and moderators, confounders and covariates: Exploring the variables that illuminate or obscure the “active ingredients” in neurorehabilitation. *Journal of Neurologic Physical Therapy*. 2019;43(2):83-4.
292. Bifftu BB, Dachew BA, Tadesse Tiruneh B, Zewoldie AZ. Domestic violence among pregnant mothers in Northwest Ethiopia: prevalence and associated factors. *Advances in Public Health*. 2017;2017.
293. Kassa ZY, Menale AW. Physical violence and associated factors during pregnancy in Yirgalem town, South Ethiopia. *Current Pediatric Research*. 2016.
294. Rurangirwa AA, Mogren I, Ntaganira J, Krantz G. Intimate partner violence among pregnant women in Rwanda, its associated risk factors and relationship to ANC services attendance: a population-based study. *BMJ open*. 2017;7(2):e013155.
295. Eputai J, Udho S, Auma AG, Nabirye RC. Intimate partner violence among pregnant women in Uganda. *African Journal of Midwifery and Women's Health*. 2019;13(2):1-5.
296. Chaquisse E, Fraga S, Meireles P, Macassa G, Soares J, Mbofana F, et al. Sexual and physical intimate partner violence among women using antenatal care in Nampula, Mozambique. *Journal of public health in Africa*. 2018;9(1):744.
297. Anzaku SA, Shuaibu A, Dankyau M, Chima G. Intimate partner violence and associated factors in an obstetric population in Jos, North-central Nigeria. *Sahel Medical Journal*. 2017;20(2):49.
298. Owaka IO, Nyanchoka MK, Atieli HE. Intimate partner violence in pregnancy among antenatal attendees at health facilities in West Pokot county, Kenya. *Pan African Medical Journal*. 2017;28(1).
299. Black E, Worth H, Clarke S, Obol JH, Akera P, Awor A, et al. Prevalence and correlates of intimate partner violence against women in conflict affected northern Uganda: a cross-sectional study. *Conflict and health*. 2019;13(1):35.

300. Tiruye TY, Harris ML, Chojenta C, Holliday E, Loxton D. Determinants of intimate partner violence against women in Ethiopia: A multi-level analysis. *PloS one*. 2020;15(4):e0232217.
301. Gashaw BT, Schei B, Magnus JH. Social ecological factors and intimate partner violence in pregnancy. *PloS one*. 2018;13(3):e0194681.
302. Tunçalp Ö, Pena-Rosas JP, Lawrie T, Bucagu M, Oladapo OT, Portela A, et al. WHO recommendations on antenatal care for a positive pregnancy experience-going beyond survival. *BJOG : an international journal of obstetrics and gynaecology*. 2017;124(6):860-2.
303. Islam MJ, Broidy L, Baird K, Mazerolle P. Exploring the associations between intimate partner violence victimization during pregnancy and delayed entry into prenatal care: evidence from a population-based study in Bangladesh. *Midwifery*. 2017;47:43-52.
304. Musa A, Chojenta C, Geleto A, Loxton D. The associations between intimate partner violence and maternal health care service utilization: a systematic review and meta-analysis. *BMC women's health*. 2019;19(1):1-14.
305. Ejeta E, Dabsu R, Zewdie O, Merdassa E. Factors determining late antenatal care booking and the content of care among pregnant mother attending antenatal care services in East Wollega administrative zone, West Ethiopia. *Pan African Medical Journal*. 2017;27(1).
306. Tesfaye G, Loxton D, Chojenta C, Semahegn A, Smith R. Delayed initiation of antenatal care and associated factors in Ethiopia: a systematic review and meta-analysis. *Reproductive health*. 2017;14(1):150.
307. Gulema H, Berhane Y. Timing of first antenatal care visit and its associated factors among pregnant women attending public health facilities in Addis Ababa, Ethiopia. *Ethiopian journal of health sciences*. 2017;27(2):139-46.
308. Teshale AB, Tesema GA. Prevalence and associated factors of delayed first antenatal care booking among reproductive age women in Ethiopia; a multilevel analysis of EDHS 2016 data. *PloS one*. 2020;15(7):e0235538.
309. Belete AH, Assega MA, Abajobir AA, Belay YA, Tariku MK. Prevalence of antenatal depression and associated factors among pregnant women in Aneded woreda, North West Ethiopia: a community based cross-sectional study. *BMC research notes*. 2019;12(1):713.
310. Abdelhai R, Mosleh H. Screening for antepartum anxiety and depression and their association with domestic violence among Egyptian pregnant women. *The Journal of the Egyptian Public Health Association*. 2015;90(3):101-8.
311. Rurangirwa AA, Mogren I, Ntaganira J, Govender K, Krantz G. Intimate partner violence during pregnancy in relation to non-psychotic mental health disorders in Rwanda: a cross-sectional population-based study. *BMJ open*. 2018;8(7):e021807.
312. Thomas JL, Lewis JB, Martinez I, Cunningham SD, Siddique M, Tobin JN, et al. Associations between intimate partner violence profiles and mental health among low-income, urban pregnant adolescents. *BMC pregnancy and childbirth*. 2019;19(1):120.
313. Rubertsson C, Hellström J, Cross M, Sydsjö G. Anxiety in early pregnancy: prevalence and contributing factors. *Archives of women's mental health*. 2014;17(3):221-8.
314. Andersson L, Sundström-Poromaa I, Wulff M, Åström M, Bixo M. Implications of antenatal depression and anxiety for obstetric outcome. *Obstetrics & Gynecology*. 2004;104(3):467-76.
315. Dipietro JA, Costigan KA, Sipsma HL. Continuity in self-report measures of maternal anxiety, stress, and depressive symptoms from pregnancy through two years postpartum. *Journal of Psychosomatic Obstetrics & Gynecology*. 2008;29(2):115-24.
316. Bales M, Pambrun E, Melchior M, Glangeaud-Freudenthal N-C, Charles M-A, Verdoux H, et al. Prenatal psychological distress and access to mental health care in the ELFE cohort. *European Psychiatry*. 2015;30(2):322-8.

317. Shamu S, Shamu P, Machisa M. Factors associated with past year physical and sexual intimate partner violence against women in Zimbabwe: results from a national cluster-based cross-sectional survey. *Global health action*. 2018;11(sup3):1625594.
318. McCloskey LA, Williams C, Larsen U. Gender inequality and intimate partner violence among women in Moshi, Tanzania. *International family planning perspectives*. 2005:124-30.
319. Rahman A, Creed F. Outcome of prenatal depression and risk factors associated with persistence in the first postnatal year: Prospective study from Rawalpindi, Pakistan. *Journal of affective disorders*. 2007;100(1-3):115-21.
320. Harvey C GM, Butchart A. . Primary prevention of intimate-partner violence and sexual violence. WHO; 2007.
321. Voith LA, Azen R, Qin W. Social capital effects on the relation between neighborhood characteristics and intimate partner violence victimization among women. *Journal of urban health*. 2021;98(1):91-100.
322. Di Napoli I, Procentese F, Carnevale S, Esposito C, Arcidiacono C. Ending intimate partner violence (IPV) and locating men at stake: an ecological approach. *International journal of environmental research and public health*. 2019;16(9):1652.
323. Gebrezgi BH, Badi MB, Cherkose EA, Weldehaweria NB. Factors associated with intimate partner physical violence among women attending antenatal care in Shire Endasselassie town, Tigray, northern Ethiopia: a cross-sectional study, July 2015. *Reproductive health*. 2017;14(1):76.
324. Laelago T, Belachew T, Tamrat M. Effect of intimate partner violence on birth outcomes. *African health sciences*. 2017;17(3):681-9.
325. Musa A, Chojenta C, Loxton D. High rate of partner violence during pregnancy in eastern Ethiopia: Findings from a facility-based study. *PloS one*. 2020;15(6):e0233907.
326. Ali TS, Krantz G, Gul R, Asad N, Johansson E, Mogren I. Gender roles and their influence on life prospects for women in urban Karachi, Pakistan: a qualitative study. *Global health action*. 2011;4:7448.
327. Coston BM. Power and Inequality: Intimate Partner Violence Against Bisexual and Non-Monosexual Women in the United States. *Journal of interpersonal violence*. 2017:0886260517726415.
328. Carter J. Patriarchy and violence against women and girls. *The Lancet*. 2015;385(9978):e40-e1.
329. Bifftu BB, Dachew BA, Tiruneh BT, Gezie LD, Guracho YD. Domestic violence related disclosure among women and girls in Ethiopia: a systematic review and meta-analysis. *Reproductive health*. 2019;16(1):1-10.
330. Agenagnew L, Tebeje B, Tilahun R. Disclosure of Intimate Partner Violence and Associated Factors among Victimized Women, Ethiopia, 2018: A Community-Based Study. *International Journal of Reproductive Medicine*. 2020.
331. Lockwood D, Prohaska A. Police Officer Gender and Attitudes toward Intimate Partner Violence: How policy can eliminate stereotypes. *International Journal of Criminal Justice Sciences*. 2015;10(1).
332. Horn R, Puffer ES, Roesch E, Lehmann H. 'I don't need an eye for an eye': Women's responses to intimate partner violence in Sierra Leone and Liberia. *Global public health*. 2016;11(1-2):108-21.
333. Bayeh E. The role of empowering women and achieving gender equality to the sustainable development of Ethiopia. *Pacific Science Review B: Humanities and Social Sciences*. 2016;2(1):37-42.
334. Ranganathan M, Knight L, Abramsky T, Muvhango L, Polzer Ngwato T, Mbobelatsi M, et al. Associations between women's economic and social empowerment and intimate partner violence: Findings from a microfinance plus program in rural North West Province, South Africa. *Journal of interpersonal violence*. 2019:0886260519836952.
335. Nason-Clark N, Fisher-Townsend B, Holtmann C, McMullin S. Religion and intimate partner violence: Understanding the challenges and proposing solutions: Oxford University Press; 2018.
336. Techane MG. Economic Equality and Female Marginalisation in the SDGs Era: Reflections on Economic Rights of Women in Africa. *Peace Human Rights Governance*. 2017;1(3).

337. Sikweyiya Y A-LA, Alangea DO, et al. Patriarchy and gender-inequitable attitudes as drivers of intimate partner violence against women in the central region of Ghana. *BMC Public Health*. 2020;20:682.
338. Chepuka L, Taegtmeier M, Chorwe-Sungani G, Mambulasa J, Chirwa E, Tolhurst R. Perceptions of the mental health impact of intimate partner violence and health service responses in Malawi. *Global health action*. 2014;7(1):24816.
339. Procentese F, Di Napoli I, Tuccillo F, Chiurazzi A, Arcidiacono C. Healthcare professionals' perceptions and concerns towards domestic violence during pregnancy in Southern Italy. *International journal of environmental research and public health*. 2019;16(17):3087.
340. Martin-de-Las-Heras S, Velasco C, Luna-del-Castillo JdD, Khan KS. Maternal outcomes associated to psychological and physical intimate partner violence during pregnancy: A cohort study and multivariate analysis. *PloS one*. 2019;14(6):e0218255.
341. Tavoli Z, Tavoli A, Amirpour R, Hosseini R, Montazeri A. Quality of life in women who were exposed to domestic violence during pregnancy. *BMC pregnancy and childbirth*. 2016;16(1):1-7.
342. Tiwari A, Chan KL, Fong D, Leung W-C, Brownridge DA, Lam H, et al. The impact of psychological abuse by an intimate partner on the mental health of pregnant women. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2008;115(3):377-84.
343. Lukasse M, Henriksen L, Vangen S, Schei B. Sexual violence and pregnancy-related physical symptoms. *BMC pregnancy and childbirth*. 2012;12(1):83.
344. Schei B, Lukasse M, Ryding EL, Campbell J, Karro H, Kristjansdottir H, et al. A history of abuse and operative delivery--results from a European multi-country cohort study. *PloS one*. 2014;9(1):e87579.
345. Henriksen L, Vangen S, Schei B, Lukasse M. Sexual violence and antenatal hospitalization. *Birth (Berkeley, Calif)*. 2013;40(4):281-8.
346. Alsaker K, Moen BE, Baste V, Morken T. Sexual coercion in marriage or cohabitating relationships is linked to other types of intimate partner violence. *Norwegian Journal of Clinical Nursing/Sykepleien Forskning*. 2018.
347. Rishal P, Joshi SK, Lukasse M, Schei B, Swahnberg K, Group AS. 'They just walk away'--women's perception of being silenced by antenatal health workers: a qualitative study on women survivors of domestic violence in Nepal. *Global health action*. 2016;9(1):31838.
348. Colombini M, Mayhew S, Ali SH, Shuib R, Watts C. "I feel it is not enough..." Health providers' perspectives on services for victims of intimate partner violence in Malaysia. *BMC health services research*. 2013;13(1):65.
349. Turan JM, Hatcher AM, Odero M, Onono M, Kodero J, Romito P, et al. A community-supported clinic-based program for prevention of violence against pregnant women in rural Kenya. *AIDS research and treatment*. 2013;2013.
350. Shamu S, Abrahams N, Temmerman M, Zarowsky C. Opportunities and obstacles to screening pregnant women for intimate partner violence during antenatal care in Zimbabwe. *Culture, health & sexuality*. 2013;15(5):511-24.
351. Hatcher AM, Woollett N, Pallitto CC, Mokoatle K, Stöckl H, Garcia-Moreno C. Willing but not able: Patient and provider receptiveness to addressing intimate partner violence in Johannesburg antenatal clinics. *Journal of interpersonal violence*. 2019;34(7):1331-56.
352. Laisser RM, Nyström L, Lindmark G, Lugina HI, Emmelin M. Screening of women for intimate partner violence: a pilot intervention at an outpatient department in Tanzania. *Global health action*. 2011;4(1):7288.
353. Keynejad RC, Bitew T, Sorsdahl K, Myers B, Honikman S, Medhin G, et al. Problem solving therapy (PST) tailored for intimate partner violence (IPV) versus standard PST and enhanced usual care for pregnant women experiencing IPV in rural Ethiopia: protocol for a randomised controlled feasibility trial. *Trials*. 2020;21:1-15.

354. Glass N, Perrin NA, Kohli A, Campbell J, Remy MM. Randomised controlled trial of a livestock productive asset transfer programme to improve economic and health outcomes and reduce intimate partner violence in a postconflict setting. *BMJ global health*. 2017;2(1).
355. Abramsky T, Devries KM, Michau L, Nakuti J, Musuya T, Kyegombe N, et al. The impact of SASA!, a community mobilisation intervention, on women's experiences of intimate partner violence: secondary findings from a cluster randomised trial in Kampala, Uganda. *Journal of epidemiology and community health*. 2016;70(8):818-25.
356. Hatcher AM, McBride R-S, Rebombo D, Munshi S, Khumalo M, Christofides N. Process evaluation of a community mobilization intervention for preventing men's partner violence use in peri-urban South Africa. *Evaluation and program planning*. 2020;78:101727.
357. Kim JC, Watts CH, Hargreaves JR, Ndhlovu LX, Phetla G, Morison LA, et al. Understanding the impact of a microfinance-based intervention on women's empowerment and the reduction of intimate partner violence in South Africa. *American journal of public health*. 2007;97(10):1794-802.
358. Sharps PW, Bullock LF, Campbell JC, Alhusen JL, Ghazarian SR, Bhandari SS, et al. Domestic violence enhanced perinatal home visits: The DOVE randomized clinical trial. *Journal of Women's Health*. 2016;25(11):1129-38.
359. Van Parys AS, Verhamme A, Temmerman M, Verstraelen H. Intimate partner violence and pregnancy: a systematic review of interventions. *PloS one*. 2014;9(1):e85084.
360. O'Doherty L, Hegarty K, Ramsay J, Davidson LL, Feder G, Taft A. Screening women for intimate partner violence in healthcare settings. *Cochrane database of systematic reviews*. 2015(7).
361. Miller E, McCaw B, Humphreys BL, Mitchell C. Integrating intimate partner violence assessment and intervention into healthcare in the United States: a systems approach. *Journal of Women's Health*. 2015;24(1):92-9.

Intimate Partner Violence in Pregnancy in Ethiopia

Published articles I-IV

RESEARCH ARTICLE

Social ecological factors and intimate partner violence in pregnancy

Bosena Tebeje Gashaw^{1,2*}, Berit Schei^{3,4}, Jeanette H. Magnus^{2,5}

1 College of Health Sciences, Jimma University, Jimma, Ethiopia, **2** Faculty of Medicine, University of Oslo, Oslo, Norway, **3** Department of Public Health and Nursing, Faculty of Medicine and Health Sciences, University of Science and Technology, Trondheim, Norway, **4** Department of Obstetrics and Gynaecology, St. Olav's hospital, Trondheim University Hospital, Trondheim, Norway, **5** Department of Global Community Health and Behavioral Sciences, Tulane School of Public Health and Tropical Medicine, New Orleans, Louisiana, United States of America

* bosenatebeje@yahoo.co.uk



Abstract

Background

Intimate partner violence (IPV) during pregnancy increases adverse pregnancy outcomes. Knowledge of societal, community, family and individual related factors associated with IPV in pregnancy is limited in Ethiopia. Our study examined these factors in an Ethiopian context.

Materials and methods

A cross sectional study was conducted among pregnant women attending antenatal care at governmental health institutions, using a consecutive probability sampling strategy. A total of 720 pregnant women were interviewed by five trained nurses or midwives, using a standardized and /pretested survey questionnaire. Bivariate and multivariate logistic regression analyses were applied to assess factors contributing to IPV. We used Akaike's information criteria, to identify the model that best describes the factors influencing IPV in pregnancy.

Results

Among the women interviewed, physical IPV was reported by 35.6%, and lifetime emotional or physical abuse by 81.0%. Perceiving violence as a means to settle interpersonal conflicts, presence of supportive attitudes of wife beating in the society, regarding violence as an expression of masculinity, and presence of strict gender role differences in the society, were all positively associated to IPV in pregnancy. The presence of groups legitimizing men's violence in the community, feeling isolated, having no social support for victims, and presence of high unemployment, were the perceived community related factors positively associated with IPV in pregnancy.

OPEN ACCESS

Citation: Gashaw BT, Schei B, Magnus JH (2018) Social ecological factors and intimate partner violence in pregnancy. PLoS ONE 13(3): e0194681. <https://doi.org/10.1371/journal.pone.0194681>

Editor: Laura A. Magee, King's College London, UNITED KINGDOM

Received: August 20, 2017

Accepted: March 7, 2018

Published: March 29, 2018

Copyright: © 2018 Gashaw et al. This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Funding: This publication was supported by NORAD (Norwegian Agency for Development Cooperation) under the NORHED-Program, Agreement no. "ETH-13/0024". The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Competing interests: The authors have declared that no competing interests exist.

Conclusion

IPV in pregnancy is very prevalent in Ethiopia and is associated with multiple social ecologic factors. Reduction of IPV in pregnancy calls for cross sectorial efforts from stakeholders at different levels.

Background

Intimate partner violence (IPV), is an important global public health and human rights issue, with significant health and socioeconomic development consequences [1]. Violence against women may occur at any stage of a woman's life, including during pregnancy. The overall global estimates of IPV around the time of pregnancy vary between 3–30% [2], with higher prevalence reported in developing countries [3]. In Africa, the prevalence of pregnancy related IPV is reported to be between 23–40% [4]. Prior studies in Ethiopia indicate a very high life time prevalence of IPV among reproductive age women at 50–78% [5–10], and pregnancy related IPV between 11–29% [11–15]. The majority of these studies examined factors contributing to IPV in pregnancy related to the individual context, such as childhood inter-parental exposure, early marriage, dowry payment, residence, alcohol use and or education. *It is important to* conceptualize violence as a multifaceted phenomenon grounded in the interplay across societal, community, family, and individual levels. There is a lack of studies that simultaneously examine societal, community, family, and individual related factors contributing to IPV in pregnancy in Africa and in Ethiopia in particular.

A healthy pregnancy is required for favourable maternal and child health outcomes. Pregnancies affected by IPV are reported to have an increased incidence of low maternal weight gain, anaemia, infection, first/second trimester bleeding, late entry into antenatal care (ANC), preterm labour, premature birth and low birth weight baby [16, 17]. Homicide is also one of the leading causes of pregnancy associated death, commonly as a consequence of IPV [18]. IPV may commence or escalate in pregnancy [19]. Studies report that IPV during pregnancy is more common than some maternal health conditions routinely screened for during antenatal care [4, 20]. The causes for IPV are complex and dependent on the context [21]. Many of the previous studies have identified various individual and family related risk factors [11, 13, 15, 22, 23]. Few empirical studies have, however, explored the association of all social ecologic factors, (specifically societal and community) with IPV in pregnancy.

This study aimed to address the gaps in the existing literature concerning the social ecologic factors that make pregnant women vulnerable to IPV. Guided by the social ecological model (SEM), the current study examined the prevalence, pattern and the association between social ecologic factors (related to the society, community, family and individual) and IPV in pregnancy in an Ethiopian context.

Materials and methods

Study design and population

This cross sectional study was conducted during an antenatal care visit at all health centres, and hospitals in Jimma, 177, 900 inhabitants, (CSA, 2015) and, located in Oromiya regional state, 352 km south west of Addis Ababa, Ethiopia, from November 2015 to March 30, 2016.

Included were women, with a pregnancy estimated to be ≥ 24 weeks of gestation. Sample size was calculated based on a single population proportion formula using the assumptions of:

95% confidence interval, 4% degree of precision. We assumed 50% as the expected prevalence based on the average from previous studies [4, 11] and a 20% non-response rate for our power calculation. The estimated number of women was proportionally recruited in all study facilities based on their average monthly client flow. The proportional allocation ranged from 78–233.

Data collection tools and strategy

A standard questionnaire was developed based on the Abuse Assessment Screening (AAS) tools developed by the Nursing Research Consortium on Violence [24–26] and the social-ecologic factors adapted from the 2005 WHO practical guidelines for researchers [27, 28]. The compiled questionnaire was translated from English language to Amharic and Afan Oromo by a translator and back-translated to English language by a second translator to ensure consistency. Pre-test covered 5% of the sampled pregnant women with similar socio-demographic characteristics using institutions not included in the study. Minor modifications were made to the AAS tool to capture the different types of IPV in behavioural terms.

The study data were collected by five female, midwives/nurses working at the respective institutions, fluent in both languages (Afan Oromo and Amharic). Training was given on how to interview, handling ethical issues and maintaining confidentiality and privacy using a training manual. During data collection, to prevent incomplete and inconsistent responses, the researcher and supervisors were available for supervising and counter-checking completed questionnaires.

Measurements and data analysis

The experience of Intimate Partner Violence (S2 File) was measured using Abuse Assessment Screening (AAS) tools: to measure the lifetime emotional or physical violence, women were asked if they have ever been emotionally or physically abused by their partner or someone important to them, with a response of Yes/No; Within the last year physical violence was measured, if women have ever been hit, slapped, kicked, or otherwise physically hurt by someone within the last year, response, Yes/No; if Yes, who? (Husband, Ex-husband, Boy friend, Stranger, In-laws, Multiple); Physical violence in the current pregnancy was measured, whether women have been slapped, kicked, or otherwise physically hurt by someone during the current pregnancy, response, Yes/No; If Yes, who? (Husband, Ex-husband, Boyfriend, Stranger, In-laws, Multiple); again If Yes, where? (on the Face, Head, Abdomen, Back, Buttock, Other, state); Incidents of physical violence were scored according to the following scale: (1 = Threats of abuse including use of weapon, 2 = Slapping, pushing with no injuries and/or lasting pain, 3 = Punching, kicking, bruises, cuts and/or continuing pain, 4 = Beating up, severe contusions, burns or broken bones, 5 = Head injury, internal injury or permanent injury, 6 = Use of weapon (gun, knife), or wound from weapon); Within the last year sexual violence was measured, if women have been forced to have sexual activities by anyone within the last year, response, Yes/No, If Yes, who? (Husband, Ex-husband, Boy friend, Stranger, Multiple); Whether the women were afraid of their partner or anyone listed above, response, Yes/No. Women were also asked where did they turn in the incidents of any IPV, response: their family, neighbors, religious father, keep silent, or other state; If they keep silent, they were asked to state major reason/s. Additional tools that were not included in the AAS in behavioral terms were added to measure psychological violence [i.e., within the last year, if women have been insulted, belittled, constantly humiliated, intimidated (e.g. destroying things), threatened of being harmed and/ threatened to take away children by their partner]; and controlling behavior which was measured, whether women have been controlled by their partner with in the last year, with the response of any of the following: isolated from family and friends,

monitored their movements, restricted access to financial resources, restricted from employment, education or medical care.

IPV during the current pregnancy was the dependent variable; operationalized in this study as, answering 'Yes' to any of the following: "since you've been pregnant (current pregnancy), have you been slapped, kicked, or otherwise physically hurted by your intimate partner (husband, ex-husband or boyfriend)". While, each item under the four domains of social ecologic model (Societal domain, Community domain, Family domain and Individual domain) were considered as exposure variables and their responses were coded as Yes/No for each.

All information were entered in EPiData and exported to SPSS (version 20.0) for analysis.

Multi-collinearity or redundancy, [29], was checked by variance inflation factor, tolerance test and the standard errors of the regression coefficients. Consistency (internal validity) of factors under each domain were measured by Cronbach's alpha and were all 0.7 or above. Descriptive statistics, such as frequency, percent, mean with (SD) and median were computed to summarize baseline characteristics. Comparative analyses using chi-square p-value test was done to explore association between various socio-demographic characteristics of the pregnant women and her partner with IPV in pregnancy (Table 1). Both univariate and multivariate logistic regression models were used to assess the unadjusted and adjusted association, respectively. Only significant variables in the crude analysis were entered into the multivariate logistic regression analysis. Potential confounders (age and education of the woman and her partner) were considered based on their significant statistical association between their effects (both to exposure and outcome) in the crude analyses and based on the findings in earlier studies [10, 30]. In the multivariable logistic regression analysis 95% confidence interval (CI) for OR (odds ratio) was calculated. Backward elimination variable selection process for multiple regression was used to identify the final significant and independent variables [31].

We used Akaike's information criteria (AIC), [32–36] and the principles of parsimony (simple model) with few covariates, as results based on such a model promote numerical stability and generalizability of the results [32]; to identify the model that offered the best estimate of our data explaining the outcome, while bearing in mind that there is no single best model. AIC is increasingly being used when the analysis explore a range of variables associated with a particular behaviour [32–34], and used for estimating the predictive accuracy of models and guards against over fitting penalty. Based on AIC, a model with less AIC means better fit and explains the outcome. Burnham and Anderson in 2002 also noted, once the most parsimonious model is established, the traditional null-hypotheses testing can be used to make a statistical inference [37].

While adjusting for confounders (age and education of the woman and her partner), we fitted the model of each single factor, with all variables of each domain simultaneously and within the variables under each domain. After analyzing the adjusted OR, and considering the over fitting, under fitting and parsimony [36, 37], the final decision on how to interpret the result was made (Table 2). Finally (Table 3), a composite score (sum of items under each areas /domain factors) based on the frequency of individual Yes/No (Yes = 1; No = 0) responses was created. Not anticipating a normal distribution, those scoring above the median score were classified as having a positive value. While keeping the above model selection principles, the dichotomized four domain factors (societal, community, family and individual) were entered simultaneously into multivariate logistic regression model, adjusted for age and educational level of the woman and partner to analyze the strength of the association and independent effect of each domain with IPV in pregnancy.

While keeping in mind the AIC, parsimony and under fit criteria of the best model, multivariate logistic regression model was fitted to examine significant variables of the four social ecologic domain factors associated with IPV in pregnancy (Table 3). The dichotomised sum of

Table 1. Socio-demographic characteristics of pregnant women and their partner attending antenatal care, Jimma, Ethiopia, (N = 720).

Variables	All women (720) No. (%)	IPV in current pregnancy		P-value
		Yes (256) No. (%)	No (464) No. (%)	
Woman				
Age				
15–24	344(47.8)	104(30.2)	240(69.8)	<0.001
25–34	334(46.4)	125(37.4)	209(62.6)	
35–45	42(5.8)	27(64.3)	15(35.7)	
Relationship to current partner				
Married	609(84.6)	226(37.1)	383(62.9)	NS
Cohabited	100 (13.9)	25(25.0)	75(75.0)	
Boy Friend	11(1.5)	5(45.6)	6(54.5)	
Ethnicity				
Oromo	421(58.5)	160 (38.0)	261(62.0)	NS
Amhara	105(14.6)	33(31.4)	72(68.6)	
Guragie	50(6.9)	18(36.0)	32(64.0)	
Kefa	61(8.5)	15(24.6)	46(75.4)	
Dawro	53(7.4)	18(34.0)	35(66.0)	
other (Yem, Tigre, Wolayita)	30(4.2)	12(40.0)	18(60.0)	
Childhood residence				
Urban	250(34.7)	58(23.2)	192(76.8)	<0.001
Rural	470(65.3)	198(42.1)	272(57.9)	
Religion				
Orthodox	219(30.4)	70(32.0)	149 (68.0)	NS
Muslim	407(56.5)	157(38.6)	250 (61.4)	
Protestant and Catholic	94(13)	29(30.9)	65 (69.1)	
Marital duration				
less than 1 year	135(18.8)	26(19.3)	109(80.7)	<0.001
2–4 years	241(33.5)	73(30.3)	168(69.7)	
5–10 years	239(33.2)	108 (45.2)	131(54.8)	
More than 10 years	105(14.6)	49 (46.7)	56 (53.3)	
Educational status				
Read and write or no education	230(31.9)	125(54.3)	105(45.7)	<0.001
Primary cycle (1–8)	227(31.6)	75 (33.0)	152 (67.0)	
Secondary and above	263(36.5)	56 (21.3)	207(78.7)	
Generate income by yourself				
Yes	296(41.1)	95(32.1)	201(67.9)	NS
No	424(58.9)	161(38.0)	263(62.0)	
Partner				
Age				
20–35	446(61.9)	130(29.4)	316(70.6)	<0.001
35 and above	274(38.1)	126(46.0)	148(54.0)	
Monthly income				
< = 500	67(9.3)	28(41.8)	39(58.2)	NS
501–1000	164(22.8)	60(36.6)	104(63.4)	
1001–1500	112(15.6)	49(43.7)	63(56.3)	
> 1500	377(52.4)	119(31.6)	258(68.4)	
Educational status				

(Continued)

Table 1. (Continued)

Variables	All women (720) No. (%)	IPV in current pregnancy		P-value
		Yes (256) No. (%)	No (464) No. (%)	
Read and write or no education	192(26.7)	106(55.2)	86(44.8)	<0.001
Primary cycle (1–8)	190(26.4)	68(35.8)	122(64.2)	
Secondary and above	338(46.9)	82(24.3)	256(75.7)	
Occupation				
Governmental employee	160(22.2)	42(26.3)	118(73.7)	<0.001
Private business or Merchant	346(48.0)	108 (31.2)	238(68.8)	
Farmer	148(20.6)	85 (57.4)	63 (42.6)	
Other (pensioner, driver, daily laborer, religious leader)	66(9.2)	21 (31.8)	45 (68.2)	

<https://doi.org/10.1371/journal.pone.0194681.t001>

score for each domain of societal, community, family and individual factors were significantly and independently associated with IPV in pregnancy, adjusted for age and education of woman and partner.

Ethical consideration

Ethical clearance from Jimma University College of Health Sciences, IRB (Ref No: HRPGC/305/2015) and the Norwegian Regional Ethical Committee (REK), [(Ref No: 2015/623 / REK Nord), (S1 File)] was obtained. Both of the ethical committees approved the verbal and written consent procedures. Data collection was in accordance with the recommendations of WHO Ethical Standard on Ethical and Safety Recommendations for Domestic Violence Research (WHO, 1999).

Informed written and or / verbal consent was obtained after fully informing participants about the aims and the nature of the study. Respondents were assured about the confidentiality of their response, their voluntarily participation and right to terminate at any time they want. They were also told that their care would not be affected in any way should they decide not to participate in the study.

Results

Socio-demographic characteristics of the pregnant women

Three hundred and forty four (47.8%) of the 720 participants, mean age SD (24.9±5.0), were between 15–24 years and 34.4% were first time pregnant (primi gravida) (Table 1). Over one third had been married before the age of 18 years and in an arranged marriage. The majority of the women were the sole wife (85.1%) (data not shown). One of four women reported having no education, and only 41.1% of the women reported generating income and the majority earned less than 1000 birr/month (\$45/month).

The prevalence of IPV in pregnancy

In the current pregnancy, more than one in three women (35.6%) reported experiencing IPV, of which nearly 89% of them had experienced moderate physical violence (severity score of 1–3), slapping or pushing being the most frequent incidents (62.1%) and 18% reported being hit on their abdomen (data not shown). The life time prevalence of emotional or physical abuse by partner or someone important was 80.7% and the proportion of violence during pregnancy among ever exposed was 44%. Over half of the women (56.1%) reported physical violence victimization within the last year and the majority of the perpetrators (86.4%) were

Table 2. The association (crude and adjusted odds ratio (OR) of societal, community, family and individual domain factors with IPV in pregnancy (n = 720).

Social Ecological factors	IPV in current pregnancy		Crude OR, (95% CI)	Adjusted OR, (95% CI) Model I*	Adjusted OR, (95% CI) Model II**
	Yes (256) No. (%)	No (464) No. (%)			
Societal					
Presence of strict traditional gender norms in the society (ex, women should stay at home)	235 (44.0)	299 (56.0)	6.2 (3.8,10.0)	5.2 (3.2, 8.6)	NS
Violence is used as a means to settle interpersonal conflicts in the society	184 (57.0)	139 (43.0)	6.0 (4.3,8.4)	5.1 (3.6, 7.2)	2.6 (1.7,3.9)
Violence towards women is accepted in the society	207 (51.5)	195 (48.5)	6.0 (4.1,8.4)	5.0 (3.4,7.3)	NS
The society has supportive attitudes of wife beating	197 (57.1)	148 (42.9)	7.1 (5.0,10.1)	6.3 (4.4, 9.1)	2.6 (1.7,4.2)
The society regards violence as a notion of masculinity. (ex, a real man disciplines his wife)	207 (50.7)	201 (49.3)	5.5 (3.9,7.9)	4.8 (3.3,7.0)	1.8 (1.2,2.9)
There are strict gender role differences between the two sexes in the society (ex. Cooking is a women's responsibility)	242 (42.7)	325 (57.3)	7.4 (4.2,13.1)	6.6 (3.6,11.8)	4.1 (2.2,7.8)
Community					
There are men's group that condone or legitimize men's violence in her community	193 (58.1)	139 (41.9)	6.9 (4.9,9.7)	6.1 (4.3,8.8)	3.0(2.0,4.5)
Woman feel isolated from her community	158 (55.2)	128 (44.8)	4.2 (3.1,5.9)	3.8 (2.7,5.3)	2.5 (1.7,3.7)
Women are living in a community where there is no social support for victims of violence	191 (56.8)	145 (43.2)	6.5(4.6,9.1)	5.7 (4.0,8.1)	2.6(1.7,4.0)
Most of the members of her community have low socioeconomic status or suffer financial problems	236 (45.0)	289 (55.0)	7.2 (4.4,11.7)	5.5 (3.3,9.2)	NS
There are many unemployed people in your community	239 (43.7)	308 (56.3)	7.1 (4.2,12.1)	6.3 (3.6,10.8)	3.0 (1.6,6.0)
Family/relation					
Woman consider that she has marital conflict	232 (95.9)	10(4.1)	24.8 (15.6,39.6)	21.3 (13.2,34.3)	6.7(3.9,11.5)
Household property/wealth controlled by a partner (ex, a car, money, cattle...)	210 (63.4)	121 (36.6)	12.9 (8.9,18.9)	10.8 (7.3,16.0)	2.4 (1.3,4.5)
Communication is difficult with her partner	199 (72.6)	75(27.4)	18.1 (12.3,26.6)	15.0 (10.1,22.3)	4.1 (2.6, 6.6)
Decision making in the family controlled by her partner.	205 (60.7)	133 (39.3)	1.5 (1.2,1.9)	8.6 (5.9,12.6)	NS
Individual					
Woman was abused in her childhood	232 (50.8)	225 (49.2)	10.3(6.5,16.2)	11.8 (7.3,19.2)	3.2 (1.7,6.1)
Woman witness marital violence in her childhood	241 (47.5)	266 (52.5)	12.0(6.9,20.8)	12.5(7.1,22.0)	NS
Woman had rejecting father in her childhood	45(52.9)	40(47.1)	2.3(1.4,3.6)	2.0(1.2,3.2)	NS
Partner experienced violence as a child	230 (63.9)	130 (36.1)	22.7 (14.4, 35.8)	21.0 (13.1,33.4)	4.0 (2.0,8.2)
Partner witnessed violence as a child	226 (68.4)	148 (31.6)	16.1(10.5, 24.7)	16.5 (10.5,26.0)	4.0 (2.0,8.2)
Partner had a rejecting father	48 (55.8)	38 (44.2)	2.6(1.6,4.1)	2.3 (1.4,3.7)	NS
Partner use substances (Khat/ smoking/ alcohol or all)	238 (47.8)	260 (52.2)	10.4 (6.2,17.3)	9.3(5.5,15.7)	6.0 (3.2,11.3)

(Continued)

Table 2. (Continued)

Social Ecological factors	IPV in current pregnancy		Crude OR, (95% CI)	Adjusted OR, (95% CI) Model I*	Adjusted OR, (95% CI) Model II**
	Yes (256) No. (%)	No (464) No. (%)			
Partner has mental health, or personality problems (ex, anxiety, sadness, social isolation..)	163 (81.9)	36 (18.1)	20.8 (13.6, 31.9)	18.3 (11.8,28.4)	11.7 (6.8,20.2)

Reference category is—'No' for all predictors

* Each single variable, adjusted for—age and education level of the woman and her partner

** Variables under each domain, adjusted for- age and education level of the woman and her partner; CI-confidence interval

<https://doi.org/10.1371/journal.pone.0194681.t002>

their husbands. Forced sexual activity was reported by half of the women, but only one woman was offended by a stranger.

Being isolated by intimate partner from friends and family was prevalent (40%) and more than half of the women reported fear (53.8%) or psychological abuse (51.4%) in the last one year. During incidents of IPV one in three turned to their family (32.4%) or kept silent (29.5%). The major reasons to keep silent were: not to leave children behind, feeling shame, to honour the tradition that marriage is valued, having no money and nowhere to go, and fear that husband may retaliate or even kill them (data not shown).

Using AIC and parsimony criteria of best model as described in the analysis section, the statistical inferences were made based on the traditional null-hypothesis testing (Table 2, Model II). A multivariate logistic regression model was fitted to examine significant variables under each social ecologic domain associated with IPV in pregnancy adjusted for age and education of woman and partner. Perceiving violence as a means to settle interpersonal conflicts, presence of supportive attitudes of wife beating in the society, regarding violence as an expression of masculinity, and presence of strict gender role differences in the society were significantly positively associated with IPV in pregnancy. Community related factors that significantly and

Table 3. Bivariate and multivariate logistic regression analysis of dichotomized composite scores of each social ecological domain factor associated with IPV in pregnancy (n = 720).

Factors	IPV in pregnancy		Crude OR, (95% CI)	Adjusted OR*, (95% CI)
	Yes (256) No. (%)	No (464) No. (%)		
Societal factor				
Yes	196(63.6)	112(36.4)	10.3 (7.2, 14.7)	2.1 (1.2,3.7)
No	60(14.6)	352(85.4)	1	1
Community factor				
Yes	186(69.7)	81(30.3)	12.6 (8.7, 18.1)	2.1 (1.2,3.6)
No	70(15.5)	383(84.5)	1	1
Family factor				
Yes	203(75.2)	67(24.8)	22.7 (15.2, 33.8)	5.8 (3.5,9.5)
No	53(11.8)	397(88.2)	1	1
Individual factor				
Yes	236(66.9)	117(33.1)	35.0 (21.2, 57.8)	12.2 (7.0,21.5)
No	20(5.4)	347(94.6)	1	1

* Adjusted for age and education level of the woman and her partner

CI: confidence interval

<https://doi.org/10.1371/journal.pone.0194681.t003>

positively associated with IPV in pregnancy included: the presence of groups legitimizing men's violence, feeling isolated, having no social support for victims and the presence of high unemployment.

Discussion

To our knowledge, the current study is the first in Ethiopia, if not in Africa, to explore the association of societal, community, family and individual related factors with IPV in pregnancy simultaneously. It also examined the prevalence of IPV in pregnancy in Ethiopia. The result indicated an increased prevalence of IPV associated with several factors. In recognition that no single factor could explain the complexity of why some women are at a higher risk of IPV while others are not [38, 39], we used the Social Ecologic Model, the most widely used model for understanding violence [28, 40]. Societal and community factors exhibit a strong and consistent influence on the occurrence of IPV in pregnancy coinciding with a host of earlier reported family and individual risk factors [11–15].

Women perceiving that violence is used as a means to settle interpersonal conflicts in the society had a higher likelihood of IPV in pregnancy in this study. Earlier studies have also discussed that when societies endorse violence as a strategy in conflict resolution, and some levels of conflicts are likely in marriage [21, 28, 41], makes it challenging to reject IPV. In the present study, supportive attitudes of wife beating, regarding violence as a notion of masculinity and the presence of strict gender roles in the society, were positively associated with IPV in pregnancy, and in concert with prior studies addressing these issue separately [21, 28, 42]. Our study also supported that women reporting the presence of groups that legitimize men's violence or accept wifebeating in their community, or report no social support for victims, are more likely to face increased risk of IPV in pregnancy [40, 43–45]. Women in these communities may share similar attitudes and more readily accept IPV. In support of this finding, a recent qualitative study in Nepal stated that in a culture where violence is normalized and something endured, caused women to tolerate and accept the IPV situation [46]. Another study also confirmed that when couples report tolerant attitudes of IPV they are more likely to report spousal IPV [47].

Regarding individual related factors, this study confirmed that violence foster violence and witnessing IPV in childhood increases the likelihood of violent behaviour in the next generation [13, 23, 40, 42, 48]. Partner's use of substance/s (alcohol, Khat, and/smoking), is a known and significant factor of IPV during pregnancy [4, 13, 14, 23, 40, 49–52], and enhancing if the partner also has mental health or personality problems [40, 53]. Factor related to the individual domain is the strongest in this model (Table 3), but with wide confidence intervals. This could be either due to small sample size, overlapping effect of the four factors or some other reasons which requires further investigation. In general, our study supports the notion that an ecological model of IPV, as, a combination of societal, community, family and individual related factors, can help to explain the occurrence of IPV in pregnancy [21, 28, 54, 55]. The contribution of a combination of individual, relational, community and societal factors to the risk of IPV victimization has also been emphasized in WHO and CDC reports [40, 53].

Conflicting results exist about whether IPV increases or decreases during pregnancy [19, 56, 57]. In fact, our study showed that pregnancy neither stops nor prevents IPV. The prevalence estimates of IPV during pregnancy in this study are higher than previous studies undertaken in Ethiopia [11–15], and some other African countries [4, 17, 22, 30, 58–60]. However, other studies in Africa showed nearly similar or even higher prevalence [48, 57, 61]. A possible explanation for the high prevalence in our study could be the use of translated, internationally validated AAS tools and the data collectors strife at conducting the data collection in a safe

environment that might have increased the rate of disclosure, or it could be a true increase in violence compared to prior Ethiopian studies. The contribution of keeping participants' privacy and having a safe environment while obtaining data from sensitive issues, such as IPV, to increasing the disclosure rate has also been reported in other studies [24–27]. Ethiopia, being one of the highest IPV prevalent countries, the prevailing culture considering husband and wife issues as a private matter could thereby foster a community notion of having no obligation to intervene in family matters; all these may also explain the high prevalence of IPV reported in this study.

Limitations and strength

Taking into account the complexity of factors impacting IPV in pregnancy, the simultaneous assessment of all social ecologic factors while controlling for potential confounders, the use of validated data collection tools, pretested and translated instruments to measure IPV in pregnancy, are some of the strengths of this study. The use of AIC and parsimony in selecting the best model, making inferences (good prediction) and interpret the result based on it may also lend strength.

The subject studied is very sensitive and even stigmatizing; assessment of IPV and its factors based on self-reporting might have introduced systematic errors (recall bias, non-disclosure, underreporting, and misclassification). Those who were exposed to IPV recently are more likely to report excessively, while those who were exposed a bit long ago may ignore or forget to report, which also might have introduced bias. Bias might have also been introduced due to unmeasured or poorly measured variables, confounders and interactions. The study had a cross sectional design (simultaneous collection of both exposure and outcome variables), and the setting is institutional based, we can neither claim causality nor generalizability, and calls for future prospective longitudinal study.

Conclusion

Despite these limitations, this study provides valuable information and contributes to a better understanding of the magnitude of IPV in pregnancy and its multifaceted contributing factors in Ethiopia. The importance of community and societal factors in IPV warrant a public debate about IPV. Male involvement is imperative as impact of male norms related to and childhood experience of IPV are significant contributors to the risk of future IPV, as well as demonstrated in the literature, adverse events like chronic diseases and increased allostatic load [62]. As IPV also is a well-established risk factor for adverse pregnancy outcome [12, 17], the Ethiopian Ministry of Health could include IPV screening tools as an essential part of routine antenatal care. This study will also inform the efforts needed in achieving the new global health goals, specifically related to; [(Sustainable Development Goal] SDG target 3.1 and 3.2 (maternal and child survival); SDG target 5.2, (Eliminate all forms of violence against all women and girls), [63]. Achieving these SDG targets require the attention of a range of professionals and agencies working in the area of clinical, epidemiological, anthropological, health policy and health systems.

In conclusion, our study, while maintaining that it is multi-factorial [28, 40], IPV in pregnancy is a common experience among women seeking antenatal care, and even more common than reported in many other studies, but within the range of other sub-Saharan African countries [4]. Given the high prevalence of IPV in Ethiopia, concurrent with high maternal and neonatal mortality rates [64, 65], the current study is relevant as the results from this study could contribute to the development of national policies or interventions to reduce pregnancy related IPV.

Supporting information

S1 File. REK Ethical clearance letter.
(PDF)

S2 File. The experience of intimate partner violence.
(PDF)

Acknowledgments

The Jimma town Health Bureau, Institutions and Jimma University Specialized Hospital (JUSH) administrators, Midwives and Nurses working at ANC, data collectors, supervisors, clients participated in this study all deserve acknowledgments for their collaboration. We are also grateful to colleagues for their valuable comments.

Author Contributions

Conceptualization: Bosena Tebeje Gashaw, Berit Schei, Jeanette H. Magnus.

Data curation: Bosena Tebeje Gashaw.

Formal analysis: Bosena Tebeje Gashaw, Berit Schei, Jeanette H. Magnus.

Funding acquisition: Bosena Tebeje Gashaw.

Investigation: Bosena Tebeje Gashaw, Berit Schei, Jeanette H. Magnus.

Methodology: Bosena Tebeje Gashaw, Berit Schei, Jeanette H. Magnus.

Supervision: Berit Schei, Jeanette H. Magnus.

Validation: Bosena Tebeje Gashaw, Berit Schei, Jeanette H. Magnus.

Visualization: Bosena Tebeje Gashaw.

Writing – original draft: Bosena Tebeje Gashaw.

Writing – review & editing: Bosena Tebeje Gashaw, Berit Schei, Jeanette H. Magnus.

References

1. Campbell JC. Health consequences of intimate partner violence. *The Lancet*. 2002; 359(9314):1331–6.
2. Daoud N, Urquia ML, O'Campo P, Heaman M, Janssen PA, Smylie J, et al. Prevalence of abuse and violence before, during, and after pregnancy in a national sample of Canadian women. *American journal of public health*. 2012; 102(10):1893–901. <https://doi.org/10.2105/AJPH.2012.300843> PMID: [22897526](https://pubmed.ncbi.nlm.nih.gov/22897526/)
3. Nasir K, Hyder AA. Violence against pregnant women in developing countries. *The European Journal of Public Health*. 2003; 13(2):105–7. PMID: [12803407](https://pubmed.ncbi.nlm.nih.gov/12803407/)
4. Shamu S, Abrahams N, Temmerman M, Musekiwa A, Zarowsky C. A systematic review of African studies on intimate partner violence against pregnant women: prevalence and risk factors. *PloS one*. 2011; 6(3):e17591. <https://doi.org/10.1371/journal.pone.0017591> PMID: [21408120](https://pubmed.ncbi.nlm.nih.gov/21408120/)
5. 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; 368(9543):1260–9. [https://doi.org/10.1016/S0140-6736\(06\)69523-8](https://doi.org/10.1016/S0140-6736(06)69523-8) PMID: [17027732](https://pubmed.ncbi.nlm.nih.gov/17027732/)
6. Abeya SG, Afework MF, Yalew AW. Intimate partner violence against women in western Ethiopia: prevalence, patterns, and associated factors. *BMC public health*. 2011; 11:913. <https://doi.org/10.1186/1471-2458-11-913> PMID: [22151213](https://pubmed.ncbi.nlm.nih.gov/22151213/)
7. R Y. Violence Against Women in Ethiopia: The Case of . . . Nov 25, 2014. Ailble at:<https://kweschn.wordpress.com/.../violence-against-women-in-ethiopia-th...>

8. Deribe K, Beyene BK, Tolla A, Memiah P, Biadgilign S, Amberbir A. Magnitude and correlates of intimate partner violence against women and its outcome in Southwest Ethiopia. *PloS one*. 2012; 7(4): e36189. <https://doi.org/10.1371/journal.pone.0036189> PMID: [22558376](https://pubmed.ncbi.nlm.nih.gov/22558376/)
9. Dibaba Y. Prevalence and correlates of intimate partner physical violence against women in Kofale District, Ethiopia. *Tropical doctor*. 2008; 38(1):52–4. <https://doi.org/10.1258/td.2007.060190> PMID: [18302872](https://pubmed.ncbi.nlm.nih.gov/18302872/)
10. Semahegn A, Mengistie B. Domestic violence against women and associated factors in Ethiopia; systematic review. *Reproductive health*. 2015; 12:78. <https://doi.org/10.1186/s12978-015-0072-1> PMID: [26319026](https://pubmed.ncbi.nlm.nih.gov/26319026/)
11. Abebe Abate B, Admassu Wossen B, Tilahun Degfie T. Determinants of intimate partner violence during pregnancy among married women in Abay Chomen district, Western Ethiopia: a community based cross sectional study. *BMC women's health*. 2016; 16:16. <https://doi.org/10.1186/s12905-016-0294-6> PMID: [26960962](https://pubmed.ncbi.nlm.nih.gov/26960962/)
12. Demelash H, Nigatu D, Gashaw K. A Case-Control Study on Intimate Partner Violence during Pregnancy and Low Birth Weight, Southeast Ethiopia. *Obstetrics and gynecology international*. 2015; 2015:394875. <https://doi.org/10.1155/2015/394875> PMID: [26798345](https://pubmed.ncbi.nlm.nih.gov/26798345/)
13. Yimer T, Gobena T, Egata G, Mellie H. Magnitude of domestic violence and associated factors among pregnant women in Hulet Ejju Enessie District, Northwest Ethiopia. *Advances in public health*. 2014; 2014.
14. Laelago T, Belachew T, Tamrat M. Prevalence and Associated Factors of Intimate Partner Violence during Pregnancy among Recently Delivered Women in Public Health Facilities of Hossana Town, Hadiya Zone, Southern Ethiopia. *Open Access Library Journal*. 2014; 1(07):1.
15. Gebrezgi BH, Badi MB, Cherkose EA, Weldehaweria NB. Factors associated with intimate partner physical violence among women attending antenatal care in Shire Endaselassie town, Tigray, northern Ethiopia: a cross-sectional study, July 2015. *Reproductive health*. 2017; 14(1):76. <https://doi.org/10.1186/s12978-017-0337-y> PMID: [28646921](https://pubmed.ncbi.nlm.nih.gov/28646921/)
16. WHO. Intimate partner violence during pregnancy. WHO, Information sheet. 2011. http://whqlibdoc.who.int/hq/2011/WHO_RHR_11.35_eng.pdf.
17. Sigalla GN, Mushi D, Meyrowitsch DW, Manongi R, Rogathi JJ, Gammeltoft T, et al. Intimate partner violence during pregnancy and its association with preterm birth and low birth weight in Tanzania: A prospective cohort study. *PloS one*. 2017; 12(2):e0172540. <https://doi.org/10.1371/journal.pone.0172540> PMID: [28235031](https://pubmed.ncbi.nlm.nih.gov/28235031/)
18. Shadigian EM, Bauer ST. Pregnancy-associated death: a qualitative systematic review of homicide and suicide. *Obstetrical & gynecological survey*. 2005; 60(3):183–90.
19. Jasinski JL. Trauma V, and Abuse. *Pregnancy and domestic violence: a review of the literature*. 2004, 5(1):47–64.
20. Devries KM, Kishor S, Johnson H, Stöckl H, Bacchus LJ, Garcia-Moreno C, et al. Intimate partner violence during pregnancy: analysis of prevalence data from 19 countries. *Reproductive health matters*. 2010; 18(36):158–70. [https://doi.org/10.1016/S0968-8080\(10\)36533-5](https://doi.org/10.1016/S0968-8080(10)36533-5) PMID: [21111360](https://pubmed.ncbi.nlm.nih.gov/21111360/)
21. Jewkes R. Intimate partner violence: causes and prevention. *Lancet*. 2002; 359(9315):1423–9. [https://doi.org/10.1016/S0140-6736\(02\)08357-5](https://doi.org/10.1016/S0140-6736(02)08357-5) PMID: [11978358](https://pubmed.ncbi.nlm.nih.gov/11978358/)
22. Shamu S, Abrahams N, Zarowsky C, Shefer T, Temmerman M. Intimate partner violence during pregnancy in Zimbabwe: a cross-sectional study of prevalence, predictors and associations with HIV. *Tropical medicine & international health: TM & IH*. 2013; 18(6):696–711.
23. Makayoto LA, Omolo J, Kamweya AM, Harder VS, Mutai J. Prevalence and associated factors of intimate partner violence among pregnant women attending Kisumu District Hospital, Kenya. *Maternal and child health journal*. 2013; 17(3):441–7. <https://doi.org/10.1007/s10995-012-1015-x> PMID: [22569943](https://pubmed.ncbi.nlm.nih.gov/22569943/)
24. Deshpande NA, Lewis-O'Connor A. Screening for Intimate Partner Violence During Pregnancy. *Reviews in obstetrics and gynecology*. 2013; 6(3–4):141. PMID: [24920977](https://pubmed.ncbi.nlm.nih.gov/24920977/)
25. Rabin RF, Jennings JM, Campbell JC, Bair-Merritt MH. Intimate partner violence screening tools: a systematic review. *American journal of preventive medicine*. 2009; 36(5):439–45.e4. <https://doi.org/10.1016/j.amepre.2009.01.024> PMID: [19362697](https://pubmed.ncbi.nlm.nih.gov/19362697/)
26. McFarlane J, Parker B, Soeken K, Bullock L. Assessing for abuse during pregnancy: severity and frequency of injuries and associated entry into prenatal care. *Jama*. 1992; 267(23):3176–8. PMID: [1593739](https://pubmed.ncbi.nlm.nih.gov/1593739/)
27. Ellsberg MC, Heise L, Organization WH. *Researching violence against women: practical guidelines for researchers and activists*. 2005.
28. Heise LL. Violence against women an integrated, ecological framework. *Violence against women*. 1998; 4(3):262–90. <https://doi.org/10.1177/1077801298004003002> PMID: [12296014](https://pubmed.ncbi.nlm.nih.gov/12296014/)

29. Martz E. Enough is Enough! Handling Multicollinearity in Regression Analysis. Retrieved. 2013; 6 (14):2014.
30. Rurangirwa AA, Mogren I, Ntaganira J, Krantz G. Intimate partner violence among pregnant women in Rwanda, its associated risk factors and relationship to ANC services attendance: a population-based study. *BMJ open*. 2017; 7(2):e013155. <https://doi.org/10.1136/bmjopen-2016-013155> PMID: [28399509](https://pubmed.ncbi.nlm.nih.gov/28399509/)
31. Ho R. Handbook of univariate and multivariate data analysis and interpretation with SPSS: CRC Press; 2006.
32. Royston P, Sauerbrei W. *Multivariable Model—Building: A Pragmatic Approach to Regression Analysis based on Fractional Polynomials for Modelling Continuous Variables*: Wiley; 2008.
33. Agresti A. Building and applying logistic regression models. *Categorical Data Analysis*, Second Edition. 2003:211–66.
34. Symonds MR, Moussalli A. A brief guide to model selection, multimodel inference and model averaging in behavioural ecology using Akaike's information criterion. *Behavioral Ecology and Sociobiology*. 2011; 65(1):13–21.
35. Snipes M, Taylor DC. Model selection and Akaike Information Criteria: An example from wine ratings and prices. *Wine Economics and Policy*. 2014; 3(1):3–9.
36. Burnham KP, Anderson DR. *Model Selection and Inference: A Practical Information-Theoretic Approach*: Springer New York; 2013.
37. Burnham KP, Anderson DR. *Model Selection and Multimodel Inference: A Practical Information-Theoretic Approach*: Springer New York; 2003.
38. Natarajan M. *Domestic Violence: The Five Big Questions*: Taylor & Francis; 2017.
39. WHO. Violence against women: Intimate partner and sexual violence against women. Fact sheet N°239 2014. www.who.int/mediacentre/factsheets/fs239/en/.
40. Organization WH. Understanding and addressing violence against women: Intimate partner violence 2012. <http://www.who.int/iris/handle/10665/77432>.
41. Yigzaw T, Berhane Y, Deyessa N, Kaba M. Perceptions and attitude towards violence against women by their spouses: A qualitative study in Northwest Ethiopia. *Ethiopian Journal of Health Development*. 2010; 24(1).
42. Abramsky T, Watts CH, Garcia-Moreno C, Devries K, Kiss L, Ellsberg M, et al. What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. *BMC public health*. 2011; 11(1):109.
43. Antai D, Adaji S. Community-level influences on women's experience of intimate partner violence and terminated pregnancy in Nigeria: a multilevel analysis. *BMC pregnancy and childbirth*. 2012; 12(1):128.
44. Khawaja M, Linos N, El-Roueiheb Z. Attitudes of men and women towards wife beating: Findings from Palestinian refugee camps in Jordan. *Journal of family violence*. 2008; 23(3):211–8.
45. Koenig MA, Stephenson R, Ahmed S, Jejeebhoy SJ, Campbell J. Individual and contextual determinants of domestic violence in North India. *American journal of public health*. 2006; 96(1):132–8. <https://doi.org/10.2105/AJPH.2004.050872> PMID: [16317213](https://pubmed.ncbi.nlm.nih.gov/16317213/)
46. Pun KD, Infanti JJ, Koju R, Schei B, Darj E. Community perceptions on domestic violence against pregnant women in Nepal: a qualitative study. *Global health action*. 2016; 9:31964. <https://doi.org/10.3402/gha.v9.31964> PMID: [27882865](https://pubmed.ncbi.nlm.nih.gov/27882865/)
47. Uthman OA, Moradi T, Lawoko S. Are individual and community acceptance and witnessing of intimate partner violence related to its occurrence? Multilevel structural equation model. *PloS one*. 2011; 6(12): e27738. <https://doi.org/10.1371/journal.pone.0027738> PMID: [22194791](https://pubmed.ncbi.nlm.nih.gov/22194791/)
48. Kaye D, Mirembe F, Bantebya G. Risk factors, nature and severity of domestic violence among women attending antenatal clinic in Mulago Hospital, Kampala, Uganda. *The Central African journal of medicine*. 2001; 48(5–6):64–8.
49. Li Q, Kirby RS, Sigler RT, Hwang SS, Lagory ME, Goldenberg RL. A multilevel analysis of individual, household, and neighborhood correlates of intimate partner violence among low-income pregnant women in Jefferson county, Alabama. *American journal of public health*. 2010; 100(3):531–9. <https://doi.org/10.2105/AJPH.2008.151159> PMID: [19696385](https://pubmed.ncbi.nlm.nih.gov/19696385/)
50. Shamu S, Abrahams N, Zarowsky C, Shefer T, Temmerman M. Intimate partner violence during pregnancy in Zimbabwe: a cross-sectional study of prevalence, predictors and associations with HIV. *Tropical Medicine & International Health*. 2013; 18(6):696–711.
51. Ibrahim ZM, Sayed Ahmed WA, El-Hamid SA, Hagra AM. Intimate partner violence among Egyptian pregnant women: incidence, risk factors, and adverse maternal and fetal outcomes. *Clinical and experimental obstetrics & gynecology*. 2015; 42(2):212–9.

52. Ntaganira J, Muula AS, Siziya S, Stoskopf C, Rudatsikira E. Factors associated with intimate partner violence among pregnant rural women in Rwanda. *Rural and remote health*. 2009; 9(3):1153. PMID: [19719363](https://pubmed.ncbi.nlm.nih.gov/19719363/)
53. CDC. Risk and Protective Factors Intimate Partner Violence 2016. <https://www.cdc.gov/violenceprevention/intimatepartnerviolence/riskprotectivefactors>.
54. WHO. Intimate partner violence during pregnancy. WHO Is. Intimate partner violence during pregnancy. WHO, Information sheet 2011. http://whqlibdoc.who.int/hq/2011/WHO_RHR_11.35_eng.pdf.
55. National Center for Injury Prevention and Control DoVPC. The Social-Ecological Model: A Framework for Prevention 2014. <http://www.cdc.gov/ViolencePrevention/overview/social-ecologicalmodel.html>.
56. Karaoglu L, Celbis O, Ercan C, Ilgar M, Pehlivan E, Gunes G, et al. Physical, emotional and sexual violence during pregnancy in Malatya, Turkey. *The European Journal of Public Health*. 2006; 16(2):149–56. <https://doi.org/10.1093/eurpub/cki161> PMID: [16157613](https://pubmed.ncbi.nlm.nih.gov/16157613/)
57. Idoko P, Ogbé E, Jallow O, Ocheke A. Burden of intimate partner violence in The Gambia—a cross sectional study of pregnant women. *Reproductive health*. 2015; 12(1):1.
58. Gyuse AN, Ushie AP. Pattern of domestic violence among pregnant women in Jos, Nigeria. *South African Family Practice*. 2009; 51(4):343–5.
59. Awusi V, Okeleke V, Ayanwu B. Prevalence of domestic violence during pregnancy in Oleh, a suburban Isoko Community, Delta State, Nigeria. *Benin Journal of Postgraduate Medicine*. 2009; 11(1).
60. Mbokota M, Moodley J. Domestic abuse—an antenatal survey at King Edward VIII Hospital, Durban. *South African Medical Journal*. 2003; 93(6):455–7. PMID: [12916387](https://pubmed.ncbi.nlm.nih.gov/12916387/)
61. Hoque ME, Hoque M, Kader SB. Prevalence and experience of domestic violence among rural pregnant women in KwaZulu-Natal, South Africa. *Southern African Journal of Epidemiology and Infection*. 2009; 24(4):34–7.
62. Crofford LJ. Violence, stress, and somatic syndromes. *Trauma, Violence, & Abuse*. 2007; 8(3):299–313.
63. Garcia-Moreno C, Amin A. The sustainable development goals, violence and women’s and children’s health. *Bulletin of the World Health Organization*. 2016; 94(5):396–7. <https://doi.org/10.2471/BLT.16.172205> PMID: [27147771](https://pubmed.ncbi.nlm.nih.gov/27147771/)
64. Yaya Y, Eide KT, Norheim OF, Lindtjørn B. Maternal and neonatal mortality in south-west Ethiopia: estimates and socio-economic inequality. *PloS one*. 2014; 9(4):e96294. <https://doi.org/10.1371/journal.pone.0096294> PMID: [24787694](https://pubmed.ncbi.nlm.nih.gov/24787694/)
65. Berhan Y, Berhan A. Review of maternal mortality in Ethiopia: a story of the past 30 years. *Ethiopian journal of health sciences*. 2014; 24 Suppl:3–14.



Contents lists available at ScienceDirect

Women and Birth

journal homepage: www.elsevier.com/locate/wombi

Intimate partner violence and late entry into antenatal care in Ethiopia

Bosena Tebeje Gashaw^{a,b,*}, Jeanette H. Magnus^{b,c}, Berit Schei^{d,e}^a College of Health Sciences, Jimma University, Jimma, Ethiopia^b Faculty of Medicine, University of Oslo, Norway^c Department of Global Community Health and Behavioral Sciences, Tulane School of Public Health and Tropical Medicine, New Orleans, US^d Department of Public Health and Nursing, Faculty of Medicine and Health Sciences, University of Science and Technology, Trondheim, Norway^e Department of Obstetrics and Gynaecology, St. Olav's Hospital, Trondheim University Hospital, Trondheim, Norway

ARTICLE INFO

Article history:

Received 9 July 2018

Received in revised form 14 December 2018

Accepted 14 December 2018

Keywords:

Antenatal care

Late antenatal care

Parity

Intimate partner violence

Ethiopia

ABSTRACT

Background: Utilization of maternal health care services and timely initiation of antenatal care (ANC) positively influence pregnancy outcomes. The prevalence of intimate partner violence (IPV) during pregnancy is very high in Ethiopia, but we have limited knowledge on the link between IPV and initiation of ANC.

Aim: To determine the association between IPV and late entry into ANC.

Methods: A cross sectional study was conducted among pregnant women attending ANC at the governmental health institutions. A total of 720 pregnant women were interviewed by five trained nurses or midwives, using standardized and pretested questionnaire. Descriptive, bivariate and multivariate logistic regression and parity-stratified analyses were employed.

Findings: Over half of the pregnant women (51.8%; 95% CI = 48.1, 55.5) entered ANC late (> 16 weeks). Controlling for demographic, behavioural and reproductive health related variables, among multiparous women, any lifetime emotional or physical abuse was associated with late ANC [Adjusted odds ratio (AOR) = 2.28; 95% CI = 1.18, 4.39]. However, reporting recent experience of partner sexual violence was associated with late ANC in the full sample (AOR = 1.55; 95% CI = 1.09, 2.19).

Conclusion: The proportion of pregnant women entering ANC late is high in Ethiopia and associated with prior and recent experience of IPV in the current pregnancy, especially among multiparous women. Efforts for preventing IPV in pregnancy are needed to ensure that all pregnant women initiate ANC early in pregnancy. Aims of improving the health sector responses should include training health care workers on IPV that could facilitate ongoing screening, awareness creation, and women's social support networks.

© 2018 The Authors. Published by Elsevier Ltd on behalf of Australian College of Midwives. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Statement of significance

Problem or issue

Late initiation of ANC is prevalent in Ethiopia. Early ANC visits are paramount for ensuring optimal health outcomes for women and their infants.

What already known

Internationally, late ANC initiation has been linked with IPV but limited is known about the contribution of IPV on the initiation of ANC in Sub Saharan Africa or Ethiopia.

What this paper adds

Lifetime emotional or physical abuse and recent sexual IPV experiences are linked to a late initiation of ANC, especially among multiparous women. This information could guide future interventions aimed at improving ANC service utilization. Training midwives and nurses working at ANC clinics in screening for IPV should be considered.

1. Introduction

Antenatal care (ANC) is a key service to ensure maternal and child survival.¹ It provides opportunities to identify conditions that increase the risks of adverse pregnancy outcomes and instigate appropriate interventions.^{2,3} The health of the newborn and infant survival is also closely linked to the care mother receives during the pregnancy and childbirth.^{1,4} More importantly, an early ANC visit

* Corresponding author at: Jimma University, School of Nursing and Midwifery, Po. box 1355, Ethiopia.

E-mail address: bosenatebeje@yahoo.co.uk (B.T. Gashaw).

gives a chance to provide screening and tests that are effective early in the pregnancy,^{1,5} as well as detecting and managing direct and indirect obstetric complications,⁶ responsible for costing the life of women and their babies.

Studies on the prevalence of timely entry into ANC demonstrate considerable impact of income and differences between geographical regions. A recent systematic study assessing the ANC coverage at the global and regional level demonstrated significant disparities between low-income countries (24%) compared to high-income countries (82%).⁵ Timely ANC visit has also been shown to predict the provision of package of interventions recommended by WHO.^{1,6} Recent studies also noted that women who visit ANC early, were more likely to receive the full range of services recommended by WHO.^{7,8}

The 2016 WHO guideline, endorses a minimum of eight ANC visits,¹ but has not yet been adopted in Ethiopia that still follows the 2002 WHO ANC model, known as focused ANC (FANC). The FANC model recommends that women in developing countries with uncomplicated pregnancies should receive four ANC visits during pregnancy initiated as early as possible, preferably before sixteen weeks of gestation. In Ethiopia, maternal health care, including ANC service utilization is far behind its targets. According to the 2016 Ethiopian Demographic and Health Survey (EDHS), 62% of pregnant women received antenatal care at least once, 32% had at least 4 ANC visits, only 28% childbirths attended by a skilled care provider and an additional 26% gave birth at a health institution.⁹

Earlier studies conducted in Ethiopia document a varying prevalence rate of ANC utilization and timely initiation across the country. Appropriate timing of the first ANC visit was 42% in Addis Ababa,¹⁰ and 47.4% in Gondar,¹¹ in the Northern part of Ethiopia. In Arba Minch, the Southern part of Ethiopia, only 17.4% of women initiated ANC prior to 16 weeks' gestation.¹²

When discussing barriers to timely ANC initiation, prior studies in Ethiopia mainly address socio-demographic and obstetric or reproductive health related factors including older age, low education, rural residence, unplanned pregnancy, multiparity and lack of knowledge about the time of ANC initiation.^{13–15} Compared to other low income countries, Ethiopia lagged behind in achieving its millennium development goals (MDGs), specifically, "Goal 5" reducing maternal death by three quarters.¹⁶ It could have reduced its maternal mortality rate from 412 per 100,000 live births, to 267 per 100,000 live births by 2015.⁹ However, recent Ethiopian interventions such as increasing the midwifery workforce have focused on accelerating progress on maternal health (SDG 3.1) and are envisaged to achieve the sustainable development goal (SDG) targets in reducing maternal mortality by 2030.¹⁷

Several studies undertaken in developed countries,^{18–20} demonstrate a link between exposure to intimate partner violence (IPV) and delayed entry to ANC. Intimate partner violence refers to a behavior by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse and controlling behaviors.²¹ A broad range of studies demonstrate that IPV in pregnancy is common,^{22–24} with adverse health outcomes affecting both the infant and the mother.^{22,25–27} The 2010 Global Burden of Disease (GBD) study of 21 regions identified that the highest prevalence of IPV in central sub-Saharan Africa, where 65.6% of ever-partnered women have experienced IPV. However, all the regions of sub-Saharan Africa are above the global average of 26.4%.²⁸ The 2004 revised Criminal Code of the Federal Democratic Republic of Ethiopia includes new and revised provisions pertinent to protect women from domestic violence. Nevertheless, the overall occurrence of IPV in general and during pregnancy in particular is still very high in Ethiopia,^{24,29–31} and eradication of violence against women is a precondition to achieving the SDGs.³² There are a few

studies verifying a link between IPV and late entry to ANC in low-income countries.^{33–36} When initiating the current study, no former investigation between later ANC and IPV could be identified in Ethiopia. Therefore, the aim of this study is to assess whether IPV is a risk factor for late entry into ANC for pregnant women in Ethiopia.

2. Methods

2.1. Study design and setting

Pregnant women, estimated to be at or after 24 weeks of gestational age, not seriously sick and willing to participate, were recruited consecutively, using a cross sectional study design. The study was conducted during an antenatal care visit at all three health centres and two hospitals in Jimma town. Jimma town has 177,900 multi-ethnic inhabitants [Central Statistics Agency (CSA), 2015]. The town is located in Oromiya regional state, 352 km south west of the capital city, Addis Ababa, Ethiopia. Maternal and child health care services (ANC, maternity services, postnatal care, family planning, vaccination . . . etc) are given freely at these public institutions. The pregnant women coming for ANC are from Jimma town or the nearby rural areas. Most of the women in the area are homemakers and do not generate income. To visit the ANC clinic, the poor come on foot, while others use public transportation.

2.2. Sample size

The sample size calculation was aimed at assessing the prevalence of IPV.³⁷ We assumed a 50% prevalence of IPV based on the average prevalence of previous IPV studies in Ethiopia.^{29,35} With a 95% confidence interval, 4% precision/error tolerated, and a 20% non-response rate. In order to recruit the estimated sample size of 720, the estimated numbers needed to recruit at each study facilities was based on their average monthly client flow. To assess differences in IPV between women attending late in ANC and women attending at an appropriate time was a secondary aim in our study, and no separate power calculation was estimated.

2.3. Measurements

Several socio-demographic and reproductive health variables that have been reported in the literature to be statistically or empirically associated with IPV and late entry into ANC^{13,15,20,29,33,35,36} were included in this study. These consisted of: age (categorised as: 15–24 years, 25–34 years, or 35–45 years); current residence (Rural or Urban); age at first marriage (<18 years, ≥18 years of age). Marital relation (categorized as Monogamy or Polygamy); type of marital arrangement (arranged by family or by choice); marital duration, or duration of union (Less than 1 year, 2–4 years, 5–10 years, more than 10 years). The woman's educational status was identified and categorized, according to the Ethiopian education system [No education, including those who either could not read and write, or could only read and write without having any formal education), completed primary level (1–8 grade), secondary (9–12 grade), or >12 grade] which was collapsed for analysis into three levels as: [No education, Primary level (1–8 grade), Secondary and above]. Similarly, whether the woman generated any income was categorized as (Yes/No) and the partner's educational status was assessed in the same manner as for the woman, while the age of the partner was dichotomized as (20–35 years or 35+ years)

2.3.1. Reproductive health variables

Information on the total number of pregnancies (gravida), (one, two, three or more), parity (nulliparous, multiparous), number of

living children (none, 1–2, ≥ 3). Information on entry into ANC, was taken from the ANC records [Timely ANC entry (the date of the first ANC visit at 16 weeks of gestation or less) or late ANC entry (after 16 weeks of gestation)]. The gestational age was estimated by the Midwife/Nurse based on the woman's account of her last normal menstrual period (LNMP), the clinical assessment and a fundal height measurement. Women were also asked, whether their current pregnancy was planned or wanted, and the responses were classified as either planned and/or wanted Vs unplanned and/or unwanted. The HIV status of women was tested, whether the women were reactive or not; presence of medical and/or obstetrical problems during the current pregnancy [(i.e., diabetes mellitus, cardiac disease, hypertension, anaemia, pre-eclampsia, and or vaginal bleeding (categorized as, Yes or No)]. The responses to questions about the woman's relationship with the current partner was categorized as trusting, supportive and/or respectful, or makes her anxious and/or feeling disrespected; and whether the woman used substances [(alcohol, Khat and/cigarette smoking) during the current pregnancy responded as (Yes or No)]. Khat is a fresh green leaf chewed for its stimulating effects, but it has narcotic property. It is cultivated in many parts of Ethiopia, its use is increasing and not prohibited.^{38,39}

2.3.2. Intimate partner violence (exposure) variables

IPV was measured using the Abuse Assessment Screening (AAS) tool. AAS has a sensitivity of 93–94% and specificity 55–99%,⁴⁰ and is one of the most valid and widely used IPV screening tool in the pregnant

population, demonstrating high detection rates of battering, both before and during pregnancy, beyond standard patient interview.^{41–43} Using this tool, a woman was coded as having experienced any life time emotional or physical abuse if she reported having ever been emotionally or physically abused by a partner or someone important to her. If the different types of partner violence had occurred within the last year, we grouped it as “recent IPV”. If the women had ever been hit, slapped, kicked, or otherwise physically hurt by someone within the last year, was defined as recent physical violence, and if forced to have sexual activities within the last year, as recent sexual violence. If she had been insulted, belittled, constantly humiliated, intimidated, threatened of being harmed, or threatened by the partner (that he would take away her children (recent psychological violence)), or been isolated from family and friends, or experiencing monitoring of movements, restricted access to financial resources, or restricted from employment, and/or education or medical care, this was defined as recent partner controlling behaviour. If the women were reporting having been slapped, kicked, or otherwise physically hurt so far during current pregnancy, it was coded as current physical violence. The responses were coded as Yes or No for each, and if they reported Yes, they were asked by who (husband, ex-husband, boyfriend, stranger, in-laws) and if the perpetrators were husband, ex-husband, or boyfriend, it was coded as an IPV.

2.4. Procedures

The standardized and validated abuse assessment screening (AAS) tool developed by the Nursing Research Consortium on

Table 1
Socio-demographic and lifestyle characteristics of pregnant Ethiopian women and their partner and entry into Antenatal care, N = 720.

Variables	Entry into antenatal care	
	Timely 347(48.2%)	Late 373 (51.8%)
Woman		
Age in years	No.(%)	No.(%)
15–24, n = 344	159(46.2)	185(53.8)
25–34, n = 334	172(51.5)	162(48.5)
35–45, n = 42	16(38.1)	26(61.9)
Educational status		
No education, n = 230	109(47.4)	121(52.6)
Primary level (1–8 grade), n = 227	111(48.9)	116(51.1)
Secondary and above, n = 263	127(48.3)	136(51.7)
Residence		
Urban, n = 551	269(48.8)	282(51.2)
Rural n = 169	78(46.2)	91(53.8)
Age at first marriage		
Less than 18 years, n = 255	123(48.2)	132(51.8)
18 or more years, n = 465	224(48.2)	241(51.8)
Relationship with her partner		
Trusting, supportive and or respectful, n = 436	127(44.7)	157(55.3)
Makes her anxious, disrespectful and/or constantly threatening, n = 284	220(50.5)	216(49.5)
History of substance use		
Yes, n = 43	21(48.8)	22(51.2)
No, n = 677	326(48.2)	351(51.8)
Marital duration		
Less than 1 year, n = 135	55(40.7)	80(59.3)
2–4 years, n = 241	124(51.5)	117(48.5)
5–10 years, n = 239	119(49.8)	120(50.2)
More than 10 years, n = 105	49(46.7)	56(53.3)
Partner		
Age in years		
20–35, n = 446	215(48.2)	231(51.8)
35 and above, n = 274	132(48.2)	142(51.8)
Educational status ^a		
No education, n = 192	104(54.2)	88(45.8)
Primary level (1–8 grade), n = 190	77(40.5)	113(59.5)
Secondary and above, n = 338	166(49.1)	172(50.9)
No. of wives		
One, n = 613	294(47.9)	319(52.1)
Two or more, n = 107	53(49.5)	54(50.5)

^a $p < 0.05$ using Pearson χ^2 .

Violence,^{40–42} and the socio-demographic and reproductive health related variables adapted from studies in similar settings in Africa,^{12,13,29,44} were used to collect the data. The questionnaire was translated from English language to Amharic and Afan Oromo by a translator and back-translated to English by a second translator to ensure consistency. Pre-test covered a 5% sample of pregnant women attending institutions not included in the study. Minor modifications were made to the AAS tool in order to capture the different types of IPV in behavioural terms (for instance, psychological violence and controlling behaviour were added). The data collection was from November 2015 to March 30, 2016, by five female midwives/nurses working at the respective institutions, fluent in both languages (Afan Oromo and Amharic), using face-to-face interview. Some information including: para, gravida, HIV status, date of ANC entry, gestational age and presence of any medical or obstetrical complications were abstracted from the ANC medical records. A three day training was given for the data collectors by the principal investigator (PI), (BTG) and assistants on how to interview, and handling ethical issues including giving information for victims, such as where they can get assistance, maintaining confidentiality and privacy, using a standardized training manual. Regular supervision was given during data collection by the PI (BTG) and two research assistants.

2.5. Data analysis

The statistical program used was SPSS version 20.0 (Armonk, NY: IBM Corp). Descriptive statistics were used to assess the socio-demographic and obstetric/reproductive health characteristics of the pregnant women. A Chi square test was used to assess differences in the socio-demographic and obstetric/reproductive health variables and time of entry to ANC visits. Odds ratios (OR), with 95% confidence intervals (CIs) were estimated to assess the effect size. The association between IPV subtypes and late initiation of ANC were adjusted for potential demographic, behavioural and reproductive health related confounders. Stratified analysis based on parity was also conducted. The comparison group for all analyses were women not reporting any history of IPV. We evaluated multi-collinearity of the variables by auditing the variance inflation factors (VIFs), and we found no evidence of this problem in the collinearity diagnostics (VIF is <2.0 for all models).

2.6. Ethical consideration

This study was evaluated by the relevant Ethics Committees and granted Ethical Clearance: IRB, (Ref No: HRPGC/305/2015) and (Ref No: 2015/623/REK Nord). Permission to carry out the study was also obtained from the institutions' administrators. Informed written and/or verbal consent of the participants was obtained before the data collection. Data collection was in accordance with the ethical standards of the Helsinki declaration, WHO Ethical Standard on Ethical and Safety Recommendations for Domestic Violence Research (WHO, 1999), and the national and institutional research committee.

3. Results

3.1. Socio-demographic characteristics of the pregnant women

A total of 720 pregnant women, with a mean age of 25 (± 5) years, participated. Their partners were reported to have a mean age of 33 (± 7) years. With regard to educational status, 32% and 27% of the women and men, respectively, had no education. Over one third (36.5%) of the women were in an arranged marriage, and 61% of the women reported a trusting, supportive and/or respectful relationship. Over one third (35.4%) had experienced early marriage, before the age of 18 years, and 15% were in a polygamous relationship. Most (54%) women from rural and 51% from urban areas initiated ANC late (Table 1). There was no evidence of an association between socio-demographic variables and entry into ANC except for partner's level of education ($X^2 = 7.33$; p-value = 0.02).

3.2. Reproductive health history and late entry into antenatal care

The majority of women (65.6%) were multi-gravida and multiparous (66%). Nearly one-third, (27%), of the women reported that their current pregnancy was an unplanned/unwanted pregnancy, and 3.3% were HIV positive. Among all, more than half (51.8%) of the women entered ANC late. Proportionally, more women reporting unplanned pregnancy (57%) entered into prenatal care late compared to those with a planned pregnancy (50%), but this did not reach statistical significance (Table 2).

Table 2
Obstetrical and reproductive health history of pregnant Ethiopian women and entry into Antenatal care (ANC), N= 720.

Variables	Entry into antenatal care	
	Timely N = 347 (48.2%)	Late N = 373 (51.8%)
Current pregnancy planned and/wanted	No.(%)	No. (%)
Yes, n = 525	263(50.1)	262(49.9)
No, n = 195	84(43.1)	111(56.9)
Parity		
0, n = 245	112(45.7)	133(54.3)
1–2, n = 332	172(51.8)	160(48.2)
3 or more, n = 143	63(44.1)	80(55.9)
No. of children currently alive		
None, n = 283	130(45.9)	153(54.1)
1–2 children, n = 313	160(51.1)	153(48.9)
≥ 3 children, n = 124	57(46.0)	67(54.0)
Presence of medical and/obstetrical problems during the current pregnancy		
Yes, n = 60	26(43.3)	34(56.7)
No, n = 660	321(48.6)	339(51.4)
Experience of any medical and/obstetrical complications in the previous pregnancy (only for multiparous women)		
Yes, n = 102	44(43.1)	58(56.9)
No, n = 354	183(51.7)	171(48.3)
HIV status		
Reactive, Yes, n = 24	14(58.3)	10(41.7)
No, n = 696	333(47.8)	363(52.2)

3.3. The prevalence of IPV in pregnancy

In the current pregnancy, more than one in three of the women reported experiencing IPV (Table 3). More than three quarters reported to have a lifetime risk of emotional or physical abuse by their partner or someone important. The proportion of partner violence during the current pregnancy among ever exposed to IPV (n=581) was 44%. Over half of the women reported physical violence, forced sexual activity, having been psychologically abused, and nearly half (49%) reported being controlled by their partners in the recent year (Table 3).

Descriptive statistics stratified for parity indicated that 42% of nulliparous and 54% of the multiparous women reported exposure to sexual violence in the recent year. Likewise, 41% nulliparous and 59% of the multiparous women reported exposure to any lifetime risk of emotional or physical abuse (Table 4).

3.4. Factors associated with a late entry into ANC

In the overall analysis, women reporting recent sexual abuse were more likely to initiate ANC late in both the crude and the adjusted analyses (OR, 1.55; 95% CI = 1.09, 2.19). Those reporting any lifetime emotional or physical abuse were 1.56 times more likely to enter ANC late; however, this was not statistically significant (Table 3). However, women reporting a partner with controlling behaviour were more likely to enter into ANC early in the adjusted analyses (OR, 0.56; 95% CI = 0.38, 0.85) (Table 3). In a parity stratified analysis (Table 4), multiparous women were more likely to initiate ANC late when reporting any lifetime emotional or physical abuse, (adjusted OR, 2.28; 95% CI = 1.18, 4.39), or recent sexual IPV, (adjusted OR, 1.95; 95%CI = 1.27, 2.98).

4. Discussion

This is one of the first studies that have investigated the association between IPV and time of entry into ANC in Ethiopia. A high proportion of the women entered ANC late, and the proportion of pregnant women reporting IPV was significant. We demonstrate a strong association between any lifetime emotional or physical abuse and late entry into ANC especially, among multiparous women. Furthermore, the experience of recent sexual violence was associated with a late entry into ANC for the whole sample.

The proportion of women who entered late into ANC in this study (52%) is comparable with recent studies conducted in Ethiopia, where equivalent estimates varied between 51–83%.^{11,12,15,45–48} These differences in estimated attendance might be related to differences in geographical locations, as pregnant women residing in the cities like Jimma, may have relatively better access to facilities and information regarding

when to initiate antenatal care. Such a significant number of women entering late into ANC could have contributed to the high maternal and neonatal mortality in the country that could have been averted by timely ANC and interventions. IPV is prevalent in Ethiopia also during pregnancy.²⁴ Our study is the largest in Ethiopia so far, and more than one in three women reported experiencing IPV in their pregnancy. This finding is comparable to a recent smaller Ethiopian study reporting 29% of 282 pregnant women suffered physical IPV during their current pregnancy.²⁹ Other previous studies in the regions also illustrated the prevalence of IPV during pregnancy ranging between 15–29%.^{29–31}

Our finding of an association between IPV and late entry into ANC is in line with other studies conducted in developed and developing countries.^{14,18,19,33,34,36,49} A study in Southern Appalachia, USA, showed that physical IPV during pregnancy was associated with late entry into prenatal care.¹⁸ A study across different states in the USA identified that battered women sought antenatal care later than the non abused women,¹⁹ and the same finding was also observed in another USA study comprising nine states.⁵⁰ Similarly, in Bangladesh studies have indicated a link between physical violence,¹⁴ sexual violence³³ and delayed entry into ANC, less likely or no use of ANC.^{49,51} The link between physical violence and late initiation or low use of ANC has also been reported from India,³⁶ and Nigeria.³⁴ A more recent study in Zimbabwe as well demonstrated the link between IPV and late ANC entry or never attend ANC at all.²² Our results are also in line with a recent small cross-sectional community based study conducted in Addis Ababa, Ethiopia, where women reporting emotional IPV in their current relationship were less likely to enter ANC within the first trimester.⁴⁵ However, this study is different from our study in terms of the setting, sample size (210 Vs 720 respectively) and the type of IPV in predicting a late entry into the ANC using a parity stratified analysis.

Prior studies have offered different interpretations of the association between IPV and late entry into ANC, like physical, mental and psycho-social issues including helplessness, isolation, chronic pain, anxiety, mental strain, depression, physical disability and stress related sleep disturbance.^{33,52–56} Each may decrease women's physical and emotional ability to take care of their health including use of ANC. Such an understanding is in line with results from a study conducted in California which noted an association between psychological stress and late entry into ANC.⁵⁷ Fear of exposing visible signs of physical abuse, such as bruises or black eyes was also claimed delaying ANC.¹⁹

An additional explanation for the link between sexual violence and late ANC visits might be that sexual violence may be more physically as well as emotionally traumatic for pregnant women due to the physiologic changes during pregnancy related to an increased pregnancy-related physical symptoms.⁵⁸ Multiparous women may in addition to the violence exposure, be burdened

Table 3
The association between Intimate Partner Violence (IPV) and late entry (after 16 weeks of gestation), into Antenatal care (ANC), among 720 pregnant Ethiopian women.

Time and types of IPV	Total, 720	Entry into ANC		COR, (95%CI)	AOR ^a , (95% CI)
	No. of women reporting IPV	Timely (n = 347)	Late (n = 373)		
Any life time emotional or physical abuse	n = 581	270	311	1.43(0.99, 2.08)	1.56(0.99,2.44)
Recent partner violence					
Physical	n = 380	184	196	0.98(0.73, 1.32)	0.77(0.52,1.15)
Sexual	n = 357	155	202	1.46(1.09,1.96)	1.55(1.09,2.19)
Psychological	n = 370	178	192	1.01(0.75,1.35)	0.83(0.54,1.27)
Controlling behaviour	n = 350	172	178	0.93(0.69,1.24)	0.56(0.38,0.85)
Current physical violence	n = 256	124	132	0.98(0.73,1.34)	0.88(0.54,1.42)

Bold values signifies $p \leq 0.01$.

^a Adjusted for: education and age of the woman and her partner; residence; marital duration; if current pregnancy was planned/unplanned; relationship with partner (supportive/unsupportive); substance use; presence of any medical or obstetrical problem in the current pregnancy; Reference category is those responding 'No' for each question.

Table 4

The association between Intimate Partner Violence (IPV) and late entry (after 16 weeks of gestation) into Antenatal Care (ANC) stratified by parity in 720 pregnant Ethiopian women.

Time and types of IPV	Nulliparous (n = 245)			Multiparous (n = 475)		
	No. of women reporting IPV	COR, (95% CI)	^a AOR, (95% CI)	No. of women reporting IPV	COR, (95% CI)	^a AOR, (95% CI)
Any life time emotional or physical abuse	n = 172	1.44 (0.83,2.49)	1.38 (0.68,2.79)	n = 409	1.57 (0.93,2.66)	2.28 (1.18,4.39)
Recent partner violence						
Physical violence	n = 107	1.49 (0.89,2.48)	1.27 (0.64,2.55)	n = 279	0.79(0.54,1.13)	0.65(0.41,1.03)
Sexual violence	n = 103	1.32 (0.79,2.20)	1.14(0.61,2.15)	n = 255	1.56 (1.09,2.25)	1.95 (1.27,2.98)
Psychological violence	n = 77	1.18(0.69,2.04)	0.75 (0.35,1.59)	n = 293	0.99 (0.69,1.45)	1.11(0.65,1.89)
Controlling behaviour	n = 92	1.33 (0.79,2.24)	1.12 (0.52,2.42)	n = 258	0.81(0.56,1.16)	0.67 (0.42,1.05)
Current physical violence	n = 54	1.43 (0.77,2.65)	0.89(0.37,2.13)	n = 202	0.90 (0.63,1.29)	1.35 (0.79,2.28)

Bold values signifies $p \leq 0.01$.

^a Adjusted for: education and age of woman and partner; residence; marital duration; if current pregnancy was planned/unplanned; relationship with partner (supportive/unsupportive); substance use; experience of any complications in the previous pregnancy (for multiparous women only); presence of any medical/obstetrical problems in the current pregnancy; Reference category is those responding 'No' on each question.

with pregnancy-related physical symptoms and thus experience more stress which in turn may have affected the initiative for timely ANC visit. This may in fact warrants further study with larger sample and cohort designs in the future

Apart from this, late entry into the ANC among multiparous women entails a clear message for professionals working at ANC units that these women either did not attend ANC, or ANC service providers failed to provide information on the appropriate time of ANC initiation in their first pregnancy. One previous study also pointed out that previous use of antenatal care service did not predict timely ANC visit in the current pregnancy,⁵⁹ unless women are not counselled in pregnancy before. Multiparous women having previous pregnancy experiences may also feel more confident and think that early initiation of ANC is not necessary. Therefore, midwives and nurses should counsel all pregnant women, regardless of their parity and risk status on the right time to initiate ANC. It is also worth noting that they should take every ANC visit as an opportunity to create such awareness.

4.1. Strength and limitation of the study

The strengths of this study include: the use of a standardized survey tool, which had been back translated, and pilot tested; training of data collectors using standardized manual; ensuring privacy and confidentiality and regular supervision by a principal investigator and research assistants. These enhanced the reliability and validity of the data collection and results. The subject studied, IPV, is very sensitive and even stigmatizing. This may have led to underreporting. However, it is likely that underreporting may have occurred equally across groups, hence, the underreporting, assuming it was non-differential, may have weakened the association between the exposure and outcome. Recall bias may also have influenced the results; one could hypothesize that women exposed to IPV are less likely to recall precisely the date of their last menstrual period, and their estimated entry into ANC as to gestation age could, among the exposed women, have a wider range, thus our estimated ANC timeliness may be conservative.

Our estimates of an association between IPV and late entry into ANC are among those who actually have attended ANC, as the clinics were the venue of the data collection. It may be that women exposed to IPV are less likely to attend any ANC. If true and these had been included, our IPV estimates would have been even stronger.

We have adjusted for the potential confounders for which we had information. The study being a cross sectional design limits the

potential to draw causal inferences. Our estimates of IPV, late entry into ANC, and the associations, are among those who came for an ANC visit during one specific period. If included, and we had met them at multiple time points, it may have altered our estimates, while providing other important information.

5. Conclusion

Several international organizations including WHO, emphasise that ending violence against women across the lifespan, is a prerequisite to achieve the sustainable development goals (SDGs).³² In the current study, we demonstrate that women reporting IPV during or prior to a pregnancy are less likely to enter ANC in a timely manner. Late entry into ANC is a major challenge in Ethiopia and globally. It is a significant risk factor for maternal death, particularly among the most deprived and in the lowest socioeconomic group.⁶⁰ In the current study, any lifetime emotional, or physical, or recent sexual IPV, were all linked to late entry into ANC, especially among multiparous women. This information is imperative for strengthening any ANC services interventions. National or international efforts aimed at achieving the SDGs in maternal and child health should give due attention to the complex impacts of IPV on service utilization and ultimately pregnancy outcomes. Our results indicate the need for routine IPV screening during pregnancy as a base to target intervention of timely initiation of ANC. A recent Ethiopian report illustrate interventions such as increasing the midwifery workforce as an initiative towards improving maternal health (SDG 3.1).¹⁷ Training these midwives is needed to assist them in identifying and managing pregnancy IPV, to reduce the rates of pregnancy IPV and its resultant outcomes. Community based longitudinal studies are needed to investigate the influence of potential mechanisms mediating the association between IPV and the time of entry into ANC. These could also explore additional aspects of services needed to achieve the sustainable development goal (SDG) targets in reducing maternal mortality by 2030.

Acknowledgments

Health Bureaus, Institutions and administrators, Midwives and Nurses working at ANC, data collectors, supervisors, and clients participated in this study are all deserve acknowledgments for their collaboration. This study was supported by NORAD (Norwegian Agency for Development Cooperation), under the

NORHED-Program, Agreement no. “ETH-13/0024”, while the funder had no role in all steps of this research work.

Conflict of interest

the authors declare that they have no conflict of interests

Authors' contributions

BTG contributed on: Conceptualization, Data curation, Formal analysis, Investigation, Methodology: Validation, Visualization, Writing original draft. JHM contributed on: Funding acquisition, Conceptualization, Formal analysis, Methodology: Supervision, Validation, Visualization, Writing- review & editing. While BS contributed on: Conceptualization, Formal analysis, Methodology: Supervision, Validation, Writing- review & editing. All authors reviewed and approved the final version to be submitted.

Ethical statement

This study was evaluated by the two respective institutions' Ethical Committee and granted Ethical Clearance: IRB (Ref No: HRPGC/305/2015) and REK (Ref No: 2015/623/REK Nord). Permission to carry out the study was also obtained from the institutions' administrators. Informed written and or verbal consent of participants were obtained before the data collection. Data collection was in accordance with the ethical standards of the Helsinki declaration, WHO Ethical Standard on Ethical and Safety Recommendations for Domestic Violence Research (WHO, 1999), and the national and institutional research committee.

This study was supported by NORAD (Norwegian Agency for Development Cooperation) under the NORHED-Program, Agreement no. ETH-13/0024”, while the funder had no role in all steps of this research work.

References

- Organization WH. World Health Organization recommendations on antenatal care for a positive pregnancy experience. Available from: 2016; http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/anc-positive-pregnancy-experience/en/.
- Pervin J, Moran A, Rahman M, Razzaque A, Sibley L, Streatfield PK, et al. Association of antenatal care with facility delivery and perinatal survival—a population-based study in Bangladesh. *BMC Pregnancy Childbirth* 2012;**12**(1):111.
- Villar J, Bergsjo P, W.H. Organization. *WHO antenatal care randomized trial: manual for the implementation of the new model*. 2002.
- Chingle MP, Jonah M, Zoakah A. Antenatal care and pregnancy outcomes among mothers who delivered in a rural hospital in Nigeria. *Int J Innovative Res Dev* 2017;**6**(3).
- Moller AB, Petzold M, Chou D, Say L. Early antenatal care visit: a systematic analysis of regional and global levels and trends of coverage from 1990 to 2013. *Lancet Global Health* 2017;**5**(10):e977–83.
- Lincetto O, Mothebesoane-Anoh S, Gomez P, Munjanja S. Antenatal care. *Opportunities for Africa's newborns: practical data, policy and programmatic support for newborn care in Africa*. . p. 55–62.
- Agha S, Tappis H. The timing of antenatal care initiation and the content of care in Sindh, Pakistan. *BMC Pregnancy Childbirth*. 2016;**16**(1):190.
- Yaya S, Bishwajit G, Ekholuenetale M, Shah V, Kadio B, Udenigwe O. Timing and adequate attendance of antenatal care visits among women in Ethiopia. *PLoS One* 2017;**12**(9):e0184934.
- Central Statistical Agency (CSA) E. *Ethiopia demographic and health survey 2016: key indicators report*. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF; 2016.
- Gulema H, Berhane Y. Timing of first antenatal care visit and its associated factors among pregnant women attending public health facilities in Addis Ababa, Ethiopia. *Ethiop J Health Sci* 2017;**27**(2):139–46.
- Belayneh T, Adefris M, Andargie G. Previous early antenatal service utilization improves timely booking: cross-sectional study at university of Gondar hospital, northwest Ethiopia. *J Pregnancy* 2014;**2014**.
- Gebremeskel F, Dibaba Y, Admassu B. Timing of first antenatal care attendance and associated factors among pregnant women in Arba Minch town and Arba Minch district, Gamo Gofa zone, South Ethiopia. *J Environ Public Health* 2015;**2015**.
- Lerebo W, Kidanu A, Tsadiq M. Magnitude and associated factors of late booking for antenatal care in public health centers of Adigrat town, Tigray, Ethiopia. *Clin Mother Child Health* 2015;**12**(171):2.
- Islam MJ, Broidy L, Baird K, Mazerolle P. Exploring the associations between intimate partner violence victimization during pregnancy and delayed entry into prenatal care: evidence from a population-based study in Bangladesh. *Midwifery* 2017;**47**:43–52.
- Tesfaye G, Loxton D, Chojenta C, Semahegn A, Smith R. Delayed initiation of antenatal care and associated factors in Ethiopia: a systematic review and meta-analysis. *Reprod Health* 2017;**14**(1):150.
- Tessema GA, Laurence CO, Melaku YA, Misganaw A, Woldie SA, Hiruye A, et al. Trends and causes of maternal mortality in Ethiopia during 1990–2013: findings from the Global Burden of Diseases study 2013. *BMC Public Health* 2017;**17**(1):160.
- National Planning Commission FDRoE. Ethiopia 2017 Voluntary National Review on SDGs: Government commitments, national ownership and performance trends. 2017; Available from: The 2017 VNRs on SDGs_Ethiopia(Eng) Web version Pdf.
- Bailey BA, Daugherty RA. Intimate partner violence during pregnancy: incidence and associated health behaviors in a rural population. *Matern Child Health J* 2007;**11**(5):495.
- Taggart L, Mattson S. Delay in prenatal care as a result of battering in pregnancy: cross-cultural implications. *Health Care Women Int* 1996;**17**(1):25–34.
- Dietz PM, Gazmararian JA, Goodwin MM, Bruce FC, Johnson CH, Rochat RW. Delayed entry into prenatal care: effect of physical violence. *Obstet Gynecol* 1997;**90**(2):221–4.
- WHO. *Violence against women: intimate partner and sexual violence against women*. 2014 www.who.int/mediacentre/factsheets/fs239/en/. [Accessed 3 March 2015].
- Shamu S, Munjanja S, Zarowsky C, Shamu P, Temmerman M, Abrahams N. Intimate partner violence, forced first sex and adverse pregnancy outcomes in a sample of Zimbabwean women accessing maternal and child health care. *BMC Public Health* 2018;**18**(1):595.
- Islam MJ, Broidy L, Mazerolle P, Baird K, Mazumder N. Exploring intimate partner violence before, during, and after pregnancy in Bangladesh. *J Interpers Violence* 2018 0886260518775753.
- Gashaw BT, Schei B, Magnus JH. Social ecological factors and intimate partner violence in pregnancy. *PLoS One* 2018;**13**(3):e0194681.
- Donovan B, Spracklen C, Schweizer M, Ryckman K, Safilas A. Intimate partner violence during pregnancy and the risk for adverse infant outcomes: a systematic review and meta-analysis. *BJOG Int J Obstet Gynaecol* 2016;**123**(8):1289–99.
- Hill A, Pallitto C, McCleary-Sills J, Garcia-Moreno C. A systematic review and meta-analysis of intimate partner violence during pregnancy and selected birth outcomes. *Int J Gynecol Obstet* 2016;**133**(3):269–76.
- Katiti V, Sigalla GN, Rogathi J, Manongi R, Mushi D. Factors influencing disclosure among women experiencing intimate partner violence during pregnancy in Moshi Municipality, Tanzania. *BMC Public Health* 2016;**16**(1):715.
- García-Moreno C, Organization WH, Pallitto C, Devries K, Stockl H, Watts C, et al. *Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence*. World Health Organization; 2013.
- Abebe Abate B, Admassu Wossen B, Tilahun Degfie T. Determinants of intimate partner violence during pregnancy among married women in Abay Chomen district, Western Ethiopia: a community based cross sectional study. *BMC Women's Health* 2016;**16**:16.
- Yimer T, Gobena T, Egata G, Mellie H. Magnitude of domestic violence and associated factors among pregnant women in Hulet Ejju Enessie District Northwest Ethiopia. *Adv Public Health* 2014;**2014**.
- Laelago T, Belachew T, Tamrat M. Prevalence and associated factors of intimate partner violence during pregnancy among recently delivered women in public health facilities of Hossana town, Hadiya Zone Southern Ethiopia. *Open Access Lib J* 2014;**1**(07):1.
- Babu BV, Kusuma YS. Violence against women and girls in the Sustainable Development Goals. *Health Promot Perspect* 2017;**7**(1):1.
- Islam MJ, Broidy L, Baird K, Mazerolle P. Intimate partner violence around the time of pregnancy and postpartum depression: the experience of women of Bangladesh. *PLoS One* 2017;**12**(5):e0176211.
- Ononokpono DN, Azfredrick EC. Intimate partner violence and the utilization of maternal health care services in Nigeria. *Health Care Women Int* 2014;**35**(7–9):973–89.
- Shamu S, Abrahams N, Temmerman M, Musekiwa A, Zarowsky C. A systematic review of African studies on intimate partner violence against pregnant women: prevalence and risk factors. *PLoS One* 2011;**6**(3):e17591.
- Koski AD, Stephenson R, Koenig MR. Physical violence by partner during pregnancy and use of prenatal care in rural India. *J Health Popul Nutr* 2011;**29**(3):245.
- Daniel WW, Cross CL. *Biostatistics a foundation for analysis in the health sciences*. Wiley; 2018.
- Ageely HM. Health and socio-economic hazards associated with khat consumption. *J Fam Commun Med* 2008;**15**(1):3.
- Haile D, Lakew Y. Khat chewing practice and associated factors among adults in Ethiopia: further analysis using the 2011 demographic and health survey. *PLoS One* 2015;**10**(6):e0130460.
- Rabin RF, Jennings JM, Campbell JC, Bair-Merritt MH. Intimate partner violence screening tools: a systematic review. *Am J Prev Med* 2009;**36**(5):439–45 e434.

41. Deshpande NA, Lewis-O'Connor A. Screening for intimate partner violence during pregnancy. *Rev Obstet Gynecol* 2013;**6**(3–4):141.
42. McFarlane J, Parker B, Soeken K, Bullock L. Assessing for abuse during pregnancy: severity and frequency of injuries and associated entry into prenatal care. *JAMA* 1992;**267**(23):3176–8.
43. Moonesinghe LN, Rajapaksa LC, Samarasinghe G. Development of a screening instrument to detect physical abuse and its use in a cohort of pregnant women in Sri Lanka. *Asia Pac J Public Health* 2004;**16**(2):138–44.
44. Shamu S, Abrahams N, Zarowsky C, Shefer T, Temmerman M. Intimate partner violence during pregnancy in Zimbabwe: a cross-sectional study of prevalence, predictors and associations with HIV. *Trop Med Int Health* 2013;**18**(6):696–711.
45. Mohammed BH, Johnston JM, Harwell JI, Yi H, Tsang KW-k, Haidar JA. Intimate partner violence and utilization of maternal health care services in Addis Ababa, Ethiopia. *BMC Health Serv Res* 2017;**17**(1):178.
46. Ejeta E, Dabsu R, Zewdie O, Merdassa E. Factors determining late antenatal care booking and the content of care among pregnant mother attending antenatal care services in East Wollega administrative zone, West Ethiopia. *Pan Afr Med J* 2017;**27**(1).
47. Tekelab T, Berhanu B. Factors associated with late initiation of antenatal care among pregnant women attending antenatal clinic at public health centers in Kembata Tembaro Zone, Southern Ethiopia Science. *Technol Arts Res J* 2014;**3**(1):108–15.
48. Zegeye AM, Bitew BD, Koye DN. Prevalence and determinants of early antenatal care visit among pregnant women attending antenatal care in Debre Berhan Health Institutions, Central Ethiopia. *Afr J Reprod Health* 2013;**17**(4).
49. Rahman M, Nakamura K, Seino K, Kizuki M. Intimate partner violence and use of reproductive health services among married women: evidence from a national Bangladeshi sample. *BMC Public Health* 2012;**12**(1):913.
50. Dietz PM, Gazmararian JA, Goodwin MM, Bruce FC, Johnson CH, Rochat RW. Delayed entry into prenatal care: effect of physical violence. *Obstet Gynecol* 1997;**90**(2):221–4.
51. Singh JK, Evans-Lacko S, Acharya D, Kadel R, Gautam S. Intimate partner violence during pregnancy and use of antenatal care among rural women in southern Terai of Nepal. *Women Birth* 2018;**31**(2):96–102.
52. Coker AL, Smith PH, Bethea L, King MR, McKeown RE. Physical health consequences of physical and psychological intimate partner violence. *Arch Fam Med* 2000;**9**(5):451.
53. Sanchez SE, Islam S, Zhong Q-Y, Gelaye B, Williams MA. Intimate partner violence is associated with stress-related sleep disturbance and poor sleep quality during early pregnancy. *PLoS One* 2016;**11**(3):e0152199.
54. Ellis KK, Chang C, Bhandari S, Ball K, Geden E, Everett KD, et al. Rural mothers experiencing the stress of intimate partner violence or not: their newborn health concerns. *J Midwifery Womens Health* 2008;**53**(6):556–62.
55. Seng JS, Sperlich M, Low LK. Mental health, demographic, and risk behavior profiles of pregnant survivors of childhood and adult abuse. *J Midwifery Womens Health* 2008;**53**(6):511–21.
56. Ziaei S, Frith AL, Ekström E-C, Naved RT. Experiencing lifetime domestic violence: associations with mental health and stress among pregnant women in rural Bangladesh: the MINIMat Randomized Trial. *PLoS One* 2016;**11**(12):e0168103.
57. Chandler D. Late entry into prenatal care in a rural setting. *J Midwifery Womens Health* 2002;**47**(1):28–34.
58. Lukasse M, Henriksen L, Vangen S, Schei B. Sexual violence and pregnancy-related physical symptoms. *BMC Pregnancy Childbirth* 2012;**12**(1):83.
59. Tariku A, Melkamu Y, Kebede Z. Previous utilization of service does not improve timely booking in antenatal care: cross sectional study on timing of antenatal care booking at public health facilities in Addis Ababa. *Ethiop J Health Dev* 2010;**24**(3).
60. Cantwell R, Clutton-Brock T, Cooper G, Dawson A, Drife J, Garrod D, et al. Saving mothers' lives: reviewing maternal deaths to make motherhood safer: 2006–2008. The eighth report of the confidential enquiries into maternal deaths in the United Kingdom. *BJOG Int J Obstet Gynaecol* 2011;**118**(Suppl 1):1–203.



Article

Community Stakeholders' Perspectives on Intimate Partner Violence during Pregnancy—A Qualitative Study from Ethiopia

Bosena Tebeje Gashaw ^{1,2,*} , Jeanette H. Magnus ^{2,3}, Berit Scheib ^{4,5}
and Kari Nyheim Solbraekken ⁶

¹ College of Health Sciences, Jimma University, Jimma 1355, Ethiopia

² Faculty of Medicine, University of Oslo, 0316 Oslo, Norway; j.h.magnus@medisin.uio.no

³ Tulane School of Public Health and Tropical Medicine, New Orleans, LA 70112, USA

⁴ Department of Public Health and Nursing, Faculty of Medicine and Health Sciences, University of Science and Technology, N-7489 Trondheim, Norway; berit.schei@ntnu.no

⁵ Department of Obstetrics and Gynaecology, St. Olav's Hospital, Trondheim University Hospital, 7030 Trondheim, Norway

⁶ Institute of Health and Society, University of Oslo, 0318 Oslo, Norway; k.n.solbrakke@medisin.uio.no

* Correspondence: bosenatebeje@yahoo.co.uk; Tel.: +251-911-759-276

Received: 5 November 2019; Accepted: 17 November 2019; Published: 25 November 2019



Abstract: Intimate partner violence (IPV) in pregnancy adversely affects the health of women and unborn children. To prevent this, the community responses, societal systems, and structures to support victims of IPV in pregnancy are vital. Objectives: to explore community stakeholders' perspectives related to IPV in pregnancy in Jimma, Ethiopia, and if needed, create the knowledge base for interventions. Methods: using an exploratory design, this qualitative study had a maximum-variation (multiple spectrum sources) sampling strategy with 16 semi-structured interviews of purposively selected key informants representing different community institutions. Guided by Connell's theory of gender and power, a content analysis of the translated interviews was conducted using Atlas.ti 7 software. Results: reconciliation between IPV victims and their abusers was the solution promoted by almost all the respondents. There was limited awareness of the adverse impacts IPV in pregnancy has on the health of the woman and the foetus. Despite regular encounters with victims, there is no organized or structured operational response to support IPV victims between the participating institutions. Conclusion: the potential danger of IPV for the mother or the unborn child was not well understood by the members of the studied Ethiopian community. Neither coordinated efforts to support IPV victims nor links among relevant agencies existed. The study demonstrated the dire need of coordinated practical action, changes in current socio-cultural norms, formal training and capacity building, awareness creation, clear intervention guidelines, and facilitation of support networks among relevant institutions in Ethiopian communities.

Keywords: IPV in pregnancy; responses; gender and power; capacity building; support and networking; Ethiopia

1. Introduction

Worldwide, almost one third of all women have experienced physical and/or sexual violence by their intimate partner [1]. Ethiopia has even higher intimate partner violence (IPV) prevalence, with nearly three in four women reporting lifetime IPV experiences [2], and a prevalence of 15–36% during pregnancy [3–7]. A growing body of evidence highlights the adverse short- and long-term physical, reproductive, and mental health consequences for women exposed to IPV during pregnancy [8].

Furthermore, IPV during pregnancy increases the risk of intrauterine foetal death, preterm birth, and low birth weight [9].

The public response shapes the social climate, and either perpetuates or discourages IPV occurrence [8]. A lack of targeted societal responses leads to tolerance or even justification of IPV [8,9]. When the socio-cultural norms and structures condone IPV, suffering women are often ignored [10,11]. Help-seeking, disclosure, and subsequent utilization of available resources are often hindered by socio-cultural, economic or institutional factors [12]. Deep-rooted gender inequality, discriminatory social values [13] and nurturing patriarchal social norms fostering gendered behaviour, allow IPV to occur.

Institutions operating in these systems may either hold a patriarchal view, or might have a tendency to consider wife abuse as a personal and familial issue rather than as a social and legal problem [14]. Likewise, religious leaders, as a part of the larger socio-cultural structure, may enforce a culture of patriarchy, albeit making public statements denouncing partner violence, and use religious teachings to justify it [15,16].

The main aim of the current qualitative study is to explore the perspectives on IPV in pregnancy of Ethiopian community stakeholders from different institutions. Their unique responses related to IPV in pregnancy may offer clarification of their views on the subject, promoting a deeper understanding, and creating the potential for interventions [17].

1.1. Theoretical Framework

The Theory of Gender and Power

To better understand the community stakeholders' perspectives on IPV in pregnancy, Connell's theory of gender and power guided the current study [18,19]. Gender and power are embedded in the individual, interactional and institutional dimensions of most societies [20,21]. As outlined by Connell, the three constructs of gender and power (the structure of cathexis, the structures of the sexual division of labour, and the gendered division of power) exist at the societal as well as the institutional level [18,22]. The gendered division of power at the institutional level is maintained by the abuse of power, authority, and control [22]. The structure of cathexis is also referred to as the structure of social norms and affective attachment or attitudes [22]. Connell identified this structure to address the affective nature of relationships, a structure that defines the culturally normative roles for men and women, which may weaken women's role and increase the inequality felt by women in a heterosexual relationship. At the societal level, the structure of cathexis characterizes the sexual attachments defining appropriate female sexual behavior. In the area of public health, women are adversely affected by such structures, fostering supportive attitudes of wife beating, regarding violence as a notion of masculinity, and enforcing strict gender roles in the society. All are linked to increased IPV in pregnancy implicating the adverse effects of such structures [3,23,24]. This model was used as a theoretical framework to explore the perspectives of different institutions towards IPV in pregnancy.

2. Materials and Methods

2.1. Study Design

An exploratory design and qualitative approach semi-structured interviews (SSIs)—was used to gather different community stakeholders' perspectives regarding IPV in pregnancy.

2.2. Study Setting

The study was conducted from November 2015 to April 30, 2016, in Jimma Town, one of the zones in the Oromiya regional state. Jimma is one of the largest cities in Ethiopia, located 352 km southwest of the capital, Addis Ababa. It is a multi-ethnic town, distinguished by different religions, cultures, and languages, with three districts (Woredas) and 13 sub-districts (kebeles), and a population of 177,900

[Central Statistics Agency (CSA), 2015]. The participants were interviewed at their workplace, and 16 interviews were completed.

Participants

A copy of the ethical approval from the institutional review boards (IRB) of Norway as well as from Jimma University accompanied a collaboration letter to the head office of each study institution to obtain permission for data collection. Participants representing a wide range of age, profession, religion, education, and responsibility offered insight and included public women's affairs employees (whose primary focus is gender equality), religious leaders, police officers, judges, and prosecutors (of the governmental institutions), (Table 1).

Table 1. Characteristics of the study participants ($N = 16$).

Participant Characteristics		<i>n</i>
Age	18–35	5
	36–50	8
	51 & above	3
Gender	Male	10
	Female	6
Marital status	Married	15
	Single	1
Religion	Orthodox	5
	Muslim	6
	Protestant	5
Level of education	Grades 6–12	1
	Above 12th grade	15
Occupation (police officers, judges, and prosecutors)	Law enforcing bodies	7
	Religious leaders	7
	Women's affairs	2

2.3. Data Collection Tools and Procedures

Scripted interview guides were developed. We aimed to capture the participants' experience with IPV victims, current routine and institutionalized responses, their views on reporting to police officers, whether they were aware of potential medical and/or physical consequences of IPV in pregnancy and any existing collaborative efforts or networking with relevant stakeholders.

Notes were taken during the face-to-face interviews, as the majorities were not willing to tape the interview. The primary investigator (PI) conducted the sessions, and two MSc midwives were note-takers. The objectives of the study were explained. After discussing each question, a debriefing session followed to ensure congruency between the notes and the interviewees' expressions. All these steps lasted an hour on average. The interview guides were pretested in institutions at other sites with similar characteristics to ensure cultural suitability and clarity. The interviews were conducted in Amharic. The PI and the assistants translated the notes into English after each session. A different person checked a few English translated notes to ensure the accuracy of the text, and no major inconsistencies were identified. Additionally, we revisited two interviewees (religious leaders) to seek clarification or additional information about the issues raised in earlier interviews.

2.4. Data Processing and Analysis

Atlas.ti 7 software was used for analyses [25]. Based on previous research on IPV and the theoretical framework, we interpreted the content of the textual data through a systematic process of coding and recognizing themes and categories (Table 2). Finally, after classifying all notes/scripts into their respective categories and themes, we started describing and interpreting them (Table S1). Qualitative content analysis was used to explore the manifest of content (what the text says) and the latent

content (the interpreted meaning), [25]. The goal of content analysis was to provide knowledge and understanding of the phenomenon under study and the outcome of the analysis is categories or themes describing the phenomenon [26,27].

Table 2. Sample content analysis of the community stakeholders' responses (theme 1) of different institutions to intimate partner violence (IPV) in pregnancy based on Connell's theory of gender and power.

Meaning Units	Condensed Meaning Units	Codes	Sub-Themes
Most prefer to reconcile victims with their attacker, advice to calm down and tolerate or not to divorce Neighbours should not interfere Repairing marriage, make a prayer... (religious leaders) No need to report to police	Reconciliation, tolerance, prayer repairing marriage as a solution A tendency not to report IPV cases to police	Reconciliation is commonly preferred Keeping with the marriage	Reconciliation was taken as the best solution to attenuate IPV (social norms, values and attitude)
Women have nowhere to go Most women are economically dependent on their partner	Most women are economically dependent	Economic dependency	Women's economic dependency as a barrier not to leave an abusive partner (the structure of the sexual division of labour and power)
Women having many children should not or do not want to leave their children behind We fear the consequences of divorce	Women should stay in abusive relationships for the sake of their children fear of the consequences of divorce	Having children Fear of divorce	Having children and fear of divorce as a barrier not to leave abusive partner, (sexual division of labour, social norms, values and attitude)
Police officers do not take IPV seriously Society accepts partner violence as normal IPV is considered as a family and private issue, while women accept IPV and even defend their abuser Married women are more respected No separate record for IPV in the court office Divorce is sinful Women are expected not to leave their children Children of a divorced family are disrespected by society Women are powerless The patriarchal system favours men Marriage is highly valued Women need protection	Considering IPV as normal and/expected Women are expected to sacrifice valuing marriage Perceiving women as powerless A child of a divorced family is disrespected	Trivializing and/or acceptance of IPV Expecting women to sacrifice Social stigma	The structure of cathexis (Patriarchal views, social norms, values, and attitude)

2.5. Ethics and Consent:

Ethical approval to conduct the study was obtained from Jimma University College of Health Sciences, IRB, Ref No: HRPGC/305/2015 and the Norwegian Regional Ethical Committee (REK), Ref No: 2015/623/REK Nord, in accordance with the Helsinki Declaration of 1975, revised in 2008. Informed written and verbal consent from the respondents was obtained before data collection. The respondents were fully anonymised, and assured about the confidentiality of their responses, their voluntary participation, and the right to terminate at any time.

3. Results

Four major themes emerged from the interviews. Each theme is presented, accompanied by illustrative quotes.

3.1. Reconciliation

All participants regarded IPV as very common. They had experience with battered women, both pregnant and non-pregnant. The respondents considered IPV a private issue, happening at all ages, but more concealed among those of older age, accepted and/or tolerated in the community unless severe. Interference by neighbours was discouraged. Our informants preferred advising the victim to be tolerant, seeking reconciliation with the partner or spouse.

“I have met many victims and the solutions given depend on the case, some reconciliation, some to police and others to courts, but there is no guarantee. One lady was killed after reconciled with her abusing husband”. (Women’s affairs representative)

The women’s affairs representatives voiced meeting a minimum of 15–20 pregnant and non-pregnant IPV victims per month each; some had minor, some major and visible trauma. They stated that, depending on the severity of the trauma, they might refer the victim to police, with the power to request examinations to gather medical evidence. Law-enforcing bodies (judges, prosecutors, and police officers) also expressed similar experiences, addressing an average of 35 cases of family problems per week, of which 60–70% were partner conflict issues seen in court. They also stated that there is no systematic recording of IPV (criminal issues in the legal system) separately, it is rather classified as a husband and wife issue, and clustered in “family issues”. The interviewed police officers also stated meeting many victims of IPV, some with major trauma and some minor, a minimum of 12–16 per month. They also underscored why they prefer reconciliation to advising women about their rights, which may involve divorce as a consequence.

“When we advise women about their rights, we fear that it may increase divorce rate as a consequence; we do not support divorce as it is bringing us so many consequences, including children of the divorced family, become more raped, become street children . . . etc., and it goes vicious circle”. (Male judge)

Many women turn to religious leaders for guidance or support in this culture. Leaders stated while trying to intercede on her behalf in IPV situations, sometimes they faced the partners’ anger, such as blaming, being yelled at and so forth.

“I meet partners in conflict almost every day, I have a characteristics/gift of repairing the marriage, but sometimes the aftermath may come to me (Priest), especially when it comes to those drunk ones”. (Religious leader)

When emphasizing the need for women and families to be protected by their husbands, religious leaders described that women are exposed to many problems because they are physically weaker; men can go anywhere, but women cannot, as they always face the risk of abduction or rape. Our informants stated that men should protect and lead their families because they are the heads of the household. It was also stated that a good woman is a pride for her family and that she should make her husband happy and produce children. The interviewed religious leaders cited religious accounts prohibiting divorce, and emphasized the essence of forgiveness.

“We strongly condemn divorce; our bible prohibited divorce, it is sinful, it should only be death that separate couples; whenever there is a conflict between couples, they have to excuse each other. . . . Jesus is the lord of forgiveness, and this apology helps us to preserve family and children, generation and our country”. (Religious leader)

3.2. Reluctance Involving Police

When addressing whether to report IPV cases to the police or not, several of the participants did not recommend reporting IPV victims to the police unless the victim had sustained severe trauma. One significant reason for not reporting IPV instances to the police was that the husband could become more aggressive and most likely end the relationship and the woman may not want to jail her partner either, especially if he was the only one generating any income. Participants also expressed that police often send victims back to local mediators (religious leaders or elders) to work on reconciliation.

Furthermore, the representatives of the courts did not support reporting cases of IPV to police because it often would lead to divorce, especially if the woman was pregnant and/or they had children. The respondents regarded the community repercussions of divorce as manifold; the financial burden imposed on the woman; lack of social respect; and the stigmatization of the child(ren) as ‘bastard’. The respondents stated that including the police could exacerbate the conflict. Finally, they stated that

the police required evidence, which may not be always easy for IPV victims to produce. The participants also said that judges often do not support reporting the issue of IPV to the police or court unless it is beyond the scope of local mediators and very severe.

However, in contrast to religious leaders, the female police officers were in favour of reporting any IPV cases, stressing that the current system did not take IPV seriously.

“IPV should be reported to the police, but some male police officers do have a problem to deal with this issue; they may even be violent towards their wives. When their victimized wives come to me, I will be taking their history together with my supervisor because I am afraid of male police abusers, and many police officers do not consider IPV as violence”. (Female police).

Similarly, irrespective of their gender, prosecutors were in favour of reporting IPV cases to the police.

“... it should be reported to police, not to let it happen again and take a lesson for others”. (Male prosecutor)

Participants underlined that women’s economic dependence on their partner acts as an obstacle when reporting cases to the police.

“... it is challenging, in fact, police or court can be a better solution because most men are afraid to step in the police office, court and be punished. On one hand, police and court may have worst ending because he (abuser) may take a strong decision to end the marriage, while divorce for a housewife with a lot of children... hmmm is difficult; on the other hand, to local mediators, or to us (Imam) may not last long/unsuccessful most of the time”. (Religious leader)

3.3. Limited Awareness of the Consequences and Adversity of IPV in Pregnancy

Most interviewees acknowledged that IPV, mainly physical violence during pregnancy, might affect the health of the mother and foetus in general terms.

“Partner violence during pregnancy, I think it may impact foetal development, and foetus may not be healthy”. (Female judge)

“During pregnancy, beating may cause serious danger for the foetus. ‘Foetus listens what is happening outside’, meaning if she feels happy, it feels the same; if she is disturbed foetus will also be disturbed”. (Religious leader)

The participants in our study regarded pregnancy as a time of stress on the woman, and IPV on top of it can augment such a strain and vice-versa (i.e., IPV increases the stress on pregnancy and pregnancy intensifies IPV). Particularly women’s affairs representatives emphasized how pregnancy affects a couple’s relationship by taking away the husband’s attention from the woman.

“Pregnancy brings many problems to the mother and foetus. The husband may even have left her and turn to other ladies”. (Women’s affairs representative)

“I met a lady, who was attacked by her husband and sent to her family with two children when she came back after a month, she found another lady in her own house”. (Women’s affair representative)

During the interviews, the participants provided brief but comprehensive information about the adverse impact IPV can have on the health status of the women, the foetus and the pregnancy outcome.

“Violence in pregnancy involves death; it may result in bleeding and abortion”. (Female police)

3.4. Lack of Coordinated Responses or Strategic Plan Addressing IPV

No notable variations in perspective were observed between the participants of the different institutions when it came to assisting IPV victims in an acute stage. They declared that no strong coordinated or strategic support or network exists among the relevant stakeholders, except for the underutilized referral link opportunity between the police, the women's affairs representatives and the court.

Women's affairs representatives reflected that there was no coordinated support system for IPV victims. Whenever victims came with severe and visible injuries, they could be referred to the police and the court. It was also stated that some law-enforcing authorities in the court seemed unwilling to let women's affairs representatives support the victims and follow the verdict process. Some reported to have been threatened by the abuser, and 'being a woman' made it difficult to refer victims and effectively carry out their responsibility.

"We do not have a network, even no security even for us, some men used to come to our office and threaten to kill us". (Women's affairs representative)

"Because we don't have strong relationships with women's affairs office, depending on the case, but mostly we reconcile many victims with their abusive partner, some will be referred to local mediation". (Female judge)

A male judge elaborated on how the absence of resources and poor linkages complicated the management of victims.

"I meet many victims, but I met one on my way home; she was term pregnant, evicted from her house, I took her to the local court and link her to women's affairs, and they let the community contribute some money for her survival as the last resort."

Female police officers also expressed that there is no strong link within or outside their organizations. Because they are women, they do not even feel safe while trying to help victims. There are no shelters for survivors for a temporarily stay.

"There was this female officer who quarrels with her husband because she took home a woman victim of partner violence who had nowhere to go". (Male police officer)

The leaders in our study shared many stories of victims turning to and seeking their service. Partnerships with other organizations could potentially be helpful in equipping the various community stakeholders, including religious leaders to link their responses with other relevant agencies. However, religious leaders in our study voiced that they do not refer victims to other support sources. Rather, they strongly recommended couples, to forgive each other and reconcile using religiously informed advice and quoting related verses.

"Jesus is the Lord of forgiveness and forgiveness is infinite". (Religious leader)

4. Discussion

The prevailing male-dominated and religiously anchored traditional values in Ethiopia underscore the family as a private institution. This perspective is reinforced by the societal structures, and gender roles are pervasive in societal and institutional agencies. IPV is widely seen as a private issue in Ethiopia, accepted and tolerated by the society [28,29]. This study is the first comprehensive qualitative study undertaken in Ethiopia addressing community stakeholders' perspectives on IPV in pregnancy.

4.1. Reconciliation as the Main Response

One important finding in our study was that IPV is considered normal and a private family issue. Reconciliation is encouraged at the cost of the woman, her health, integrity, and humanity, encouraging

women to tolerate and accept their situation. This is a socially desirable solution in situations of family conflict, as divorce is considered religiously prohibited for women. IPV is highly prevalent in this population [3] and based on the interview data, it is common to encounter or observe victims of IPV, including victims beaten to death.

Consistent with the Connell's theory of gender and power, social constructs, including the sexual division of labour, power and social norms, conflict/violence in marriage is taken for granted, and women are expected to be tolerant and sacrificial [30,31], enforcing the tendency to preserve women's subordination. Other studies also confirm the gender inequitable norms and practices linked to IPV [32–34]. Men's cultural and historical authority further strengthens their general sense of power over their partners, and if this power is threatened, permission to resort to violence [35]. Our study participants affirm traditional gender norms, power imbalance as inherent, and this is enforced by structures embedded in the Ethiopian society across formal and informal institutions.

Another challenge is when IPV victims have children. Having children has been identified as both a potential protective and as a risk factor for IPV. It is also challenging because most research studies indicate that women are expected to stay with their violent partners for the sake of their children [36,37] on the one hand, or they have to leave their violent partners to protect their children [38] on the other hand. However, in our study, having children and/or being pregnant were by our informants considered as the main reason for recommending reconciliation as a remedial action. There is a common proverb said by many Ethiopian communities that 'a Buffalo is stabbed for the sake of her child', implying that a woman having children should stay in the relationship at any cost. Such a mindset is imposed on women for many reasons, including expecting women to be a sacrifice as the society is discouraging fatherless (divorced) children. This is underpinning the societal norms and attitudes influencing the responses to IPV in pregnancy. It is also worth noting that for women to stand up for their rights, they need economic power [39], yet most women in Ethiopia are economically dependent on their partners, making it difficult for them to be self-sufficient and have the choice to liberate themselves from their abuser.

The legislation in Ethiopia towards IPV, the 2004 criminal code, criminalizes most forms of violence against women and girls including rape, abduction, female genital mutilation, and early marriage [40,41]. However, the legislative framework is not strong enough to protect survivors from domestic violence. There has so far been no separate domestic violence act or law providing specific civil remedies for survivors, such as the right to obtain protection order, compensation relief, residence order, shelter, or medical benefits. There is an absence of sufficient criminal liabilities for perpetrators [40,42]. This may again enforce survivors to stick with an abusive partner.

4.2. Reluctance to Initiate Officers Action

Our study has also identified that there are few formal and informal resources supporting women experiencing IPV in this Ethiopian community. Other studies are in line with our findings [12,43,44]. However, contrary to the responsibilities of the police, most of the participants in our study do not recommend reporting the IPV incident to them, partly because it does not guarantee the victims' security. In concert with other studies, our study highlights that police officers may even side with the aggressor or hold a patriarchal view, considering abuse as a personal and family issue rather than a societal and legal problem [14]. This may enhance the gender inequitable norms and encourage such practices in the society [32]. This also illustrates that the responses of IPV in pregnancy by agencies are shaped by existing structural and socio-cultural norms [23].

4.3. Limited Awareness of the Consequences of IPV during Pregnancy

Participants regarded IPV in pregnancy as affecting both the mother and foetus in general terms, stating that mainly physical violence had adverse outcomes on pregnancy. Many studies have documented the effects of IPV on maternal health service utilization [24,45,46], and its multifaceted effect on maternal and neonatal outcomes [47,48]. It is also worth noting that not only physical but also

other types of IPV in pregnancy can adversely affect maternal and foetal wellbeing. For instance, women in psychological abuse can be at a higher risk of postnatal depression and increased risk of thinking about harming themselves or their infant [49,50]. Furthermore, IPV has been linked with preeclampsia [51], increased risk of third trimester bleeding [47], homicide, and depression [47,52].

The participants in our study stated that pregnancy might increase the spouse's extra-marital activity placing women at increased risk for IPV. This is in concert with earlier studies reporting that pregnancy increases a woman's vulnerability to violence by the partner's reduced commitment to the relationship. He might be regarding the pregnancy as a limitation of free access to his woman's body, and regarding it as interfering with her ability to perform her traditional role as a homemaker/caretaker [53,54]. This is in line with the Connell's sexual division of power and labour. Another study state that when pregnancy is added into an already volatile relationship, the violence can become worse [55].

4.4. Lack of Coordinated Responses or Strategic Plan

Effective prevention of IPV requires integration and networking among relevant stakeholders [56]. Effective collaboration and networking can provide a spectrum of services to survivors, including: crisis intervention; safety planning; shelter and transitional housing; a supportive health system including specialized counselling; medical examinations; collection of forensic evidences and referral assistance to survivors; employment; and legal advocacy [57,58]. Remarkably, the participants in our study highlighted a lack of networking, except for the rare/weak referral links among the police, women's affairs, and the court. The absence of strong links among relevant institutions, coupled with complex socio-cultural sanctions against reporting IPV cases to agencies, women's economic dependency, and the absence of system responses would partly explain reconciliation being the most common remedial action enforced by our study participants. This highlights the need for training, capacity building, and clear guidelines to effectively prevent IPV and/or assist pregnant victims.

The presence of informal social networks, where religious leaders are part of the collaborative community responses, have been shown effective to improve access, facilitate the utilization of existing IPV services, and changing norms related to it [58,59]. They may also be crucial in responding to the social, emotional, and spiritual needs of IPV victims. Nevertheless, they reinforced patriarchal ideology and advised victims to tolerate and reconcile with their partners [16]. In fact, the religious leaders in our study expressed that divorce is sinful; indeed, most communities in Ethiopia condemn divorce [29], especially during pregnancy it is regarded as highly unacceptable. Similarly, other stakeholders, including the police and members of the court, promoted mediation with the intention of family peace, family stability, economic security, and religious reasons.

Additionally, female police officers and women's affairs office representatives felt insecure and unsafe while trying to work with IPV victims because perpetrators had threatened them. Participants in our study illustrated the gender inequitable norms prevailing in the society are shared by male officers; consequently, female agents refrained from action for fear of being attacked by the male perpetrator or colleagues. Here, the gender power is operating at different levels influencing the responses to IPV. The differential gender power men and women have, undermines their professional authority to shift social norms, practices, and beliefs related to IPV. Although women who experience IPV require safety, social support, economic security, housing, and legal protection [60], the lack of gender equity makes obvious the need for a gender-sensitive social structure and a multisectoral response that is integrated in order to prevent the adverse personal and societal impact of IPV in pregnancy.

4.5. Study Limitations and Strengths

We secured high-quality data by requesting verifications and/or corrections to the notes at the end of each session, and additional interviews to seek clarification or additional information. We accounted for the researchers' biases by having two note-takers in addition to the interviewer in the room [61]. The complexity of extracting information on the stakeholders' perspectives towards IPV during

pregnancy across a range of socio-demographic populations; from various sources and/or institutions, was mitigated by using a theoretical framework. The dependability of the data was also maintained by training the research assistants. However, the current study has its limitations. The subject studied is very sensitive, and shaped by the social norms and values, so the participants may not have disclosed the real scenario about the topic, or may have provided biased information. As in most qualitative studies, our findings cannot be generalized to a larger population; however, in accordance with the quality criteria of transferability, we argue that the knowledge obtained could be of value for similar groups and/or contexts.

5. Conclusions

IPV in pregnancy was commonly encountered by the Ethiopian community stakeholders in this study. However, the global adverse impact of IPV on pregnancy outcomes was not well understood. The perspectives on IPV in pregnancy seem embedded in many socio-cultural, structural, and economic aspects that erected barriers and prevent pregnant IPV victims from obtaining help. The complexity needs to be considered when designing interventions to address IPV in pregnancy in Ethiopia. Formal and informal leaders often regard IPV as a private issue and recommend reconciliation of IPV victims with their abusers. There is no organized or structured operational response to support IPV victims among relevant institutions in Ethiopia. There is a need for formal training, capacity building, clear protocol or intervention guidelines, increased community awareness about the consequences of IPV in pregnancy, and a coordinated and well-structured operational response to support pregnant IPV victims.

Supplementary Materials: Supplementary materials can be found at <http://www.mdpi.com/1660-4601/16/23/4694/s1>. **Table S1-** Procedures/steps of data analysis in Atlas.Ti, based on the content analysis, and framed by the theory of gender and power.

Author Contributions: Conceptualization, B.T.G., J.H.M., and B.S.; methodology, B.T.G., J.H.M., B.S., and K.N.S.; data collection and transcription of the interviews in verbatim, B.T.G.; software, B.T.G.; formal data analysis and interpretation, B.T.G., J.H.M., B.S., and K.N.S.; investigation, B.T.G., J.H.M., B.S., and K.N.S.; project administration, J.H.M.; supervision, J.H.M., B.S., and K.N.S.; visualization, B.T.G.; writing—original draft, B.T.G.; writing—review and editing, J.H.M., B.S., and K.N.S.; all authors approved the final version.

Funding: This project was supported by NORAD (Norwegian Agency for Development Cooperation) under the NORHED-Programmed, Agreement no. ETH-13/0024, but the funding body had no role in the data collection and analyses, writing of the manuscript and decision to submit the manuscript for publication.

Acknowledgments: The Jimma Town institutions included in the study, the research assistants, and participants from different institutions all deserve acknowledgments for their collaboration. We are also grateful to the NORAD project for funding this research.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. WHO. Violence Against Women: Intimate Partner and Sexual Violence Against Women: WHO. 2014. Available online: www.who.int/mediacentre/factsheets/fs239/en/ (accessed on 3 March 2015).
2. Garcia-Moreno, C.; Jansen, H.A.; Ellsberg, M.; Heise, L.; Watts, C.H. Prevalence of intimate partner violence: Findings from the WHO multi-country study on women's health and domestic violence. *Lancet* **2006**, *368*, 1260–1269. [[CrossRef](#)]
3. Gashaw, B.T.; Schei, B.; Magnus, J.H. Social ecological factors and intimate partner violence in pregnancy. *PLoS ONE* **2018**, *13*, e0194681. [[CrossRef](#)]
4. Abate, B.A.; Wossen, B.A.; Degfie, T.T. Determinants of intimate partner violence during pregnancy among married women in Abay Chomen district, Western Ethiopia: A community based cross sectional study. *BMC Women's Health* **2016**, *16*, 16. [[CrossRef](#)]
5. Gebrezgi, B.H.; Badi, M.B.; Cherkose, E.A.; Weldehaweria, N.B. Factors associated with intimate partner physical violence among women attending antenatal care in Shire Endasselassie town, Tigray, northern Ethiopia: A cross-sectional study, July 2015. *Reprod. Health* **2017**, *14*, 76. [[CrossRef](#)]

6. Laelago, T.; Belachew, T.; Tamrat, M. Prevalence and Associated Factors of Intimate Partner Violence during Pregnancy among Recently Delivered Women in Public Health Facilities of Hossana Town, Hadiya Zone, Southern Ethiopia. *Open Access. Libr. J.* **2014**, *1*, 1. [[CrossRef](#)]
7. Alebel, A.; Kibret, G.D.; Wagnew, F.; Tesema, C.; Ferede, A.; Petrucka, P.; Boob, F.T.; Birhanu, M.Y.; Tadesse, A.A.; Eshetie, S. Intimate partner violence and associated factors among pregnant women in Ethiopia: A systematic review and meta-analysis. *Reprod. Health* **2018**, *15*, 196. [[CrossRef](#)]
8. Waltermaurer, E. Public justification of intimate partner violence: A review of the literature. *Trauma Violence Abus.* **2012**, *13*, 167–175. [[CrossRef](#)]
9. Shamu, S.; Munjanja, S.; Zarowsky, C.; Shamu, P.; Temmerman, M.; Abrahams, N. Intimate partner violence, forced first sex and adverse pregnancy outcomes in a sample of Zimbabwean women accessing maternal and child health care. *BMC Public Health* **2018**, *18*, 595. [[CrossRef](#)]
10. Ilika, A.L. Women's perception of partner violence in a rural Igbo community. *Afr. J. Reprod. Health* **2005**, *9*, 77–88. [[CrossRef](#)]
11. Makahamadze, T.; Isacco, A.; Chireshe, E. Examining the perceptions of Zimbabwean women about the domestic violence act. *J. Interpers. Violence* **2012**, *27*, 706–727. [[CrossRef](#)]
12. Odero, M.; Hatcher, A.M.; Bryant, C.; Ononom, M.; Romito, P.; Bukusi, E.A.; Turan, J.M. Responses to and resources for intimate partner violence qualitative findings from women, men, and service providers in Rural Kenya. *J. Interpers. Violence* **2014**, *29*, 783–805. [[CrossRef](#)] [[PubMed](#)]
13. Gebru, S.G.; Demeke, M.A. The Millennium Development Goals and the Status of Gender Disparity in Ethiopia: Achievements and Challenges. *Am. Sci. Res. J. Eng. Technol. Sci. (ASRJETS)* **2015**, *8*, 56–78.
14. DeJong, C.; Burgess-Proctor, A.; Elis, L. Police officer perceptions of intimate partner violence: An analysis of observational data. *Violence Vict.* **2008**, *23*, 683–696. [[CrossRef](#)]
15. Petersen, E. Working with religious leaders and faith communities to advance culturally informed strategies to address violence against women. *Agenda* **2016**, *30*, 50–59. [[CrossRef](#)]
16. Zakar, R.; Zakar, M.Z.; Krämer, A. Spousal violence against women in the context of marital inequality: Perspectives of Pakistani religious leaders. *Int. J. Confl. Violence (IJCV)* **2011**, *5*, 371–384.
17. Jakobsson, A.; von Borgstede, C.; Krantz, G.; Spak, F.; Hensing, G. Possibilities and hindrances for prevention of intimate partner violence: Perceptions among professionals and decision makers in a Swedish medium-sized town. *Int. J. Behav. Med.* **2013**, *20*, 337–343. [[CrossRef](#)]
18. DiClemente, R.J.; Crosby, R.A.; Kegler, M.C. *Emerging Theories in Health Promotion Practice and Research: Strategies for Improving Public Health*; Wiley: Hoboken, NJ, USA, 2002.
19. Connell, R.W.; Connell, R. *Gender and Power: Society, the Person, and Sexual Politics*; Stanford University Press: Redwood City, CA, USA, 1987.
20. Risman, B.J.; Davis, G. From sex roles to gender structure. *Curr. Sociol.* **2013**, *61*, 733–755. [[CrossRef](#)]
21. Maharaj, Z. A Social theory of gender: Connell's Gender and Power. *Fem. Rev.* **1995**, *49*, 50–65. [[CrossRef](#)]
22. Wingood, G.M.; DiClemente, R.J. Application of the theory of gender and power to examine HIV-related exposures, risk factors, and effective interventions for women. *Health Educ. Behav.* **2000**, *27*, 539–565. [[CrossRef](#)]
23. Heise, L.L. Violence against women an integrated, ecological framework. *Violence Against Women* **1998**, *4*, 262–290. [[CrossRef](#)]
24. Pun, K.D.; Infanti, J.J.; Koju, R.; Schei, B.; Darj, E. Community perceptions on domestic violence against pregnant women in Nepal: A qualitative study. *Glob. Health Action* **2016**, *9*, 31964. [[CrossRef](#)] [[PubMed](#)]
25. Graneheim, U.H.; Lundman, B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ. Today* **2004**, *24*, 105–112. [[CrossRef](#)]
26. Elo, S.; Kyngäs, H. The qualitative content analysis process. *J. Adv. Nurs.* **2008**, *62*, 107–115. [[CrossRef](#)]
27. Hsieh, H.-F.; Shannon, S.E. Three approaches to qualitative content analysis. *Qual. Health Res.* **2005**, *15*, 1277–1288. [[CrossRef](#)]
28. Abeya, S.G.; Afework, M.F.; Yalew, A.W. 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. [[CrossRef](#)]
29. Yigzaw, T.B.Y.; Deyessa, N.; Kaba, M. Perceptions and attitude towards violence against women by their spouses: A qualitative study in Northwest Ethiopia. *Ethiop. J. Health Dev.* **2010**, *24*, 2010. [[CrossRef](#)]

30. Ali, T.S.; Krantz, G.; Gul, R.; Asad, N.; Johansson, E.; Mogren, I. Gender roles and their influence on life prospects for women in urban Karachi, Pakistan: A qualitative study. *Glob. Health Action* **2011**, *4*, 7448. [[CrossRef](#)] [[PubMed](#)]
31. Muche, A.A.; Adekunle, A.O.; Arowojolu, A.O. Gender-based violence among married women in Debre Tabor town, northwest Ethiopia: A qualitative study. *Afr. J. Reprod. Health* **2017**, *21*, 102–109. [[CrossRef](#)] [[PubMed](#)]
32. Shamu, S.; Shamu, P.; Machisa, M. Factors associated with past year physical and sexual intimate partner violence against women in Zimbabwe: Results from a national cluster-based cross-sectional survey. *Glob. Health Action* **2018**, *11*, 1625594. [[CrossRef](#)] [[PubMed](#)]
33. Samuels, F.; Le Masson, V.; Gupta, T. One step forwards half a step backwards: Changing patterns of intimate partner violence in Bangladesh. *J. Fam. Violence* **2019**, *34*, 107–118. [[CrossRef](#)]
34. Naved, R.T.; Samuels, F.; Le Masson, V.; Talukder, A.; Gupta, T.; Yount, K.M. *Understanding Intimate Partner Violence in Rural Bangladesh*; Overseas Development Institute: London, UK, 2017.
35. Coston, B.M. Power and Inequality: Intimate Partner Violence Against Bisexual and Non-Monosexual Women in the United States. *J. Interpers. Violence* **2017**. [[CrossRef](#)] [[PubMed](#)]
36. Vatnar, S.K.B.; Bjørkly, S. Does it make any difference if she is a mother? An interactional perspective on intimate partner violence with a focus on motherhood and pregnancy. *J. Interpers. Violence* **2010**, *25*, 94–110. [[CrossRef](#)] [[PubMed](#)]
37. Joshi, S.K.; Kharel, J.; Mentee, M.; World Health Organization (Geneva). Violence against women in Nepal: An overview. Available online: <https://pdfs.semanticscholar.org/1894/d041a485960d08e6487396649683fff63e95.pdf> (accessed on 18 November 2018).
38. Hilton, N.Z. Battered women's concerns about their children witnessing wife assault. *J. Interpers. Violence* **1992**, *7*, 77–86. [[CrossRef](#)]
39. Strube, M.J.; Barbour, L.S. Factors related to the decision to leave an abusive relationship. *J. Marriage Fam.* **1984**, *46*, 837–844. [[CrossRef](#)]
40. Fite, M.D. The Ethiopia's Legal Framework on Domestic Violence against Women: A Critical Perspective. *Int. J. Gend. Women's Stud.* **2014**, *2*, 49–60.
41. United Nations. The Federal Democratic Republic of Ethiopia, National report on the Implementation of the Beijing Declaration and Platform for Action. 2015. Available online: https://www.uneca.org/sites/default/files/uploaded-documents/Beijing20/NationalReviews/natl_review_ethiopia_-_eng.pdf (accessed on 18 November 2018).
42. Fite, M.D. International Journal of Gender and Women's Studies. *Am. Res. Inst. Policy Dev.* **2014**, *2*, 49–60.
43. Lawson, J. Sociological theories of intimate partner violence. *J. Hum. Behav. Soc. Environ.* **2012**, *22*, 572–590. [[CrossRef](#)]
44. Infanti, J.J.; Lund, R.; Muzrif, M.M.; Schei, B.; Wijewardena, K. team As. Addressing domestic violence through antenatal care in Sri Lanka's plantation estates: Contributions of public health midwives. *Soc. Sci. Med.* **2015**, *145*, 35–43. [[CrossRef](#)]
45. Gashaw, B.T.; Magnus, J.H.; Schei, B. Intimate partner violence and late entry into antenatal care in Ethiopia. *Women Birth* **2018**, in press. [[CrossRef](#)]
46. Mohammed, B.H.; Johnston, J.M.; Harwell, J.I.; Yi, H.; Tsang, K.W.-K.; Haidar, J.A. Intimate partner violence and utilization of maternal health care services in Addis Ababa, Ethiopia. *BMC Health Serv. Res.* **2017**, *17*, 178. [[CrossRef](#)]
47. Alhusen, J.L.; Ray, E.; Sharps, P.; Bullock, L. Intimate partner violence during pregnancy: Maternal and neonatal outcomes. *J. Women's Health* **2015**, *24*, 100–106. [[CrossRef](#)]
48. Van Parys, A.-S.; Deschepper, E.; Michielsen, K.; Galle, A.; Roelens, K.; Temmerman, M.; Verstraelen, H. Intimate partner violence and psychosocial health, a cross-sectional study in a pregnant population. *BMC Pregnancy Childbirth* **2015**, *15*, 278. [[CrossRef](#)] [[PubMed](#)]
49. Tiwari, A.; Chan, K.L.; Fong, D.; Leung, W.-C.; Brownridge, D.A.; Lam, H.; Wong, B.; Lam, C.M.; Chau, F.; Chan, A.; et al. The impact of psychological abuse by an intimate partner on the mental health of pregnant women. *BJOG An Int. J. Obstet. Gynaecol.* **2008**, *115*, 377–384. [[CrossRef](#)] [[PubMed](#)]
50. Gausia, K.; Fisher, C.; Ali, M.; Oosthuizen, J. Antenatal depression and suicidal ideation among rural Bangladeshi women: A community-based study. *Arch. Women's Ment. Health* **2009**, *12*, 351. [[CrossRef](#)] [[PubMed](#)]

51. Sanchez, S.E.; Qiu, C.; Perales, M.T.; Lam, N.; Garcia, P.; Williams, M.A. Intimate partner violence (IPV) and preeclampsia among Peruvian women. *Eur. J. Obstet. Gynecol. Reprod. Biol.* **2008**, *137*, 50–55. [[CrossRef](#)] [[PubMed](#)]
52. Campbell, J.C.; Soeken, K.L. Forced sex and intimate partner violence: Effects on women's risk and women's health. *Violence Against Women* **1999**, *5*, 1017–1035. [[CrossRef](#)]
53. Stockl, H.; Gardner, F. Women's perceptions of how pregnancy influences the context of intimate partner violence in Germany. *Cult. Health Sex.* **2013**, *15*, 1206–1220. [[CrossRef](#)]
54. Brownridge, D.A.; Taillieu, T.L.; Tyler, K.A.; Tiwari, A.; Chan, K.L.; Santos, S.C. Pregnancy and intimate partner violence: Risk factors, severity, and health effects. *Violence Against Women* **2011**, *17*, 858–881. [[CrossRef](#)]
55. Taillieu, T.L.; Brownridge, D.A. Violence against pregnant women: Prevalence, patterns, risk factors, theories, and directions for future research. *Aggress. Violent Behav.* **2010**, *15*, 14–35. [[CrossRef](#)]
56. Yoshihama, M.; Ramakrishnan, A.; Hammock, A.C.; Khaliq, M. Intimate partner violence prevention program in an Asian immigrant community: Integrating theories, data, and community. *Violence Against Women* **2012**, *18*, 763–783. [[CrossRef](#)]
57. Colombini, M.; Mayhew, S.H.; Ali, S.H.; Shuib, R.; Watts, C. An integrated health sector response to violence against women in Malaysia: Lessons for supporting scale up. *BMC Public Health* **2012**, *12*, 548. [[CrossRef](#)] [[PubMed](#)]
58. García-Moreno, C.; Zimmerman, C.; Morris-Gehring, A.; Heise, L.; Amin, A.; Abrahams, N.; Montoya, O.; Bhate-Deosthali, P.; Kilonzo, N.; Watts, C. Addressing violence against women: A call to action. *Lancet* **2015**, *385*, 1685–1695. [[CrossRef](#)]
59. Femi-Ajao, O. Intimate partner violence and abuse against Nigerian women resident in England, UK: A cross-sectional qualitative study. *BMC Women's Health* **2018**, *18*, 123. [[CrossRef](#)] [[PubMed](#)]
60. García-Moreno, C.; Hegarty, K.; d'Oliveira, A.F.L.; Koziol-McLain, J.; Colombini, M.; Feder, G. The health-systems response to violence against women. *Lancet* **2015**, *385*, 1567–1579. [[CrossRef](#)]
61. Bourke, B. Positionality: Reflecting on the research process. *Qual. Rep.* **2014**, *19*, 1–9.



© 2019 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).



Article

Ethiopian Health Care Workers' Insights into and Responses to Intimate Partner Violence in Pregnancy—A Qualitative Study

Bosena Tebeje Gashaw ^{1,2,*}, Berit Schei ^{3,4}, Kari Nyheim Solbraekke ⁵ and Jeanette H. Magnus ^{2,6}

¹ College of Health Sciences, Jimma University, 1355 Jimma, Ethiopia

² Faculty of Medicine, University of Oslo, 0316 Oslo, Norway; j.h.magnus@medisin.uio.no

³ Department of Public Health and Nursing, Faculty of Medicine and Health Sciences, University of Science and Technology, N-7489 Trondheim, Norway; berit.schei@ntnu.no

⁴ Department of Obstetrics and Gynaecology, St. Olav's Hospital, 7030 Trondheim University Hospital, N-7489 Trondheim, Norway

⁵ Institute of Health and Society, University of Oslo, 0318 Oslo, Norway; k.n.solbrakke@medisin.uio.no

⁶ Tulane School of Public Health and Tropical Medicine, New Orleans, LA 70112, USA

* Correspondence: bosenatebeje@gmail.com

Received: 30 March 2020; Accepted: 11 May 2020; Published: 25 May 2020



Abstract: Violence against women is a global pandemic, with the potential to spread through generations. Intimate partner violence has impacts on women's sexual, reproductive, and psycho-social health. It can occur during pregnancy and adversely affect the health of both mother and child. Health care workers involved in antenatal care can have a unique role in identifying intimate partner violence and in intervening, preventing, and mitigating its consequences. In this study, the objective was to explore Ethiopian health care workers' insights of and responses to intimate partner violence in pregnancy. Using an exploratory design, this qualitative study includes ten semi-structured interviews of health care workers representing different antenatal care centers in Jimma, Ethiopia. The content analyses of translated interview notes were conducted with Atlas.ti7 software, (Atlas.ti Scientific Software Development GmbH, Berlin). The health care workers shared their insights of the consequences of intimate partner violence during pregnancy in addition to their experience with and responses to the victims. There was a limited understanding of the extent of the adverse impacts of intimate partner violence on pregnancy outcomes, as well as the potential long-term health implications. The informants described how they only gave medical treatment for obstetric complications or visible trauma during pregnancy. There was no formal referral to or linkages with other resources. Women's empowerment and systemic changes in the health care, including training and capacity building, clear guidelines addressing management of intimate partner violence in pregnancy, and inclusion of intimate partner violence screening tools in the Ethiopian antenatal care chart/card, were recommended by the informants. The adverse impacts of intimate partner violence on pregnancy outcomes were poorly understood by the Ethiopian health care workers in this study. They offered limited assistance to the victims and recommended changes in the routine antenatal care (ANC) and health care systems. They identified various policy initiatives focusing on women's empowerment to reduce intimate partner violence and its complications especially during pregnancy.

Keywords: pregnancy IPV; health care workers; insights and responses; guidelines and IPV screening tools; training; women's empowerment; Ethiopia

1. Introduction

Intimate partner violence (IPV) is a pervasive public health problem globally, affecting one in three women [1]. IPV figures are at an epidemic level in the Sub-Saharan Africa [1,2]. It affects more than three in four women in Ethiopia during their lifetime, and more than a third of all pregnant women [3–7]. Furthermore, the IPV prevalence is higher during pregnancy than any obstetric complications routinely screened for during antenatal care (ANC) visits [8,9]. Women exposed to IPV prior to pregnancy, during pregnancy, and/or during the postpartum period are more likely to experience adverse short- and long-term physical, reproductive, and mental health consequences [10–14]. IPV in pregnancy may increase women's vulnerability to psychological distress and reduce the victim's coping skills to survive other stressful life events [15]. It also adversely affects the fetus by increasing the risk of intrauterine fetal death, preterm birth, and low birth weight [16,17].

Health care workers (HCWs) are critically significant in advancing the health sectors' responses to IPV in general and during pregnancy in particular [16]. They can identify women experiencing violence, and provide support and adequate care. Studies show that screening for IPV provides a distinctive opportunity for identification and interventions [18–20]. Health care workers, specifically nurses and midwives working at antenatal care (ANC) centers, are in a unique position to address issues related to IPV with pregnant women [17].

However, the personal perceptions and response of HCWs to IPV in pregnancy can serve as a facilitator or as a barrier when integrating IPV prevention, care and supportive services into health care practice [18]. Some HCWs are willing to address IPV in their clinical activities regarding identification of IPV as a preventive health care issue [19], while others do not support including IPV screening tools in their prenatal reports [20,21].

In Ethiopia, 36% women report IPV in pregnancy, and as many as 81% report lifetime physical or emotional IPV experience [7,22]. IPV screening is not included in ANC services in Ethiopia, where 74% of the pregnant women have at least one ANC visit [23]. Thus, ANC clinics provides an ideal 'window of opportunity' to address IPV, as this might be the only time most women come into contact with a health care providers.

In order to get a deeper understanding of Ethiopian ANC clinic health care workers insights of and responses to IPV during pregnancy [24], we developed a qualitative study. Considering the rate of IPV in pregnancy, its impact on the health of the pregnant woman and her unborn fetus [25,26], the ANC visit creates an opportunity for HCWs to identify and interact with IPV victims.

2. Methods and Participants

2.1. Study Design

A qualitative approach using semi-structured interviews was employed to explore the insights and responses of different HCWs from different ANC clinics related to IPV in pregnant women.

2.2. Study Setting

The study was conducted from November 2015 to 30 April 2016, in Jimma town, Oromiya regional state, one of the largest cities in Ethiopia. This multi-ethnic town is located 352 km southwest of the capital, Addis Ababa, distinguished by different religions, cultures and languages, with a total population of 177,900 (CSA, 2015).

2.3. Participants

Ethical approval was obtained from the Norwegian Regional Ethical Committee, Norway and Jimma university institutional review board, Ethiopia. Permission was provided by the respective administrative health bureaus. We presented the objective of the study to the heads of each institution, who recruited the participants among their staff members working at ANC in Jimma town. Following this, participants were contacted in person to arrange an appointment that was convenient with their

working schedule. Participant characteristics included: professional men and women (age 23–51 years); service years ranging 3–32; married and unmarried; of different religions (Table 1).

Table 1. Characteristics of the study participants (N = 10).

Participant Characteristics		n
Age	18–35	7
	36–51	3
Sex	Male	1
	Female	9
Marital status	Married	8
	Single	2
Religion	Orthodox	4
	Muslim	3
	Protestant	3
Occupation	Nurse	7
	Midwife	3
Level of Education	Diploma	4
	BSc degree	6
Service years	3–14	7
	15–32	3

2.4. Data Collection Tools and Procedures

The interview guide was designed to capture the participants' understanding of the consequences of IPV in pregnancy; individual encounters with and professional responses to pregnant IPV victims; as well as their reflections and recommendations on what could or should be done about IPV in pregnancy. The authors developed the interview guide based on prior experience, expert opinions, and after reviewing relevant literature on the subject. The interview guide was pretested in institutions at other sites with similar characteristics for clarity. We obtained the informants' voluntary consent prior to the interview after explaining the aim of the study. Before initiating the interviews, measures were taken to make participants relaxed using different techniques (set induction, such as, small talk for a few minutes), which would help them remain conformable during the interview. We also assured participants that their response will be kept confidential and conducted the interviews at their work place, privately.

We prepared for taping the interviews, but as the majority of the informants declined, the primary investigator (first author) conducted face-to-face interviews with two trained note takers having MSc and midwifery backgrounds took comprehensive notes during the sessions. The interviews lasted an hour on average and were conducted in Amharic, as the interviewer, assistants, and interviewees were all able to speak the Amharic language. The richness of the notes were further strengthened by debriefing sessions (discussing the notes) with the informants right after completion of each interview, and text analyses were conducted as planned.

In an effort to minimize bias, participant health care workers were asked to provide their insights and experiences of IPV in pregnancy, not their own personal experiences. We focused on conceptual requirements, and continued data collection until no additional information emerged and we reached saturation [27,28]. The notes were later translated into English by the interview team and checked by others (outside the research team) with English and Amharic proficiency to ensure accuracy. In order to clarify statements, three set of notes were discussed later with the informants, and amended.

2.5. Data Processing and Analysis

The consolidated criteria for reporting qualitative research (COREQ) was followed in this study. COREQ is a formal reporting guideline that helps the researchers to comprehensively report crucial features of a qualitative study [29]. The data collection and analysis were conducted concurrently in line with the iterative nature of qualitative methods [30,31]. The first author did the data coding and categorizing using the Atlas.ti software. Then the co-authors reviewed and agreed upon the final list of categories and themes.

We used Atlas.ti7 software [32], an efficient device to organize, capture, and analyze data, facilitating sharing between the researchers, as it provide an overview of the findings during the analytical process. This ensured a systematic process of coding, recognizing themes and categories based on previous research on IPV and the emerging issues, while interpreting the content of the textual data, as illustrated in Table 2 in the text. The decision regarding which item belongs to which particular set (i.e., a group, a category, a pattern, a theme) is a matter of judgment for the researcher/s based on preset criteria or purpose [33–36]. Furthermore, the content analysis, used to analyze our data, involves an interpretation through systematic process of coding while recognizing themes or categories [36,37]. The categories or themes describing the issue are the outcomes of the content analysis and its goal is to provide knowledge and understanding of the issue under study [38,39].

Table 2. Procedures/steps of data analysis in Atlas Ti, based on the content analysis.

Steps	Descriptions
Familiarizations	All scripts were read to make a general sense out of it and reflect on the overall meaning
Creating file naming	Create file name and save the project (under new hermeneutic unit/analysis project) and add document in the library
Importing files	Import all scripts (#10 Interviews) lined up under 'P-Docs'
Condensed meaning unites	Open each scripts turn by turn and create meaning unites that gives sense
Coding	Create codes/label (under code manager) Highlight quotations for each scripts, then drug and drop codes for each respective quotations, or create new codes as necessary
Categorizing	Categorize/create family codes (themes) based on similarities
Producing outputs(categories/families)	Open code manager, click on each codes, click on outputs and save each outputs of the codes of categories/families
Data familiarization	For more data familiarization, scripts were read repeatedly alongside field-notes
Result (describing themes and quotations)	In the result section—a detail description of each output of categories under the respective themes, based on the content Analysis method (selected for this specific analysis) and include supporting quotations in each respective theme.
Discussion	In the discussion—interpret results and discuss them in light of relevant literatures within the topic.

2.6. Ethics and Consent

Ethical approval to conduct the study was obtained from Jimma University College of Health Sciences, IRB, Ref No: HRPGC/305/2015 and the Norwegian Regional Ethical Committee (REK), Ref No: 2015/623/REK Nord, in accordance with the Helsinki Declaration of 1975, revised in 2008. Subsequently, permission to initiate the data collection was obtained from the Jimma town health bureau and Jimma University specialized hospital (JUSH) in response to the collaboration letter written from Jimma University College of Health Sciences. Furthermore, informed written and verbal consent from the respondents was obtained before data collection. A list of the participant numbers (code), as well as the signed consent forms were kept locked in a file cabinet, where no one had access to it, and the respondents were fully anonymized to assure the confidentiality of their responses, their voluntary participation and the right to terminate their participation at any time.

Care was also taken that the interviews did not cause ethical or emotional trauma for the participant HCWs or the interview team. The training and preparation prior to the interviews enable the interviewers to discuss various scenarios promoting a professional non-verbal and verbal attitude during the interviews. The HCWs expressed satisfaction with the interview and the discussion on the notes possibly served as a debriefing session, and to enrich our data.

3. Results

The themes emerging among the Ethiopian HCWs were: 1. the important adverse IPV outcomes are physical health consequences; 2. recommendation of reconciliation with perpetrator; and 3. health care systems change is imperative if IPV in pregnancy are to be addressed. Each theme is briefly exemplified using direct quotes from the interviews.

3.1. Mainly Physical Health Consequences Were Accepted as an Adverse Outcome

Participant HCWs described encountering many pregnant women with varying degrees of IPV-related injuries, including bleeding, abortion, preterm labour or birth, intrauterine death, and stillbirths. However, they do not help them much other than dressing visible trauma and its obstetric complications related to their clinical training. They emphasized that physical violence particularly can adversely affect the health of the mother and fetus, and that they focus their help on it.

“Partner violence during pregnancy especially physical violence is dangerous and may cause the death of woman and fetus, and should be considered as attacking two lives simultaneously”. (Nurse)

Although the respondents mostly talked about physical impact of IPV, the generic impact IPV has on any aspect of a woman’s life was acknowledged, including that the co-occurrence of pregnancy and IPV may exceed what a pregnant victim can cope with.

“Pregnancy by itself causes different problems and IPV on top of this might be unbearable”. (Midwife)

The impact of IPV during pregnancy may restrict survivors’ access to every aspect of life and opportunities, including utilization of maternal health services and prenatal care. One participant relates how IPV, specifically a partner’s controlling actions, acts as a barrier for women’s health care utilization.

“Partners who have controlling behavior patrol every step of their wives’ movement and life. They are controlling everything, including her access to money, her movement, and the need for maternal health care service utilization, including antenatal care (ANC) visits”. (Nurse)

The HCWs also expressed that they do not ask women if they were victims of IPV, as they fear and lack skill in managing the resultant consequences and emotional problems while asking and talking about history of abuse.

“Whenever we meet victims, we only treat visible trauma, stop bleeding and dress open wounds, that is all. Unless they open it up, nobody will ask, as we cannot offer much help if they disclose it”. (Midwife)

Health care institutions’ linkage with relevant organizations, would improve the responses to victims of partner violence, but there is no such formal arrangement in the studied facilities to refer IPV victim-survivors for further assistances.

“We do not have formal lines to refer intimate partner violence victims; we only treat visible trauma and send them back home”. (Midwife)

Other reasons given for the limited assistance provided by the HCWs were: the absence of IPV on the items listing of the ANC chart, lack of guidelines on how to manage IPV, lack of skills and knowledge on how to screen, and instructions on how to help, IPV victims. The following statements substantiate their responses:

“Many times I met victims of partner violence with obstetric complications, but I did not help them much, other than clinical management, I myself was even beaten by my husband; I think IPV has nothing to do with ANC, because it is not listed in the ANC card, mainly we focus on whether fetus is injured or not, and check fetal movement and heart rate”. (Nurse)

“I had a pregnant woman beaten by her husband to death, she started to have vaginal bleeding, and then a dead fetus was expelled. We gave only medical care because there is no guideline to follow, we do not know how to help, and we have no skill for managing it (IPV)”. (Midwife)

“I met victims many times, especially I do remember a pregnant woman whose husband is heavy Khat (stimulant) user and she told me that he sexually abused and made her to sufferer throughout the night and caused her genital trauma but because it is not indicated in the ANC card, I even do not know how to ask and help out”. (Nurse)

3.2. Reconciliation in IPV

Advising victims to calm down, asking them to bring their husbands to indirectly teach abusers that IPV in pregnancy may affect the fetus (without mentioning what happens (the IPV) between the couple) was strategies expressed by the HCWs. One of the reasons for this was that, because most women had several children, leaving their husband holds many consequences, making advice of reconciliation the only options:

“I usually advice victims to reconcile with their husbands, because children should not be brought up without father”. (Midwife)

Women’s economic dependency on their husbands, being housewives with nowhere to go if evicted from their house, were also mentioned by the HCWs when justifying advising victims of reconciliation. Comments made by participants are illustrative:

“I met many victims, including pregnant partner violence victim women. As most of them are economically dependent on their husband, I used to advise them to reconcile with their husbands”. (Nurse)

“I met pregnant woman victim of IPV who developed complication as a consequence, I did nothing, but referred her to specialized hospital, and dead fetus expelled then she got back to her husband”. (Nurse)

Our study revealed partner violence is perceived to be widespread and not seen as a big deal by many, including police officers. The participants in our study explained that if a woman resorts to police and when the police realize that the perpetrator is her husband, they immediately refer her to neighbors for reconciliation. Additionally, when the partner finds out his wife stepping to police, he would even become more aggressive and fired her from home. In Ethiopia, there is no linkage or system that allows HCWs reporting IPV to police that may assist them to hold perpetrators accountable for their actions, further forcing HCWs to encourage reconciliation over reporting to police. The responses reflect the community acknowledgement and attitude towards IPV, possibly related to the prevailing male-dominated traditional values and gender norms. The following participant quote demonstrates how police downplay IPV:

“Survivors should not go to police directly, rather turn to their family, because if they go to police things will get much worse. I think going to police has no importance, even perpetrator may start joking on her and say let the police save you”. (Midwife)

In the discussion, we also discovered victim women’s previous experience of police deterring women to resort to police assistance, and forcing HCWs’ to prefer reconciliation.

“I saw specially one woman severely beaten, I’ve never seen such incident in my life . . . hmmm, and her flesh was visible. We advised her to go to police but she refused, because she went to police previously and police referred her back to reconcile with her husband”. (Midwife)

3.3. Changes in the Health Care Systems

The participating HCWs highlighted that IPV so far had not been given any priority by Ethiopian government bodies or the community. In order to prevent IPV in pregnancy and its threats to pregnancy outcomes, training and capacity building, developing and use of IPV intervention guidelines, and women’s empowerment were emphasized by the HCWs.

Participants acknowledged the need to train HCWs, including health extension workers working at the grassroots level in Ethiopia, on how to take care of pregnant women experiencing IPV.

“We need to be knowledgeable and teach the public about IPV and its consequences on pregnancy like we do on birth preparedness and complication readiness”. (Nurse)

The need to develop and use guidelines to manage victimized pregnant women, along with clear referral linkage with other resource centers help HCWs to adequately deal with IPV issues when presented in the ANC setting was also stressed by the participants. HCWs claimed the absence of IPV screening tools in the lists of ANC card as one of the reasons for not asking women about their victim status and considering it as part of their responsibilities.

“We need to have clear guidelines, and IPV screening tools should be included in the ANC and family planning cards so that we can assist victim survivors”. (Nurse)

The importance of raising public awareness about the harmful effects of IPV on pregnancy, the current legislation and women’s rights related to IPV were highlighted. More specifically, the HCWs emphasized that they need to have training on women’s rights related to IPV in order to be able to assist, to advise victims on what to do and where to go when abused.

“Even we do not know about women’s rights properly, but if we had enough knowledge about the issue, we could teach others”. (Nurse)

Empowering women through education, employment, and income-generating activities was also emphasized by the participants to bring a sustainable national solution towards the prevention of IPV. Participants particularly underscored the prevention and liberation of women from IPV requires income-generating activities for women. They strongly recommended this, as most women in Ethiopia are housewives and need to have their own earnings. One participant voiced:

“I would suggest a sustainable solution including short-term training especially for housewives, in order to generate their own money”. (Nurse)

4. Discussion

This is one of few qualitative studies in East Africa addressing HCWs perspectives on IPV in pregnancy [40,41]. The participant HCWs expressed a fear that IPV during pregnancy could discourage victims to visit ANC centers and that it could result in obstetric complications such as bleeding and abortion, which is in concert with international studies [26,42]. They also claimed that it is mainly physical violence that gives adverse outcomes on pregnancy and gave their recommendations on what could be done related to IPV during pregnancy and its adversaries.

The HCWs in our study highlighted mainly physical adverse obstetrical outcomes on pregnancy (bleeding and abortion), illustrating a knowledge gap related to the impacts of IPV on pregnancy in general and the impacts of sexual and psychological IPV on pregnancy outcomes in particular. This is supported by prior studies which noted that HCWs are more likely to focus on physical abuse to respond to IPV and/or during prenatal care visits [43,44].

In this Ethiopian context, such response is not unexpected. There is a common proverb in Ethiopian communities, “an insult never tear cloths” which support and illustrate the importance of the physical harm of IPV. However, many studies illustrate the ongoing effect of psychological violence (emotional torture, mental stress, or living under terror) can be as unbearable as physical brutality, and consequently affecting pregnancy outcomes [45,46]. Similarly, not only physical IPV, but also psychological, sexual IPV in pregnancy adversely affect maternal and fetal well-being. For instance, women who are psychologically abused can be at a greater risk of postnatal depression, are more likely to think about harming themselves and their infants [46,47], while emotional IPV is linked with preeclampsia [26,48] and hypertension [26]. In line with the reflections of the HCWs in our study, prior studies have documented the effect IPV has on maternal health service utilization [22,49,50], illustrating that the impacts of IPV in pregnancy is multifaceted [42,51].

4.1. The Role of HCWs in Addressing IPV in Pregnancy

HCWs can help address IPV during pregnancy both through screening, provider-based counseling and referral to legal or social services [52]. In the ANC setting, they have a unique opportunity to identify women experiencing IPV, assess feto–maternal well-being, provide ongoing support [53,54], and prevent complications. The 2013 clinical guidelines developed by WHO, recommend that health systems responses to violence against women should be integrated within clinical care at all levels [53]. Contrary to this recommendation, most health sectors have been rather slow to integrate violence against women into their routine practices [53,55–57]. The Ethiopian health system is no exception, and is ill-equipped to deal with IPV, as emphasized by our informants.

Most women [58,59], are reluctant to disclose their experiences of IPV because of the traditional gender attitudes and role perception, and possibly because of fear of further violence or other consequences. As evidenced by our study, very few pregnant victims open up to health care professionals after being brutally hurt. The HCWs participating in our study, shared feelings of frustration and powerlessness to deal with abused pregnant women due to their limited knowledge, responsibility and ability to provide any support, consequently limiting their role to obstetric and medical care for those with visible trauma. The HCWs also feared that asking and talking about abuse with the victims may cause unpredictable and harmful results, as it may open a ‘Pandora’s box’, for which they had neither the skills nor the time to deal with. This is in line with an earlier study in Norway that noted the midwives’ “fear of knowing” how to deal with a positive answer was one of the barriers to asking pregnant women about their experiences of violence [60].

The participants in our study also stated how they did not feel mandated to help the IPV victims, as it was not clearly indicated within the domain of health care. This is consistent with other studies illustrating how many HCWs feel poorly prepared to ask questions about domestic violence or to make appropriate referrals if abuse was disclosed [61,62]. Studies also demonstrated that most HCWs never or seldom ask about abuse when a woman presents with injuries [63]. Another study found that midwives perceived IPV as a non-clinical, social, and domestic problem that does not call for their attention [40]. Likewise, studies elsewhere [64,65], and a recent study in Australia showed that community health care professionals’ barriers to screening pregnant women for violence originated from a lack of recognizing it as a part of their role [66]. This was enforced by lack of domestic violence screening policies, lack of time, lack of resources, safety issues, and lack of confidence in undertaking the screening and referral [66]. Contrary to this, a recent study in South Africa demonstrated that HCWs were supportive to addressing IPV in the health care setting, including identification of and responding to IPV in the antenatal care given appropriate training and referral system [19]. Another

study in Serbia reported HCWs as willing to help victims of IPV, but that they did not know how [18], demonstrating the gap between HCWs' willingness to address IPV and the educational and training resources needed.

4.2. Reconciliation in IPV during Pregnancy

The participants in our study highlighted that, although the IPV was brutal, the pregnant women might rarely reveal their victim status to the HCWs. Apart from other reasons, the reconciliation recommendations and actions of the nurses and midwives in our study might be affected by the traditional community concepts related to IPV, including the social taboo of discussing family matters with outsiders, the common belief in male superiority, and the complementary female submissiveness [67], indicating how the respondents' own cultural beliefs may influence their professional attitude or actions regarding IPV [44]. There was a clear lack of concept related to how to manage IPV in an ANC setting. IPV victim management requires addressing women's psycho-social needs, including respectful and non-judgmental listening; confidential interaction and showing compassion; providing support information; referrals to specialist help; addressing safety concerns, and so forth [68], in addition to good obstetric and medical care.

4.3. Systems Change in the Health Care Setting Is Imperative

The participant HCWs highlighted what could be done towards the prevention of IPV in pregnancy and its consequences in Ethiopia, recommending systems change, specifically in health care. The Ethiopian culture and religion do not encourage discussing or disclosing IPV with others [69], nevertheless, the HCWs recommended several issues to be considered. This included public education on the harmful effects of IPV on pregnancy. The government has a responsibility to raise public awareness about the rights of women, as stipulated in the Ethiopian constitution. The HCWs in conjunction with other relevant agencies should play a key role in the prevention of IPV during pregnancy. It is also evidenced that in most high income countries, HCWs perform a primary prevention and/or health promotion role in conjunction with other agencies [42,70,71], where information on IPV are integrated in their routine health education messages and promoting of positive parenting [53]. A systematic evaluation of IPV prevention done in low and middle income countries, highlights the potential effectiveness of structural interventions for IPV prevention [72], signifying that intervention strategies for IPV should vary depending on the socio-cultural, economic and geographic contexts.

4.3.1. Training and Capacity Building

The need for training of the HCWs, including health extension workers (HEWs), and other community health care workers in Ethiopia was emphasized by the participants of our study. Our result is supported by the WHO report which states that community efforts and awareness-raising play a key role in primary prevention [73], which can lead to increased demand for justice, care for the survivors, and punishment for the perpetrators, particularly in settings where resources are limited [74].

Raising the awareness of both the public and the HCWs about legislations on IPV as well as on other women's rights issues were also highlighted as a need by our study participants. Prior studies demonstrate that training and strengthening of health systems through abuse assessment protocols, capacity building, effective coordination between relevant agencies, and referral networks can enable health care providers to better address violence against women in their practices [17,53].

4.3.2. Develop Intervention Guideline

The participants in our study suggested developing and including IPV screening tools in the Ethiopian ANC chart/card, conducting short-term training for HCWs, creating comprehensive legislation and guidelines on how to manage IPV in general and IPV in pregnancy more specifically, as an imperative to properly assist pregnant victims. In concordance with our findings, other studies recommend the incorporation of an abuse assessment protocol into the routine prenatal clinics as

this increases the assessment, identification, and documentation and referral of abused pregnant women [75,76]. Effective intervention in IPV also requires health care services linking with other relevant sectors [69], including with police. But, participants in our study do not support reporting IPV victim survivors to police and they are not mandated to do so, while there are countries (e.g., the US), obligating HCWs' mandatory reporting of IPV to police [77]. However, such action requires further risk and benefit analysis as it may escalate the rate of IPV and/or may not guarantee to a greater safety and well-being of survivors and HCWs. Thus, a culturally sensitive and carefully designed health systems' response in addressing IPV in the ANC clinics will be an important step in achieving sustainable impact towards improving maternal and infant health in the country.

4.3.3. Empowering Women

In our study, the participants underlined the need to produce a sustainable solution to prevent IPV in pregnancy and liberate women from IPV by empowering them through education, employment, and income-generating activities. This was especially recommended for housewives, in order for them to generate their own money, which is in concert with other studies stating that empowered women are less likely to experience IPV [78,79]. A recent study also demonstrated that a higher income was associated with lower past-year physical IPV [80]. Among others, possible explanations for a relationship between women's empowerment and IPV might be that empowered women may have more information on IPV, be more likely to make decision on their own life and thus more likely to seek help from different sources. While disempowered women, including those having financial constraints, have limited ability to access information and health care services [81]. This is reinforced by the societal norms that encourages maintaining the marriage for the sake of children, family, and better social positions or respect [69,82].

Most women in Ethiopia are economically dependent on their husbands [83], and have many children which may force them to stay in abusive relationships. Women's economic dependency on their partners is also profoundly deterring many women to sending their abusive partner to prison [84]. Although the relationship between women's empowerment and IPV are inconclusive, it can be argued that, empowering women economically may encourage increased independence and consequently help women to exit from their abusive relationship [85]. In fact, it may not be the sole solution to protect women against IPV, but if combined with education and the transformation of cultural gender norms that negatively affect women, along with providing other services, it may ultimately protect women from IPV [79,86,87]. Additionally, empowering women and improving their status is of societal importance and essential for achieving the national sustainable development goals [88,89].

4.4. Limitations and Strengths

To increase the validity of data and reduce bias, we requested verifications and/or corrections to the notes at the end of each session, and used additional interviews when necessary. We accounted for the researchers' positionality by having two note-takers in addition to the interviewer in the room, in this way minimizing the influence of the unique identities, experiences, and biases that researchers bring to a given study [90]. Similarly, taking into account the nature of qualitative study, subject and participants (i.e., the responses of female participants may be influenced by their own experience of IPV), care was taken that the participants' focused their responses on the objective of the study.

However, this study has also some limitations. The subject being studied is very sensitive and shaped by social norms and values. Consequently, the participants may not have disclosed the real scenario about the topic or may have provided biased information. As the majority of participants declined to be taped, we did not record the interviews, but we tried to reduce these gaps by running the sessions using the PI moderating the sessions and two note takers (to ensure the participants own responses) who are familiar with the subject matter. The debriefing while discussing the notes with the interviewee after the session was experienced as positive. Summary notes were developed by the main researcher and the assistants immediately after each session.

The gender of the informants was mainly women, and this might put some limitations on the results. On the other hand, as the general profiles of the health care workers who engage in contact with women are women themselves, we find the gender composition to be relevant for the research question of the study.

As in most qualitative studies, our findings cannot be generalized to a larger population. However, in accordance with the quality criteria of transferability, we argue that the knowledge obtained from this study could be of interest for others in similar settings/contexts.

5. Conclusions

The analysis of our study highlights that Ethiopian HCWs encounter pregnant IPV victims frequently, however, their understanding of the adverse impacts of IPV on pregnancy and their professional response to IPV are limited. Improving the capacity of HCWs in addressing IPV in pregnancy through training and subsequent capacity building could improve their knowledge base and skills. The HCWs called for interventions aimed at advancing women's empowerment through education, employment, and income generating activities as means to prevent IPV in pregnancy and its consequences. The informants also recommended that improving and linking the health sector response with other relevant institutions, and incorporating IPV screening tools in the Ethiopian ANC chart/card along with a clear guidelines, could alleviate IPV during pregnancy and its adverse impacts on mother and fetus. Effectiveness studies of cross-sectorial complex interventions, aimed at reducing IPV in Ethiopia, are also warranted.

Author Contributions: Conceptualization, B.T.G., J.H.M., and B.S.; methodology, B.T.G., J.H.M., B.S., and K.N.S.; data collection and software, B.T.G.; formal data analysis and interpretation, B.T.G., J.H.M., B.S., and K.N.S.; investigation, B.T.G., J.H.M., B.S., and K.N.S.; project administration, J.H.M.; supervision, J.H.M., B.S., and K.N.S.; visualization, B.T.G.; writing—original draft, B.T.G.; writing—review and editing, B.T.G., J.H.M., B.S., and K.N.S. All authors have read and agreed to the published version of the manuscript.

Funding: This project was supported by NORAD (Norwegian Agency for Development Cooperation) under the NORHED-Programmed, Agreement no. ETH-13/0024, but the funding body had no role in the data collection and analyses, writing of the manuscript and decision to submit the manuscript for publication.

Acknowledgments: The Jimma Town Health Bureau, Institutions and JUSH administrators, midwives and nurses working at ANC and the research assistants and participants from different institutions all deserve acknowledgements for their collaboration. We are also grateful to our funding agency, NORAD project.

Conflicts of Interest: No potential conflict of interest is reported by the authors.

References

1. García-Moreno, C.; Pallitto, C.; Devries, K.; Stöckl, H.; Watts, C.; Abrahams, N. *Global and Regional Estimates of Violence against Women: Prevalence and Health Effects of Intimate Partner Violence and Non-Partner Sexual Violence*; World Health Organization: Geneva, Switzerland, 2013.
2. Ahinkorah, B.O.; Dickson, K.S.; Seidu, A.-A. Women decision-making capacity and intimate partner violence among women in sub-Saharan Africa. *Arch. Public Health* **2018**, *76*, 5. [[CrossRef](#)] [[PubMed](#)]
3. Alebel, A.; Kibret, G.D.; Wagnew, F.; Tesema, C.; Ferede, A.; Petrucka, P.; Bobo, F.T.; Birhanu, M.Y.; Tadesse, A.A.; Eshetie, S. Intimate partner violence and associated factors among pregnant women in Ethiopia: Asystematic review and meta-analysis. *Reprod. Health* **2018**, *15*, 196–212. [[CrossRef](#)] [[PubMed](#)]
4. Gebrezgi, B.H.; Berta, M.; Cherkose, E.A.; Weldehaweria, N.B. Factors associated with intimate partner physical violence among women attending antenatal care in Shire Endasselassie town, Tigray, northern Ethiopia: Across-sectionalstudy, July 2015. *Reprod. Health* **2017**, *14*, 76. [[CrossRef](#)] [[PubMed](#)]
5. Abate, B.A.; Wossen, B.A.; Degfie, T.T. Determinants of intimate partner violence during pregnancy among married women in Abay Chomen district, Western Ethiopia: A community based cross sectional study. *BMC Women's Health* **2016**, *16*, 16. [[CrossRef](#)]
6. Laelago, T.; Belachew, T.; Tamrat, M. Prevalence and Associated Factors of Intimate Partner Violence during Pregnancy among Recently Delivered Women in Public Health Facilities of Hossana Town, Hadiya Zone, Southern Ethiopia. *OALib* **2014**, *1*, 1–9. [[CrossRef](#)]

7. Gashaw, B.T.; Schei, B.; Magnus, J.H. Social ecological factors and intimate partner violence in pregnancy. *PLoS ONE* **2018**, *13*, e0194681. [[CrossRef](#)]
8. Devries, K.; Kishor, S.; Johnson, H.; Stoeckl, H.; Bacchus, L.J.; Garcia-Moreno, C.; Watts, C. Intimate partner violence during pregnancy: Analysis of prevalence data from 19 countries. *Reprod. Health Matters* **2010**, *18*, 158–170. [[CrossRef](#)]
9. Mezey, G.C.; Bewley, S. Domestic violence and pregnancy: Risk is greatest after delivery. *Br. Med. J. Publ. Group* **1997**, *314*, 1295. [[CrossRef](#)]
10. Machisa, M.; Christofides, N.; Jewkes, R.K. Mental health in structural pathways to women's experiences of intimate partner violence. *PLoS ONE* **2017**, *12*, e0175240. [[CrossRef](#)]
11. Donovan, B.; Spracklen, C.; Schweizer, M.L.; Ryckman, K.; Saftlas, A.F. Intimate partner violence during pregnancy and the risk for adverse infant outcomes: A systematic review and meta-analysis. *BJOG Int. J. Obs. Gynaecol.* **2016**, *123*, 1289–1299. [[CrossRef](#)]
12. Schei, B.; Lukasse, M.; Ryding, E.L.; Campbell, J.; Karro, H.; Kristjansdottir, H.; Laanpere, M.; Schroll, A.-M.; Tabor, A.; Temmerman, M.; et al. A History of Abuse and Operative Delivery—Results from a European Multi-Country Cohort Study. *PLoS ONE* **2014**, *9*, e87579. [[CrossRef](#)] [[PubMed](#)]
13. Henriksen, L.; Vangen, S.; Schei, B.; Lukasse, M. Sexual Violence and Antenatal Hospitalization. *Birth* **2013**, *40*, 281–288. [[CrossRef](#)] [[PubMed](#)]
14. Heise, L.E.; Iltis, M.; Gottmoeller, M. A global overview of gender-based violence. *Int. J. Gynecol. Obs.* **2002**, *78*, S5–S14. [[CrossRef](#)]
15. Orzechowska, A.; Zajackowska, M.; Talarowska, M.; Gafekci, P. Depression and ways of coping with stress: A preliminary study. *Med. Sci. Monit.* **2013**, *19*, 1050–1056. [[CrossRef](#)]
16. Phelan, M.B. Screening for Intimate Partner Violence in medical settings. *Trauma Violence Abuse* **2007**, *8*, 199–213. [[CrossRef](#)]
17. WHO. *Responding to Intimate Partner Violence and Sexual Violence Against Women*; WHO Clinical and Policy Guidelines; World Health Organization: Geneva, Switzerland, 2013.
18. Djikanovic, B.; Celik, H.; Simić, S.; Matejic, B.; Cucic, V. Health professionals' perceptions of intimate partner violence against women in Serbia: Opportunities and barriers for response improvement. *Patient Educ. Couns.* **2010**, *80*, 88–93. [[CrossRef](#)]
19. Hatcher, A.; Woollett, N.; Pallitto, C.C.; Mokoatle, K.; Stoeckl, H.; Garcia-Moreno, C. Willing but Not Able: Patient and Provider Receptiveness to Addressing Intimate Partner Violence in Johannesburg Antenatal Clinics. *J. Interpers. Violence* **2016**, *34*, 1331–1356. [[CrossRef](#)]
20. Procentese, F.; DiNapoli, I.; Tuccillo, F.; Chiurazzi, A.; Arcidiacono, C. Health care Professionals' Perceptions and Concerns towards Domestic Violence during Pregnancy in Southern Italy. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3087. [[CrossRef](#)]
21. Deshpande, N.A.; Lewis-O'Connor, A. Screening for intimate partner violence during pregnancy. *Rev. Obstet. Gynecol.* **2013**, *6*, 141.
22. Gashaw, B.T.; Magnus, J.H.; Schei, B. Intimate partner violence and late entry into antenatal care in Ethiopia. *Women Birth* **2019**, *32*, e530–e537. [[CrossRef](#)]
23. Ethiopian Public Health Institute (EPHI) and ICF. *Ethiopia Mini Demographic and Health Survey Key Indicators*; EPHI and ICF: Rockville, MD, USA, 2019.
24. Jakobsson, A.; Vonorgstede, C.; Krantz, G.; Spak, F.; Hensing, G. Possibilities and Hindrances for Prevention of Intimate Partner Violence: Perceptions among Professionals and Decision Makers in a Swedish Medium-Sized Town. *Int. J. Behav. Med.* **2013**, *20*, 337–343. [[CrossRef](#)] [[PubMed](#)]
25. Shay-Zapien, G.; Bullock, L. Impact of Intimate Partner Violence on Maternal Child Health. *MCN Am. J. Matern. Nurs.* **2010**, *35*, 206–212. [[CrossRef](#)] [[PubMed](#)]
26. Han, A.; Stewart, D.E. Maternal and fetal outcomes of intimate partner violence associated with pregnancy in the Latin American and Caribbean region. *Int. J. Gynecol. Obs.* **2013**, *124*, 6–11. [[CrossRef](#)] [[PubMed](#)]
27. Saunders, B.; Sim, J.; Kingstone, T.; Baker, S.; Waterfield, J.; Bartlam, B.; Burroughs, H.; Jinks, C. Saturation in qualitative research: Exploring its conceptualization and operationalization. *Qual. Quant.* **2017**, *52*, 1893–1907. [[CrossRef](#)] [[PubMed](#)]
28. Moser, A.; Korstjens, I. Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *Eur. J. Gen. Pract.* **2018**, *24*, 9–18. [[CrossRef](#)]

29. Tong, A.; Sainsbury, P.; Craig, J.C. Consolidated criteria for reporting qualitative research (COREQ): A32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care* **2007**, *19*, 349–357. [[CrossRef](#)]
30. Lasch, K.E.; Marquis, P.; Vigneux, M.; Abetz, L.; Arnould, B.; Bayliss, M.; Crawford, B.; Rosa, K. PRO development: Rigorous qualitative research as the crucial foundation. *Qual. Life Res.* **2010**, *19*, 1087–1096. [[CrossRef](#)]
31. Miles, M.B.; Huberman, A.M.; Huberman, M.A.; Huberman, P.M. *Qualitative Data Analysis: An Expanded Source Book*; SAGE Publications: Thousand Oaks, CA, USA, 1994.
32. Graneheim, U.; Lundman, B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ. Today* **2004**, *24*, 105–112. [[CrossRef](#)]
33. Friese, S. *Qualitative Data Analysis with ATLAS.ti*; SAGE Publications Limited: Thousand Oaks, CA, USA, 2019.
34. Denzin, N.K.; Lincoln, Y.S. *The Sage Handbook of Qualitative Research*; SAGE Publications: Thousand Oaks, CA, USA, 2011.
35. Davidson, J.; diGregorio, S. Qualitative Research & Technology: In the Midst of a Revolution. In *The SAGE Handbook of Qualitative Research*, 4th ed.; Denzin, N.K., Lincoln, Y.S., Eds.; SAGE Publications: Thousand Oaks, CA, USA, 2011; pp. 627–643.
36. Hsieh, H.-F.; Shannon, S.E. Three Approaches to Qualitative Content Analysis. *Qual. Health Res.* **2005**, *15*, 1277–1288. [[CrossRef](#)]
37. Elo, S.; Kääriäinen, M.; Kanste, O.; Pölkki, T.; Utriainen, K.; Kyngäs, H. Qualitative Content Analysis. *Sage Open* **2014**, *4*. [[CrossRef](#)]
38. Vaismoradi, M.; Jones, J.; Turunen, H.; Snelgrove, S. Theme development in qualitative content analysis and thematic analysis. *J. Nurs. Educ. Pr.* **2016**, *6*. [[CrossRef](#)]
39. Cho, J.Y.; Lee, E.-H. Reducing confusion about grounded theory and qualitative content analysis: Similarities and differences. *Qual. Rep.* **2014**, *19*, 1–20.
40. Shamu, S.; Abrahams, N.; Temmerman, M.; Zarowsky, C. Opportunities and obstacles to screening pregnant women for intimate partner violence during antenatal care in Zimbabwe. *Cult. Health Sex.* **2013**, *15*, 511–524. [[CrossRef](#)] [[PubMed](#)]
41. Turan, J.M.; Hatcher, A.; Odero, M.; Onono, M.; Koderu, J.; Romito, P.; Mangone, E.; Bukusi, E.A. A Community-Supported Clinic-Based Program for Prevention of Violence against Pregnant Women in Rural Kenya. *Aids Res. Treat.* **2013**, *2013*, 1–10. [[CrossRef](#)] [[PubMed](#)]
42. Alhusen, J.L.; Ray, E.; Sharps, P.; Bullock, L. Intimate Partner Violence During Pregnancy: Maternal and Neonatal Outcomes. *J. Women's Health* **2015**, *24*, 100–106. [[CrossRef](#)] [[PubMed](#)]
43. Durant, T.; Gilbert, B.C.; Saltzman, L.; Johnson, C.H. Opportunities for intervention: Discussing physical abuse during prenatal care visits. *Am. J. Prev. Med.* **2000**, *19*, 238–244. [[CrossRef](#)]
44. Colombini, M.; Mayhew, S.H.; Ali, S.H.; Shuib, R.; Watts, C. "I feel it is not enough . . ." Health providers' perspectives on services for victims of intimate partner violence in Malaysia. *BMC Health Serv. Res.* **2013**, *13*, 65. [[CrossRef](#)] [[PubMed](#)]
45. McMahan, S.; Huang, C.-C.; Boxer, P.; Postmus, J.L. The impact of emotional and physical violence during pregnancy on maternal and child health at one year post-partum. *Child. Youth Serv. Rev.* **2011**, *33*, 2103–2111. [[CrossRef](#)]
46. Tiwari, A.; Chan, K.L.; Fong, D.Y.T.; Leung, W.; Brownridge, D.; Lam, H.; Wong, B.; Lam, C.; Chau, F.; Chan, A.; et al. The impact of psychological abuse by an intimate partner on the mental health of pregnant women. *BJOG Int. J. Obs. Gynaecol.* **2008**, *115*, 377–384. [[CrossRef](#)]
47. Gausia, K.; Fisher, C.; Ali, M.; Oosthuizen, J. Antenatal depression and suicidal ideation among rural Bangladeshi women: A community-based study. *Arch. Women's Ment. Health* **2009**, *12*, 351–358. [[CrossRef](#)]
48. Sanchez, S.E.; Qiu, C.; Perales, M.T.; Lam, N.; García, P.; Williams, M.A. Intimate partner violence (IPV) and preeclampsia among Peruvian women. *Eur. J. Obs. Gynecol. Reprod. Biol.* **2008**, *137*, 50–55. [[CrossRef](#)]
49. Mohammed, B.H.; Johnston, J.M.; Harwell, J.I.; Yi, H.; Tsang, K.W.-K.; Haidar, J. Intimate partner violence and utilization of maternal healthcare services in Addis Ababa, Ethiopia. *BMC Health Serv. Res.* **2017**, *17*, 178. [[CrossRef](#)] [[PubMed](#)]
50. Pun, K.D.; Infanti, J.J.; Koju, R.; Schei, B.; Darj, E.; ADVANCE Study Group. Community perceptions on domestic violence against pregnant women in Nepal: A qualitative study. *Glob. Health Action* **2016**, *9*, 31964. [[CrossRef](#)]

51. VanParys, A.S.; Deschepper, E.; Michielsens, K.; Galle, A.; Roelens, K.; Temmerman, M.; Verstraelen, H. Intimate partner violence and psychosocial health, across-sectional study in a pregnant population. *BMC Pregnancy Childbirth* **2015**, *15*, 278. [[CrossRef](#)]
52. Swailes, A.L.; Lehman, E.B.; Perry, A.N.; McCall-Hosenfeld, J.S. Intimate partner violence screening and counseling in the healthcare setting: Perception of provider-based discussions as a strategic response to IPV. *Health Care Women Int.* **2016**, *37*, 1–12. [[CrossRef](#)] [[PubMed](#)]
53. Garcia-Moreno, C.; Hegarty, K.; D'Oliveira, A.F.L.; Koziol-McLain, J.; Colombini, M.; Feder, G. The health-systems response to violence against women. *Lancet* **2015**, *385*, 1567–1579. [[CrossRef](#)]
54. Rees, K.; Zweigenthal, V.; Joyner, K. Health sector responses to intimate partner violence: A literature review. *Afr. J. Prim. Health Care Fam. Med.* **2014**, *6*. [[CrossRef](#)]
55. Garcia-Moreno, C.; Amin, A. The sustainable development goals, violence and women's and children's health. *Bull. World Health Organ.* **2016**, *94*, 396–397. [[CrossRef](#)]
56. Garcia-Moreno, C.; Zimmerman, C.; Morris-Gehring, A.; Heise, L.; Amin, A.; Abrahams, N.; Montoya, O.; Bhate-Deosthali, P.; Kilonzo, N.; Watts, C. Addressing violence against women: A call to action. *Lancet* **2015**, *385*, 1685–1695. [[CrossRef](#)]
57. Deosthali-Bhate, P.; Rege, S.; Pal, P.; Nandi, S.; Bhatla, N.; Kashyap, A. Intimate Partner Violence in India. *Indian J. Med. Res.* **2015**, *141*, 757–759.
58. Ali, T.S.; Krantz, G.; Gul, R.; Asad, N.; Johansson, E.; Mogren, I. Gender roles and their influence on life prospects for women in urban Karachi, Pakistan: A qualitative study. *Glob. Health Action* **2011**, *4*, 1260. [[CrossRef](#)] [[PubMed](#)]
59. WHO. *Putting Women First: Ethical and Safety Recommendations for Research on Domestic Violence against Women*; World Health Organization: Geneva, Switzerland, 2001.
60. Henriksen, L.; Garnweidner-Holme, L.; Thorsteinsen, K.; Lukasse, M. 'It is a difficult topic'—a qualitative study of midwives' experiences with routine antenatal enquiry for intimate partner violence. *BMC Pregnancy Childbirth* **2017**, *17*, 165. [[CrossRef](#)] [[PubMed](#)]
61. Agnew-Davies, R. Responding to disclosures of domestic violence. In *Domestic Violence and Mental Health*; RCPsych Publications: London, UK, 2013; pp. 49–63.
62. Goff, H.; Shelton, A.; Byrd, T.; Parcel, G. Preparedness of healthcare practitioners to screen women for domestic violence in a border community. *Health Care Women Int.* **2003**, *24*, 135–148. [[CrossRef](#)] [[PubMed](#)]
63. Ramsay, J.; Rutterford, C.; Gregory, A.; Dunne, D.; Eldridge, S.; Sharp, D.; Feder, G. Domestic violence: Knowledge, attitudes, and clinical practice of selected UK primary health care clinicians. *Br. J. Gen. Pract.* **2012**, *62*, e647–e655. [[CrossRef](#)]
64. Mezey, G.; Bacchus, L.; Haworth, A.; Bewley, S. Midwives' perceptions and experiences of routine enquiry for domestic violence. *BJOG Int. J. Obstet. Gynaecol.* **2003**, *110*, 744–752. [[CrossRef](#)]
65. Rishal, P.; Joshi, S.K.; Lukasse, M.; Schei, B.; Swahnberg, K.; ADVANCE Study Group. 'They just walk away'—women's perception of being silenced by antenatal health workers: A qualitative study on women survivors of domestic violence in Nepal. *Glob. Health Action* **2016**, *9*, 31838. [[CrossRef](#)]
66. O'Reilly, R.; Peters, K. Opportunistic domestic violence screening for pregnant and post-partum women by community based health care providers. *BMC Women's Health* **2018**, *18*, 128. [[CrossRef](#)]
67. Nascimento, E.D.F.G.A.D.; Ribeiro, A.P.; DeSouza, E.R. Perceptions and practices of Angolan health care professionals concerning intimate partner violence against women. *Cad. Saúde Pública* **2014**, *30*, 1229–1238. [[CrossRef](#)]
68. Feder, G.; Hutson, M.; Ramsay, J.; Taket, A.R. Women Exposed to Intimate Partner Violence. *Arch. Intern. Med.* **2006**, *166*, 22. [[CrossRef](#)]
69. Gashaw, B.T.; Magnus, J.H.; Schei, B.; Solbrække, K.N. Community Stakeholders' Perspectives on Intimate Partner Violence during Pregnancy—A Qualitative Study from Ethiopia. *Int. J. Environ. Res. Public Health* **2019**, *16*, 4694. [[CrossRef](#)]
70. Sharps, P.; Bullock, L.F.; Campbell, J.C.; Alhusen, J.L.; Ghazarian, S.R.; Bhandari, S.S.; Schminkey, D.L. Domestic Violence Enhanced Perinatal Home Visits: The DOVE Randomized Clinical Trial. *J. Women's Health* **2016**, *25*, 1129–1138. [[CrossRef](#)] [[PubMed](#)]
71. Olds, D.; Henderson, C.R.; Phelps, C.; Kitzman, H.; Hanks, C. Effect of Prenatal and Infancy Nurse Home Visitation on Government Spending. *Med. Care* **1993**, *31*, 155–174. [[CrossRef](#)]

72. Bourey, C.; Williams, W.; Bernstein, E.E.; Stephenson, R. Systematic review of structural interventions for intimate partner violence in low-and middle-income countries: Organizing evidence for prevention. *BMC Public Health* **2015**, *15*, 1165. [[CrossRef](#)]
73. Michau, L. (Ed.) *Community Mobilization: Preventing Partner Violence by Changing Social Norms*; Prepared for Expert Group Meeting on Prevention of Violence Against Women and Girls; UN Women September: New York, NY, USA, 2012.
74. Harvey, A.; Garcia-Moreno, C.; Butchart, A. *Primary Prevention of Intimate-Partner Violence and Sexual Violence: Background Paper for WHO Expert Meeting 2–3 May 2007*; World Health Organization, Department of Violence and Injury Prevention and Disability: Geneva, Switzerland, 2007.
75. Wiist, W.H.; McFarlane, J. The effectiveness of an abuse assessment protocol in public health prenatal clinics. *Am. J. Public Health* **1999**, *89*, 1217–1221. [[CrossRef](#)] [[PubMed](#)]
76. Women, P.; Yawn, B.; Yawn, R.; Uden, D. American Medical Association diagnostic and treatment guidelines on domestic violence. *Arch. Fam. Med.* **1992**, *1*, 39.
77. Rodriguez, M.A. Should Physicians Be Required to Report Domestic Violence to the Police? Against: Mandatory reporting does not guarantee safety. *West. J. Med.* **2000**, *173*, 225. [[CrossRef](#)] [[PubMed](#)]
78. Kabir, R.; Khan, H.T.A. A Cross-Sectional Study to Explore Intimate Partner Violence and Barriers to Empowerment of Women in Armenia. *Biomed. Res. Int.* **2019**, *2019*, 6939684–11. [[CrossRef](#)] [[PubMed](#)]
79. WHO. *Understanding and Addressing Violence against Women: Intimate Partner Violence*; World Health Organization: Geneva, Switzerland, 2012.
80. Abramsky, T.; Lees, S.; Stoeckl, H.; Harvey, S.; Kapinga, I.; Ranganathan, M.; Mshana, G.; Kapiga, S. Women's income and risk of intimate partner violence: Secondary findings from the MAISHA cluster randomized trial in North-Western Tanzania. *BMC Public Health* **2019**, *19*, 1108–1115. [[CrossRef](#)] [[PubMed](#)]
81. Firoz, T.; Vidler, M.; Makanga, P.T.; Boone, H.; Chiaú, R.; Sevene, E.; Magee, L.A.; VonDadelszen, P.; Munguambe, K.; CLIP Working Group; et al. Community perspectives on the determinants of maternal health in rural southern Mozambique: A qualitative study. *Reprod. Health* **2016**, *13*, 112. [[CrossRef](#)] [[PubMed](#)]
82. Sigalla, G.N.; Mushi, D.; Gammeltoft, T.M. "Staying for the children": The role of natal relatives in supporting women experiencing intimate partner violence during pregnancy in northern Tanzania—A qualitative study. *PLoS ONE* **2018**, *13*, e0198098. [[CrossRef](#)]
83. Gossaye, Y.; Deyessa, N.; Berhane, Y.; Ellsberg, M.; Emmelin, M.; Ashenafi, M.; Alem, A.; Negash, A.; Kebede, D.; Kullgren, G.; et al. Women's health and life events study in rural Ethiopia. *Ethiop. J. Health Dev.* **2003**, *17*. [[CrossRef](#)]
84. Odero, M.; Hatcher, A.M.; Bryant, C.; Onono, M.; Romito, P.; Bukusi, E.A.; Turan, J.M. Responses to and resources for intimate partner violence: Qualitative findings from women, men, and service providers in rural Kenya. *J. Interpers. Violence* **2014**, *29*, 783–805. [[CrossRef](#)] [[PubMed](#)]
85. Kim, J.C.; Watts, C.H.; Hargreaves, J.R.; Ndhlovu, L.X.; Phetla, G.; Morison, L.A.; Busza, J.; Porter, J.D.; Pronyk, P. Understanding the Impact of a Microfinance-Based Intervention on Women's Empowerment and the Reduction of Intimate Partner Violence in South Africa. *Am. J. Public Health* **2007**, *97*, 1794–1802. [[CrossRef](#)] [[PubMed](#)]
86. Semahegn, A.; Torpey, K.; Manu, A.; Assefa, N.; Tesfaye, G.; Ankomah, A. Are interventions focused on gender-norms effective in preventing domestic violence against women in low and lower-middle income countries? A systematic review and meta-analysis. *Reprod. Health* **2019**, *16*, 93. [[CrossRef](#)] [[PubMed](#)]
87. Schuler, S.; Nazneen, S. Does Intimate Partner Violence Decline as Women's Empowerment Becomes Normative? Perspectives of Bangladeshi Women. *World Dev.* **2018**, *101*, 284–292. [[CrossRef](#)]
88. Bayeh, E. The role of empowering women and achieving gender equality to the sustainable development of Ethiopia. *Pac. Sci. Rev. B Hum. Soc. Sci.* **2016**, *2*, 37–42. [[CrossRef](#)]
89. Warth, L.; Koparanova, M. *Empowering Women for Sustainable Development*; United Nations Economic Commission for Europe: Geneva, Switzerland, 2012.
90. Bourke, B. Positionality: Reflecting on the research process. *Qual. Rep.* **2014**, *19*, 1–9.



Appendices

Appendix I- Survey questionnaire for the quantitative study. UIO & Jimma University

Tools prepared to collect information about IPV in pregnancy.

Instructions for interviewers: Fill/tick in the format by interviewing participants. Make sure the respondents privacy is maintained (interview them in separate room, neither any one nor the partner is around) and assure them that their response is treated confidential. (you can take some information from ANC card as available)

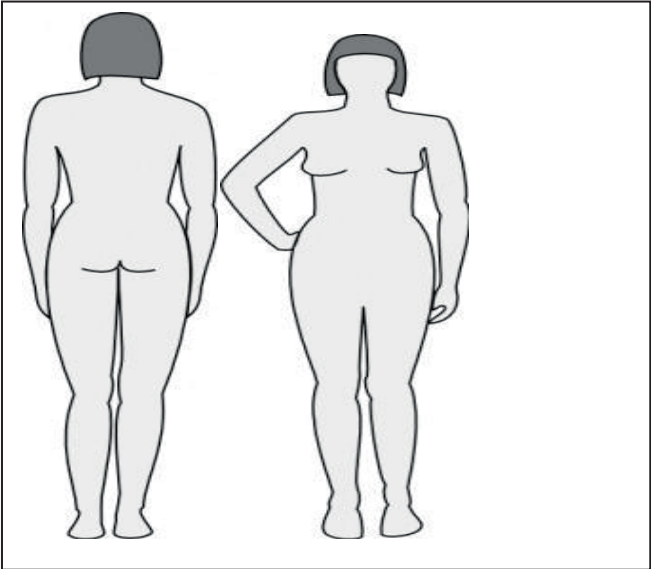
Part I. Socio-demographic and economic characteristics and Obstetric history of woman			
Q.No	Questions	Category (responses)	Skip
	Address of client	Kebele----- Higher----- ANC Card No.____ Name of Facility_____ Telephone No. _____	
101	Age in years	_____	
102	Current residence	1. Urban 2. Rural	
103	How old were you when you first get married?	_____	
104	Type of marriage	1. Family arranged marriage 2. By choice	
105	Type of relationship with your current partner	1. Married 2. cohabited 3. Boy friend 4. Other, state_____	
106	No. of wives your husband has	1. Just you 2. Two 3. More than two	
107	Childhood origin of residence?	1. Urban 2. Rural	
108	Ethnicity you are identified with	1. Oromo 2. Amhara 3. Gurage 4. Kefa 5. Dawro	

		6. Others (specify) _____	
109	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Others, specify-----	
110	How long have you been living with your husband?	1. Less than 1 year 2. 2-4 years 3. 5-10 year 4. 10+ years	
111	Completed years of schooling	_____	
112	Educational status of woman	1. No education 2. Read and write 3. Primary cycles (1-8) 4. Secondary (9-12) 5. > 12	
113	Occupation of woman	1. Gov'tal employee 2. Housewife 3. Private (merchant) 4. Others state! -----	
114.a	Do you generate income by yourself?	1. Yes 2. No	
114	Average monthly income of the woman	-----in birr	
	Obstetric history		
115	Gravida	-----	
116	Para	_____	
117	Gestational age in weeks (uterine height) of current pregnancy	_____	
118	What was the gestational age at 1 st ANC booking of the client?	1. ≤ 16 weeks 2. After 16 weeks 3. 24-28 weeks 4. 30-32 weeks 5. 36 and above	

119	For which visit the client has come today? If she comes for ≥ 5 ANC visit state why_____	1. For the 1 st visit 2. For the 2 nd visit 3. For the 3 rd visit 4. For the 4 th visit 5. Five and above	
120	The current pregnancy is:	1. Planned and or/wanted 2. Unplanned and or/ unwanted	
121	Number of live children you have currently (Qn. 122-124 applies for gravid ≥ 2)	_____	
122	What was the sex of your most recent child?	1. Male 2. Female 3. NA	
122.1	Most recent child is currently alive?	1. Yes 2. No	
123.3	The outcome of your most recent birth	1. Still Birth 2. Live Birth	
123.4	The outcome of your most recent birth	1. LBW 2. Normal weight	
123.5	The outcome of your most recent birth	1. Preterm birth 2. Term birth	
124	Did you experience any complications during your most recent pregnancy	1. Yes 2. No	
124.1	If Yes, to Qn 124 state the type of complication	-----	
125	HIV status	1. R 2. NR	
126.a	Did you face any medical, obstetrical, and or behavioral problem/s in the current pregnancy?	1. Yes 2. No	

126	If Yes to Qn 126.a which of the following medical, obstetrical, and or behavioral problem/s the client has in the current pregnancy?	<ol style="list-style-type: none"> 1. Diabetes mellitus 2. Cardiac disease 3. Hypertension 4. Vaginal bleeding 5. Known substance use (alcohol drinking, smoking, and or khat chewing..) 6. Other, state _____ 	
I.1	Socio-demographic and economic characteristics of husband/partner.		
127	Spousal Age	_____	
128	Husband's monthly income	_____	
129	Literacy status of husband	<ol style="list-style-type: none"> 1. No education 2. Read and write 3. Primary cycles (1-8) 4. Secondary (9-12) 5. > 12 grade 	
130	Occupation of husband	<ol style="list-style-type: none"> 1. Gov'tal employee 2. Private(merchant) 3. Farmer 4. Other state ----- 	

Part II- History of IPV- Using Abuse Assessment Screening tools (AAS)

S.N	Tick (v) under all that applies	Yes	No
201	Have you ever been (lifetime) emotionally or physically abused by your partner or someone important to you?		
202	Within the last year , have you ever been hit, slapped, kicked, or otherwise physically hurt by some one? If No go to Qn No. 204		
202.1	If Yes to Qn 202, who? (Circle all that apply) a. Husband b. Ex-Husband c. Boyfriend d. Stranger. e. In laws , circle which one (mother in-law, father in-law, sister in-law, brother in-law) f. Multiple		
202.2	Total # of times: _____		
203	Since you've been pregnant (current pregnancy) , have you been slapped, kicked, or otherwise physically hurt by someone?		
203.1	If Yes to Qn 203, by who? (Circle all that apply) a. Husband b. Ex-Husband c. Boyfriend d. Stranger e. Other, state _____ f. Multiple		
203.2	If Yes to Qn 203 , total # of times _____		
203.3	If Yes to Qn 203 , mark the area of injury on the body map. _____		

203.4	<p>Score each incident according to the following scale:</p> <p>1 = Threats of abuse including use of weapon _____</p> <p>2 = Slapping, pushing; no injuries and/or lasting pain _____</p> <p>3 = Punching, kicking, bruises, cuts and/or continuing pain _____</p> <p>4 = Beating up, severe contusions, burns broken bones _____</p> <p>5 = Head injury, internal injury, permanent Injury _____</p> <p>6 = Use of weapon (gun, knife); wound from weapon _____</p>		
		Yes	No
204	Within the last year , has anyone forced you to have sexual activities ?		
204.1	<p>If Yes to Qn 204, who? (Circle all that apply)</p> <p>1. Husband</p> <p>2. Ex-Husband</p> <p>3. Boyfriend</p> <p>4. Stranger</p> <p>5. Multiple</p>		
204.2	Total # of times ____		
205	Are you afraid of your partner or anyone listed above?		
206	Within the last year have you been insulted, belittled, constantly humiliated, intimidated (e.g. destroying things), threatened of being harmed, threatened to take away your children?		
207	Within the last year have you been controlled by your partner?	Yes	No
207.1	<p>If yes, to Q 207 which type of controlling imposed on you?</p> <p>1. Isolating you from your family and friends</p> <p>2. Monitoring your movements</p> <p>3. Restricting you to access to financial resources</p> <p>4. Restricting you from employment, education or medical care</p> <p>5. two or more type of controlling</p>		
<p>NB: Question No. 206 is included to measure psychological violence as it is not included in the AAS in behavioral terms separately and No. 207 is included because it is missed in the AAS.</p>			

Part III- Previous History of IPV		
301	How would you classify your relationships with your partner?	<ol style="list-style-type: none"> 1. Trusting supportive and respectful 2. Makes you anxious, disrespectful and/or constantly threatening
302	Do you consider partner abuse (physical or psychological or sexual or all) as violence ?	<ol style="list-style-type: none"> 1. Yes 2. No.
303	Have you ever been exposed to any violence by the current partner before pregnancy?	<ol style="list-style-type: none"> 1. Yes 2. No. (If No go to 306)
304	If you have ever been exposed to any IPV before pregnancy (Yes to Q303), what will you say about the frequency of IPV in the current pregnancy?	<ol style="list-style-type: none"> 1. Increased 2. Decreased 3. The same 4. free of violence
305	Where did you turn in the incidents? If you keep silent, and /hide it, state, why_____	<ol style="list-style-type: none"> 1. Your family 2. Your neighbours 3. Your religious father 4. Keep silent 5. Other, state _____
306	Were you exposed to violence in most recent pregnancy? (for those Gravid 2+)	<ol style="list-style-type: none"> 1. Yes 2. No.
307	<p>If Yes, to Q306, which type of intimate partner violence were you exposed?</p> <ol style="list-style-type: none"> 1. Physical (slapped, kicked, or otherwise physically hurt) 2. Psychological (insulted, belittled, constantly humiliated, intimidated) 3. Sexual (forced you to have sexual activities) 4. two or more of the above violent acts 	

Part IV- Factors contributing to IPV (based on Social Ecologic Model)				
Societal related factors			Yes	No
401	Are there strict traditional gender norms in your society? (ex, women should stay at home, should be submissive, men should be tough....)			
402	Is violence accepted in your society?			
403	Is violence in your society used as a means to settle interpersonal conflicts?			
404	Does the society you live with have supportive attitudes of wife beating?			
405	Does the society you live in regard violence as a notion of masculinity? (ex, a real man disciplines his wife)			
406	Are there strict gender role differences between the two sexes in the society? (ex. Cooking is a women's responsibility)			
Community factors				
407	Are there men's group that condone or legitimize men's violence in your community			
408	Do you feel isolated from your community?			
409	Are you living in a community where there is no social support for victims of violence?			
410	Do most of the members of your community have low socioeconomic status or suffer financial problems?			
411	Are there many unemployed people in your community?			
Relationship/family factors				
412	Would you consider that you have marital conflict?			
413	Is your household property/wealth controlled by your husband?			
414	Is decision making in your family controlled by your husband?			
415	Is communication difficult with your husband?			
Individual Factors				
416	Were you abused in your childhood?			
417	Were you witness marital violence in your childhood?			
418	Have you lost your father in your childhood?			
419	Did you have rejecting father in your childhood?			
420	Was your husband abused in his childhood?			
421	Did your husband witness marital violence in his childhood?			
422	Has your husband lost his father in his childhood?			

423	Did your husband have a rejecting father in his childhood?		
424	Does your husband use alcohol /Khat /smoking or all?		
425	Does your husband have mental health, or personality problems?		

Adapted from: Researching Violence against Women: A Practical Guide for Researchers and Activists/ Mary Ellsberg, Lori Heise, WHO, PATH, 2005 and WHO, 2012.

Thank you for taking your time and responding to our questions.

Name and signature of the consenting interviewer _____ Date _____

Supervisor's name & Signature _____

Date _____

Appendix II- The Qualitative data collection tools

UiO and Jimma University

Interview guide on perceptions and response of IPV in pregnancy, Jimma town, Ethiopia, (For Health care workers)

To begin with:

It is quite common that there is disagreement between couples. However, women often become victims of a conflict if they are subjected to violence. This study is designed to map perceptions of relationship violence in pregnancy and collect key stakeholders suggestions for solutions. Whatever you say is important to us, please feel free to share your opinion. You can also withdraw any time without any consequences. We really want to assure you that your response will be treated confidential and only used for research.

Participants' characteristics

- Age-
- Sex-
- Marital status -
- Religion -
- Occupation-
- Level of Education-
- Service years

1. Can you describe the traditional perceptions of intimate partner violence (IPV) in the community?
2. Is IPV is accepted/not accepted in the community, why?, In which situation, persons, age --
3. Why do **you think** IPV happens in the community?
4. As a **leader/professional** what are your perceptions/views on IPV?
5. Is there any kind of violence that you don't consider as acceptable/unacceptable, your views)?
6. As a **leader/professional** can you describe **any role** you have or could have related to IPV?

7. What is your **personal** perception on IPV change in **pregnancy**?

Why?

8. Could you please reflect on your encounter with women or pregnant women exposed to abuse/violence?

Research has demonstrated that IPV is associated with increased chronic diseases, diabetes, hypertension, heart disease and mental health issues among the victims. If a woman is pregnant it is associated with complications, poor pregnancy outcomes and even death of mother and child. In families where IPV is prevalent it also impacts children and their health, also their health as adults (discuss this at last).

9. Based on this data what do you think should be done to reduce IPV?

10. Do you routinely ask pregnant women if they have been exposed to IPV? Have you ever treated a woman after IPV in the ANC?

11. What kind of examinations? How do you support them? If No, why not?

12. Are there any guideline/ Standards for Medical management of IPV in pregnancy available to you?

13. Have you participated in any IPV **training**? If yes when and where?

14. Where would you send IPV victims after having treated them?

15. Finally, in your opinion, what if anything should be done about IPV in your community?

Thank you for your contribution

Interview guide,

(For judges and police officers, Women affairs, and Religious leaders)

To begin with:

It is quite common that there is disagreement between couples. However, women often become victims of a conflict if they are subjected to violence. This study is designed to map perceptions of IPV in pregnancy and note key stakeholders suggestions for solutions. Whatever you say is important to us, please feel free to share your opinion. You can also withdraw any time without any consequences. We really want to assure you that your response will be treated confidential.

Participants' characteristics

- Age-
- Sex-
- Marital status -
- Religion -
- Occupation-
- Level of Education-

1. Can you describe the traditional perceptions of intimate partner violence (IPV) in the community?

2. Why do **you think** IPV happens in the community?

3. IPV is accepted/not accepted in the community?

In which situation, persons, age -----

4. Is there any kind of violence that you don't consider as acceptable?

When would you say it is unacceptable?/abuse__ -

6. As a **leader/professional** can you describe any role you have or could have related to IPV?

7. As a **leader/professional** what are your perceptions/views on IPV?

8. What is your personal/professional perception on IPV change in pregnancy? Why__

9. Could you please reflect on your encounter with women or pregnant women exposed to abuse/violence?

- What did you do?
- Where do you think victims should turn after an incident?

Family, neighbors, religious fathers, health care workers or.....

10. Do you think that incidents of IPV in pregnancy should be reported to the police?, why? _____

Research has demonstrated that IPV is associated with increased chronic diseases, diabetes, hypertension, heart disease and mental health issues among the victims. If a woman is pregnant it is associated with complications, poor pregnancy outcomes and even death of mother and child. In families where IPV is prevalent it also impacts children and their health, also their health as adults (discuss this at last).

11. Based on this data what do you think should be done to reduce IPV?

12. Is there any training available to you and your colleagues how to handle the situation of IPV?

- Have you attended such training?,
- Would like to attend in the future?

9. Is there a legislation related to IPV? Could you tell which.....

10. Does your work site have any protocol to handle IPV? Yes/No, if yes, describe what, how.....

13. Could you please reflect on your encounter with abused women and or abused pregnant women?

14. Number of women or pregnant women victim of IPV seen at your office station/month/year **(see records)**

15. What was the next step or referral practice taken

To health institution,

To police, or other, state _____

16. Is there anything women leaders can do to reduce IPV? (refers to Women Leaders)

17. Do women's support networks exist to help survivors?

18. What does Christianity/Islam teach about violence in marriage? (to Religious Leaders)

Thank you for your contribution.

Appendix III-Training Manual

Topic-Intimate Partner Violence in Pregnancy

Research Project-Training manual for data collectors and supervisors

By:
Bosena Tebeje Gashaw (PHD Fellow)
University of Oslo

July, 2015
Jimma, Ethiopia

Table of contents

S.N	Contents	Page
1	Introduction	3
2	The objectives of the training	3
3	The Rationale and objectives of the Research	3
3.1	3.1 The Rationale of the research project	3
3.2	Objectives of the research	4
4	Field work	4
5	Data abstraction and completion	4
6	Data quality control	5
6.1	Supervision and monitoring	5
7	Ethical issues	5
8	Training Schedule	6

1. Introduction

This training manual is developed to guide the training of field staff (data collectors and supervisors) for the research project: Intimate Partner Violence in Pregnancy. The quality of the data collected during a survey depends on the quality of the field work and the data collection staff is the backbone of data collection effort. This in turn, depends on the ability of data collectors recruited, the training they receive, and how well they collect the data. Similarly, the process of interviewing people to collect data involves a number of skills. Without these skills, the quality of the data collected can be affected. To ensure that the data collection is consistent and accurate, it is important to train data collectors. In general training enumerators ensure the quality of data collected, minimize biases from non sampling errors (response error, reporting unit and item non response), reduce respondents' burden and preserve the confidentiality of collected data.

This manual will emphasize the importance of training enumerators and explain the topics to be included in their training program. Various skills and techniques to be taught to enumerators as well as data collection methods and techniques are also described. The manual is divided into different sections: The first sections stated; Introduction, the objectives of the training, and the rationale and objectives of the research. Understanding the rationale and objectives is important because it may help to justify participation to potential respondents and thus motivate persons to join the study or to provide valid and complete information. Following these: Field work, data abstraction and completion, data quality control, ethical issues, training Schedule are highlighted. The roles and responsibilities of data collectors and supervisors are also stated. Monitoring and supervision procedures are also reflected. The training will take three days.

2. The objectives of the training

At the end of this training participants will:

- Explain the objective of the research project
- Discuss key training topics and how it is conducted
(*to familiarize the trainees with the purpose of the survey questionnaire, and the instructions for its filling).
- Identify their roles and responsibilities
- Describe the research ethics (participant privacy, confidentiality and safety)
- Collect consistent and high quality data
- Keep confidentiality of the data collected.

3. The rationale and objectives of the research

3.1 The Rationale of the research project

In Ethiopia, Women are: less educated least benefited, early marriage, polygamous unions and patriarchal culture are deep rooted tradition in many Ethiopian communities and all these might be the conditions perpetuating IPV as Ethiopia is one of the highest (71%) IPV prevalent countries. Intimate partner violence (IPV)- refers to a behavior by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse and controlling behaviors (WHO, 2014).

Pregnancy does not prevent the occurrence of intimate partner violence. IPV may commence or escalate in pregnancy. IPV in pregnancy appears to be a more frequent occurrence than other recognized obstetric complications for which women are routinely screen. Recently, attention has focused on IPV during pregnancy due to its prevalence and adverse health consequences.

Global prevalence estimates of IPV in pregnancy- ranged 3-30 %, Intimate partner violence (IPV) in pregnancy appeared to be high in Africa and in Ethiopia, A systematic review of 13 studies in African countries revealed the prevalence of IPV during pregnancy ranged from 2% to 57 %. However, much has not been done in Ethiopia. Few recent, local studies done showed; 23% and 32.2 % of pregnant women experienced intimate partner violence during current pregnancy.

IPV during pregnancy is associated with adverse health outcomes for the mother and child, thus it requires coordinated response from multiple sectors including researchers. Therefore this study can be considered as a window of opportunity-extended RH service (health workers to screen pregnant women for IPV and lead to effective intervention and referrals), contribute to the knowledge, fill the gap, inform policy and is a potential for intervention.

3.2 Objectives of the research

- To identify the prevalence of IPV in pregnancy.
- To identify the factors contributing to IPV in pregnancy operating at the different levels.
- To examine the link between IPV and initiation of Antenatal care (ANC)

4. Field work (data collection procedures and selecting field workers)

Field workers (data collectors)- In this data collection process, female midwives and nurses who can speak both working and local language (Amharic and Afan Oromo), have been working at the same institution, inspire trust, will be selected to collect the data. This will help us to make participants more comfortable and disclose their experience of violence as they trust them more than anyone else. It is also generally believed that female interviewers are more successful in eliciting personal information from women and have experience in discussing sensitive issues. These fieldworkers share some cultural background with informants but do not belong to the same village or neighborhood, so that the respondents may feel more confident that the information they share will not get back to others. This intern highlights the importance of using carefully selected and appropriately trained female interviewers. In order to increase the knowledge and skill of data collectors brief introduction on: IPV, IPV in pregnancy, Objectives of the research and how to collect data will be given to them.

How to approach gate keepers: initially, the gate keepers of each institutions (CEOs, medical directors, heads of the health centers...etc) will be contacted by PI, supervisors and data collectors. Following this the purpose of the research will be explained while handing in the ethical approval letters. The heads of each facility will also be requested to arrange a separate room for the data collection process so as to keep the privacy and confidentiality of participants as well as the safety of data collectors and participants.

5. Data abstraction and completion

The data collection format will have four parts:

Part I-Socio-demographic, Economic characteristics and Obstetric history

history of woman; and socio-demographic history of husband/partner

Part II- History of Intimate partner violence (IPV)- Using Abuse Assessment Screening tools (AAS).

Part III- Previous History of IPV

Part IV-Factors contributing to IPV based on the Social Ecologic Model.

- This session will be practical. The trainer and trainees will use the actual data collection format. Detail explanation will be given on how to fill each data element.

Group Exercise 1: Demonstration and return demonstration of data collection using questionnaire.

Group Exercise 2: Role play” and then mock interviews by each data collectors.

6. Data Quality Control

In order to maintain the quality of the data the following procedures will be followed:

During data collection to prevent incomplete and inconsistent responses, the researcher and supervisors will supervise and counter check completed questionnaires. In order to enhance the IPV disclosure, data collectors will be trained on the ways of increasing disclosure such as: data collectors should show respect, interest and appreciation for their respondent’s participation; interviewing participants in a private room, asking clear and direct questions, use non judgemental words, conducting the interview without partner, friends, or relatives present. A code (sign) will be made on those participant women’s ANC card to avoid repeated interview of the same women coming at different dates during the study period.

Moreover, supervisors will be closely following the data collection process, meet and support data collection process and data collectors will report their activities at the end of each data collection day through phone. A short meeting including the PI, local supervisors and data collectors will be held at the end of each data collection week to discuss challenges and their solutions. Randomly selected 5-10 % sample of the collected data will be counter checked against the ANC charts and participants in the next visit. If there is discrepancy between the data collected and the actual, supervisors will find out (whether intentional, negligence or misunderstanding) and take immediate corrective measures accordingly. However, if the problem is repeated and or the observed discrepancy is big, the data collected by that particular data collector will be discarded and the contract will be terminated. Data collectors will also perform data quality assessment (accuracy and completeness), on 5% of the data collected each day (how to assess accuracy and data completeness will be discussed during the training).

6.1 Supervision and monitoring

Supervisors will be in charge of supervising the data collection and of coaching data collectors during the task. This is part of the ongoing evaluation process, which could also include regular meetings with data collectors. They will also contact the data collectors at any time, by telephone and direct contact, to receive clarifications about procedures or to agree how to solve difficulties which might arise during the data collection process (including clarifications about questions in the questionnaire). Throughout the data collection process, supervisors will perform supportive supervision, monitor the completed questionnaires daily and assess the quality of data collected. Challenges faced will be discussed and immediate remedial actions will be taken.

7. Ethical issues

Since the subject of the study is sensitive and address sensitive cultural and ethical issues; the following care will be taken:

- Interview will be done in a separate room where conversation between data collector and participant will not be overheard as well as without partner, friends, or relatives except children < 3 years of age present.
- Confidentiality and privacy will also be adhered to keep the women’s safety and increase the rate disclosing violence; only Keble, card No. and Telephone No. will be collected on the questionnaire.
- Informed written and verbal consent of respondents’ will be obtained before the data collection.
- Counseling about IPV will be provided to all the survivors and information will also be given about the centers where they can be supported.
- Study participants will also be contacted using phone call for any concerns.

8. Training Schedule

Table 1. Data Collectors and Supervisors Training Schedule		
Day 1	Facilitators:	
	Methods: Interactive lecture, Demonstration, Group discussions, Role play, Mock interview.	
Time	Activity	Presenter
08:30 – 09:00	Registration	Assistants
09:00 – 10:20	Introduction of participants to each other	
10:20-10:35	Coffee Break	
10:35-12:30	Introduction to training <ul style="list-style-type: none"> • Rationale and objective of the research • Overview of IPV • Suggestions, questions and answers 	PI Participants
12:30 – 13:30	Lunch Break	
13:30 – 15:30	<ul style="list-style-type: none"> • How to introduce self to research participants ○ How to increase disclosure 	
15:30 – 16:00	Coffee Break	
16:00 – 17:20	Group work presentation and discussion	
17:20 – 17:30	Wrap up and daily evaluation	
Day 2	Facilitators:	
	Methods: Interactive lecture, Group Work, Discussions	
Time	Activity	Presenter
08:30 – 08:45	Recap of day 1	Recap team
08:45 – 10:30	How to fill the data collection format	
10:30 – 11:00	Coffee Break	

11:00– 12:30	How to fill the data collection format	
12:30 – 13:30	Lunch Break	
13:30 – 15:30	How to maintain data quality How to check data quality	
15:30 – 16:00	Coffee Break	
16:00 – 17:20	Supportive supervision Ethics and confidentiality	
17:20 – 17:30	Wrap up and daily evaluation	Participants
Day 3	Facilitator: PI and two other research assistants Method: Field work	
Time	Activity	Presenter
08:30–10:30	Group work (exercise on each other), data collection using questionnaire	Participants
10:30-12:30	Presentation of challenges and discussion	
12:30–13:30	Lunch break	
13:30–15:30	Role play-mock interview using questionnaire	Participants
15:30-16:00	Challenges, concerns, discussion and way forward	