

DOMESTIC VIOLENCE AND REPRODUCTIVE HEALTH CONSEQUENCES OF WOMEN IN INDIA

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DECLARATION

I, Shewli Shabnam, hereby declare that the dissertation entitled "DOMESTIC VIOLENCE AND REPRODUCTIVE HEALTH CONSEQUENCES OF WOMEN IN INDIA" submitted by me for the award of the degree of MASTER OF PHILOSOPHY is my bona fide work and that it has not been submitted so for in part or in full, for any degree or diploma of this university or any other university.

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Dedicated

To my parents, sister

&

husband

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ACRONYMS

IFA – Iron and Folic Acid

ANM – Auxiliary Nurse Midwife

DALYs – Disability-Adjusted Life Years

DHS – Demographic and Health Surveys

FGD – Focus Group Discussions

ICDS – Integrated Child Development Services

ICPD – International Conference on Population and Development

ICRW – International Center for Research on Women

IDB – Inter-American Development Bank

IIPS – International Institute for Population Sciences

LHV – Lady Health Visitor

NCW – National Commission for Women

NFHS – National Family Health Survey

OXFAM – Oxford Committee for Famine Relief

RCH – Reproductive and Child Health

RTI – Reproductive Tract Infection

SC – Scheduled Caste

ST – Scheduled Tribe

STD – Sexually Transmitted Disease

STI – Sexually Transmitted Infection

TBA – Traditional Birth Attendant

UN – United Nations

UNFPA – United Nations Population Fund

UNICEF – United Nations Children’s Fund, previously known as United Nations International Children’s Emergency Fund

UNIFEM – United Nations Development Fund for Women

VAW – Violence against women

CHAPTER 1

INTRODUCTION

1.1. Introduction

Violence Against Women (VAW) is considered as the most pervasive yet least recognized human rights violation in the world (Heise, Ellsberg and Gottmoller, 2002), denying women and girls' equality, security, dignity, self-worth, and their right to enjoy fundamental freedoms. The United Nations (UN) Declaration on the Elimination of Violence against Women, adopted by the UN General Assembly in 1993, presents a comprehensive definition of VAW as "Any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life." The definition includes but is not limited to physical, sexual and psychological harm and encompasses violence which takes place in the family, community, and perpetrated or condoned by the state. Despite the growing recognition of VAW as a public health problem, and of the obstacle it poses for development, it continues to receive an unjustifiably low priority on national and international development agenda, and in planning, programming and budgeting (WHO, 2005).

Violence against women, often called as Gender based violence, encompasses an array of abuses targeted at women and girls, ranging from geographical or culture specific forms of abuse such as sex-selective abortion, female genital mutilation, dowry deaths, acid throwing and honour killing to forms of violence that are prevalent worldwide such as domestic violence and rape (Watts and Zimmerman, 2002).¹ Women are vulnerable to different types of violence at different phases in their life (Appendix 1.1). This indicates that many women experience multiple episodes of violence throughout their lives (Heise, Pitanguy and Germain, 1994).

Around the world at least one woman in every three has been beaten, coerced into sex, or otherwise abused in her lifetime. Most often the abuser is a member of her own family (Heise, Ellsberg and Gottemoeller, 1999). In fact, family violence/domestic violence is the most common type of violence against women but only recently, as a result of relentless efforts by women's organizations, it has received any public attention (Jejeebhoy, 1998).

Domestic violence refers to any act of violence in the house – it includes differential treatment of girls, wife beating and abuse, torture of daughters-in-law and neglect of widowed women in the family (UNICEF, 2001 cited by ICRW, 2004). Though women can also become violent at home, but usually they remain the victims. In India ‘The Protection of Women from Domestic Violence Act, 2005’ provides a broad definition of what constitute domestic violence. It says “any act, omission or commission or conduct of the respondent² shall constitute domestic violence in case it –

(a) harms or injuries or endangers the health, safety, life, limb or well-being, whether mental or physical, of the aggrieved person³ or tends to do so and includes causing physical abuse, sexual abuse, verbal and emotional abuse and economic abuse; or

(b) harasses, harms, injures or endangers the aggrieved person with a view to coerce her or any other person related to her to meet any unlawful demand for any dowry or other property or valuable security; or

(c) has the effect of threatening the aggrieved person or any person related to her by any conduct mentioned in clause (a) or clause (b); or

(d) otherwise injures or causes harm, whether physical or mental, to the aggrieved person.”

Forms of abuse recognized under the law have been mentioned below as:

(i) physical abuse – any act that causes bodily pain, injury or harm (e.g. – beating, kicking, punching etc.) and includes assault, criminal intimidation and criminal force;

(ii) sexual abuse – any conduct of sexual nature that abuses, humiliates, degrades or otherwise violates the dignity of woman (e.g. – forced sexual intercourse by husband, making a woman watch pornography against her will etc.);

(iii) verbal and emotional abuse – insults, ridicule and threat to cause harm or injury to any person in whom the aggrieved person is interested (e.g. – name calling, blaming a woman for not having a male child etc.); and

(4) economic abuse – deprivation of all or any economic or financial resources to which aggrieved person is entitled under any law or custom (e.g. stridhan, property), disposal of household belongings, prohibition or restriction to continued access to resources or facilities etc.⁴ An account of different forms of violence is also presented by National Commission for Women (Appendix 1.2).

Although no theoretical approach has been accepted uniformly as an all-encompassing explanatory paradigm for domestic violence, the ecological framework proposed by Heise (1998) showing the interplay of personal, situational and socio-cultural factors at different levels of social environment to cause abuse has received particular recognition by the present academic world (Appendix 1.3). Social scientists believe that domestic violence is generally a form of control through which inequality between men and women are maintained. The root cause of domestic violence lies in patriarchal system of the society. It is a system of male dominance that is intended to reinforce traditional gender roles for both men and women. It involves socialization of women into subordinate positions, and of men into thinking that they are superior to women and have right to control women's behaviour if they fail to execute their roles (Visaria, 2000). Thus domestic violence arises from patriarchal notions of ownership over women's bodies, sexuality, labour, reproductive rights, mobility, and level of autonomy (Subadra, 1999).

Violence in the domestic sphere is usually perpetrated by males – husbands, boyfriends, fathers, father-in law, step-fathers, uncles, brothers, sons or other relatives, who are or who have been in positions of trust and intimacy; but majority of violence in domestic sphere is committed by a husband or another intimate male partner. For example, the third National Family Health Survey (NFHS-3) in India revealed that 93 percent of all domestic violence against women was committed by their husbands. Therefore, in the present study the terms “domestic violence”, “intimate partner violence,” “spousal abuse” and “wife abuse” have been used interchangeably.

From nearly 80 population-based surveys carried out in more than 50 countries between 1982 and 2004, a shocking reality was unearthed – between 5 percent and 69 percent of women reported being hit or otherwise physically assaulted by a current or former intimate partner at least once in their lives and between 1 percent and 52 percent of women reported physical violence in the previous year (Ellsberg and Heise, 2005). Intimate partner violence is prevalent in

both developed and developing countries. Studies of abused women in the United States have shown that 73 to 85 percent of women do not experience physical violence until they have married (Browne, 1987 cited in Heise, Jacqueline and Pitanguy, 1994). Hindin, Kishor and Ansara (2008) after analyzing the data of recent Demographic and Health Surveys (DHS) from 10 developing countries found that physical violence experienced by women and perpetrated by their current husbands ranged from 12 percent in Haiti to 71 percent in Bangladesh. Physical violence in intimate relationships is almost always accompanied by psychological abuse and to some extent by sexual abuse (Ellsberg et al., 2000). For example, in Leon, Nicaragua, among 188 ever-married women experiencing physical abuse, 97 percent of them reported that they also faced verbal insults and humiliations and 39 percent also experienced sexual abuse (Ellsberg et al., 2000).

In India domestic violence is an accepted practice. According to the third National Family Health Survey (NFHS-3), among women aged 15-49, 35.1 percent experienced physical violence, 10 percent experienced sexual violence and 15.8 percent experienced emotional violence by their current or the most recent husband. Among the states of India, the highest prevalence of physical violence was recorded in Bihar (Appendix 1.4). West Bengal and Rajasthan registered the highest prevalence of sexual and emotional violence respectively (Appendix 1.5 and 1.6). Other population-based surveys from India show the prevalence of physical violence in the country is in between 9 percent and 99 percent (Mahajan, 1990; Jejeebhoy, 1998; Rao, 1998; Martin et al., 1999; Visaria, 2000; Khosla et al., 2005; Koenig et al., 2006; Stephenson, Koenig and Ahmed, 2006; Kapadia-Kundu et al., 2007; Jeyaseelan et al., 2007; Chowdhary and Patel, 2008; Solomon et al., 2009). While the work of Koenig and his colleagues (2006) shows that in Uttar Pradesh 31 percent of men used physical violence against their wives, Jejeebhoy (1998) finds that 42 percent to 48 percent women were beaten up by their husbands in that state. Another study by Martin et al. (1999) depicted that the prevalence of physical abuse ranged between 18 percent and 45 percent over five districts in Uttar Pradesh. This study also found that physical and sexual violence was significantly and positively associated. Regarding Western India, the prevalence of physical violence is found around 43 percent (Kapadia-Kundu et al., 2007) in Maharashtra and 42 percent in Rural Gujrat (Visaria, 2000). One study from Goa shows that 9.43 percent of married women aged 18-50 years experienced lifetime physical violence while only 3.66 percent experienced lifetime sexual

violence (Chowdhary and Patel, 2008). Among the states of South India, Jejeebhoy (1998) found that in Tamil Nadu, the proportion of women who ever suffered beating by their husbands ranged from 36 percent to 38 percent. Rao (1998) noted that in rural Karnataka, 22 percent women were physically assaulted by their husbands. A very recent study conducted in Chennai shows that among low income communities, the lifetime prevalence of physical abuse and forced sex is unusually high being 99% and 75% respectively (Solomon et al., 2009).

The consequences of intimate partner violence are profound, extending beyond the health and happiness of individuals to affect the well-being of entire communities (Krug et al., 2002). By sapping women's energy, undermining their confidence and compromising their health, domestic violence deprives society from women's full participation (Heise et al., 1999). The Inter-American Development Bank (IDB) has divided the costs of domestic violence into four categories: (a) Direct costs, (b) Non-monetary costs, (c) Economic multiplier effects and (d) Social multiplier effects. Direct costs include value of goods and services used in treating or preventing violence which includes medical, police, criminal justice system, housing and social services. Non-monetary costs point to pain and suffering – increased morbidity, increased mortality via homicide and suicide, abuse of alcohol and drugs and depressive disorders. Economic multiplier effects refer to decreased labour market participation, reduced productivity on the job, lower earnings, increased absenteeism; and social multiplier effects take into account inter-generational transmission of violence, reduced quality of life, erosion of social capital and reduced participation in democratic process (Buvinic, Morrison and Shifter, 1999 cited in Innocenti Digest, No. 6, 2000). Thus domestic violence puts a serious challenge to the economy and development of a country. The study 'Health Canada' puts the direct medical costs for the health care of the victims of domestic violence at 1.1 billion US dollars in Canada in 2001 (Hombrecher, 2007). A study in Santiago, Chile estimates that women who do not suffer physical violence earn an average of US\$385 per month while women who face severe physical violence at home earn only US\$150 (Morrison and Orlando, 1999 I cited in Innocenti Digest, No. 6, 2000). The International Centre for Research on Women, along with the International Clinical Epidemiologists Network (INCLLEN) as a part of their multi-site study of domestic violence (between 1997 and 1999) collected data from a slum in Nagpur on loss of workdays and cost of health care due to domestic violence. It was found that on an average for every incident causing injuries, women lost 6.88 days of paid work and 6.87 days of household work. Further,

their husbands missed work for an average of 9.84 days and left home for 7.58 days after a violent incident. Taking into account only the loss of income from waged work, the average cost per household was Rs 759.30 per incident. The income loss might rise to as high as Rs. 2000 if expenditure on health care were included (ICRW, 2000).

The World Development Report, 1993 published by the World Bank provided a promising approach to estimate the health impacts of gender-based violence in terms of Disability-Adjusted Life Years (DALYs) lost.⁵ The analysis revealed that rape and domestic violence accounted for nearly one in five disability-adjusted life years lost to women aged 15-44 in the industrialized countries. The health burden of rape and domestic violence is roughly the same in developing countries, but because of the overall burden of disease is much greater in developing countries, a smaller percentage is attributable to gender based victimization. In developing countries, depending on region, 5 to 16 percent of healthy years were lost to women of reproductive age group as a result of rape and domestic violence. The World Bank estimation also shows that at global level, the health burden from gender-based violence among women aged 15-44 is comparable to that posed within this age group by HIV or sepsis during childbirth.

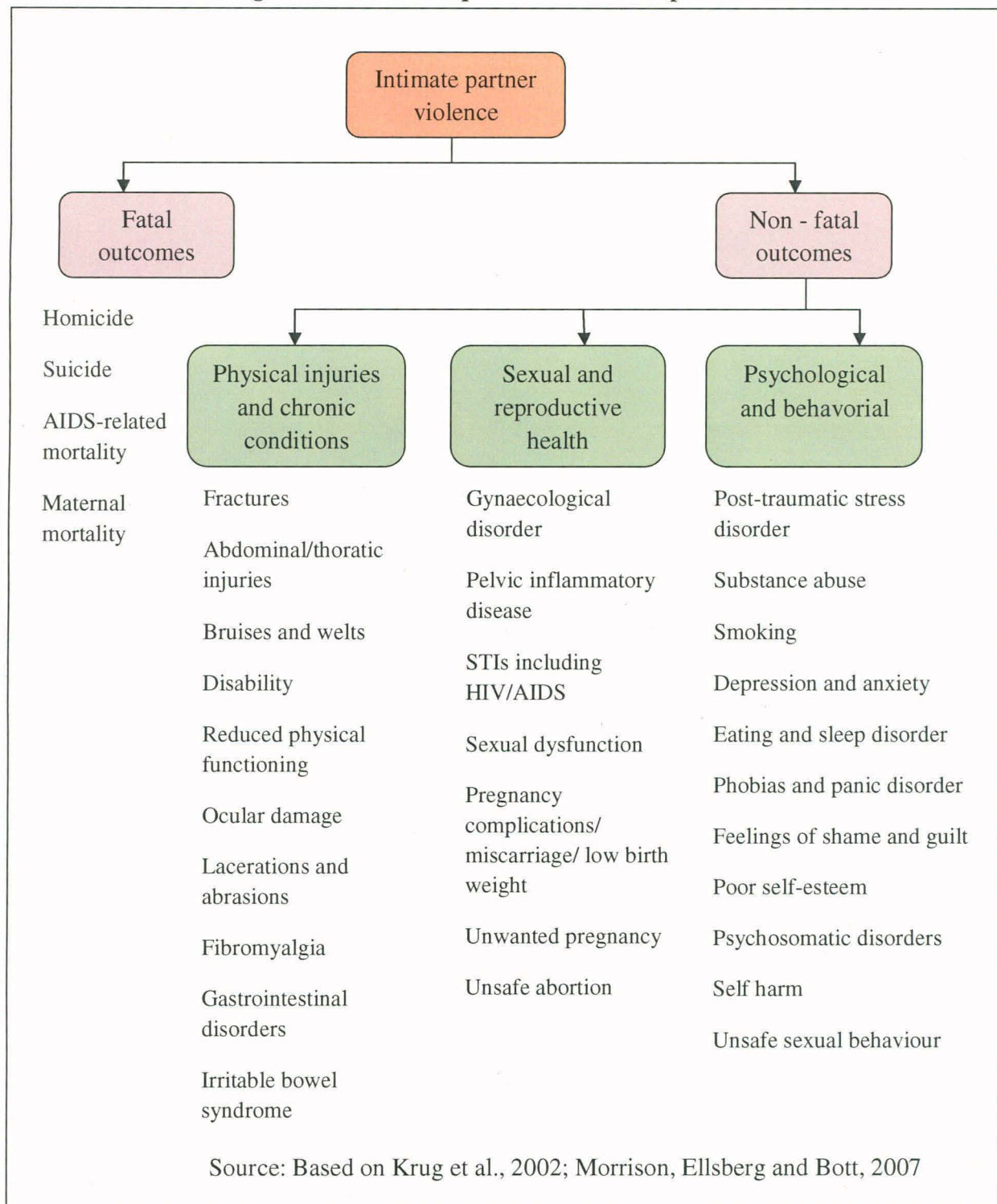
For woman who experiences domestic violence, the consequences can range from fatal ones such as homicides, suicides and AIDS-related deaths to nonfatal ones such as physical injuries, chronic pain syndrome, gastrointestinal disorders and so on. (Fig1.1).

The experience of abuse often erodes women's self esteem and puts them at greater risk of a variety of mental health problems including depression, post-traumatic stress disorder, addiction to drug and alcohol and so on. Many women consider psychological consequences of abuse to be even more serious than its physical effects (Heise, 1999). Gender-based violence also affects the behavior of the children of women who experience violence. Researchers have documented such negative health outcomes as emotional and behavioral problem of the children, poor school performances, low self-esteem and in case of boys increased risk of perpetrating intimate partner violence as adults (Morrison, Ellsberg and Bott, 2007; UNIFEM, 2004).

Domestic violence has serious reproductive health consequences on women. The concept of reproductive health came in forefront in the International Conference on Population and

Development (ICPD) held in Cairo (1994) as a preferable alternative to narrowly focused family planning programme. Reproductive health offers a comprehensive and integrated approach to

Fig 1.1: Health consequences of intimate partner violence



health needs related to reproduction. In the Programme of Action of ICPD, reproductive health was defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so". Glasier et al (2006) have identified five core components of sexual and reproductive health care: (a) improvement of antenatal, perinatal, postpartum, and newborn care; (b) provision of high quality services for family planning, including infertility services; (c) elimination of unsafe abortions; (d) prevention and treatment of sexually transmitted infections, including HIV, reproductive tract infections, cervical cancer and other gynaecological morbidities; and (e) promotion of healthy sexuality.

The impact of domestic violence on reproductive health encompasses unwanted pregnancies and restricted access to contraceptives, pregnancy complications and adverse pregnancy outcomes, maternal deaths, persistent gynaecological problems, increased level of sexually transmitted disease including HIV/AIDS, and psychological problems including fear of sex and loss of pleasure. Therefore, the Programme of Action of ICPD, Cairo (1994) recognized that gender based violence is an obstacle to women's reproductive and sexual health.

Partner violence can lead to unwanted pregnancy or sexually transmitted infection, directly through coerced sex or by interfering with a woman's ability to use contraceptives (Moore, 1999; Heise et al., 1999, Maman et al., 2000) and indirectly by increasing their sexual risk-taking tendency. These include having multiple partners, having non-primary partners, engaging in sex work, using drugs and drinking alcohol before having sex (Moore, 1999; Dunkle et al., 2004; Jewkes et al., 2010). Several studies show that experience of violence and controlling behaviour from male partners are associated with increased risk of HIV infection of women (Maman et al, 2002; Dunkle et al., 2004; Jewkes et al., 2006 and 2010).

Intimate partner violence accounts for a substantial but largely unrecognized proportion of maternal mortality. Ganatra, Coyaji and Rao (1998) in their study in Maharashtra, India, found that 16 percent of all deaths during pregnancy were the result of partner violence. Studies have shown that women suffering from chronic pelvic pain are consistently more likely to have a

history of physical and sexual abuse by their partners (Schei and Bakketeig, 1989; Salam, Alim and Noguchi, 2006).

Significant amount of literature show that pregnant women who have experienced violence are more likely to avoid or delay in seeking prenatal care (Taggart and Mattson, 1996; Dietz et al., 1997; Gazmararian et al., 1995; Parker et al., 1994; Goodwin et al., 2000; Diop-Sidibe, Campbell and Becker, 2006; Nunes et al., 2010) which is a risk factor of maternal morbidity and neo-natal mortality. Partner violence has been linked with increased risk of miscarriages and abortions, premature labour, foetal distress and low birth weight babies (Amaro et al., 1990; Jacoby et al., 1999; Berenson et al., 1994; Bullock and McFarlane, 1989; Parker et al., 1994; Nunes et al., 2010). Violence is also regarded as a leading contributor to infant and child deaths particularly in the developing world (Heise et al., 1999 and 2002; Jejeebhoy 1998; Singh, Mahapatra and Dutta 2008; Ackerson and Subramanian 2009).

Over the past twenty years, there has been a growing recognition of the overwhelming impact of domestic violence on reproductive health of women as well as on other aspects of her physical and mental health (Heise, Ellsberg and Gottemoeller, 1999 and 2002; Moore Melissa, 1999; UNFPA, 2000; Krug et al., 2002; Campbell et al., 2002). In this context, the present study aims to examine the relationship between domestic violence and selected reproductive health outcomes and reproductive behavior of the women in India.

1.2. Objectives of the study

A wide range of reproductive health problems of women can arise from spousal violence. But due to time and data constraints this study is going to analyze the relationship between domestic violence and three important aspects of women's reproductive health, namely, women's risk to STIs, utilization of ANC and unintended pregnancy. The following objectives are set for the present study:

1. To explore the relationship between physical and sexual violence by the current husband and women's experience of sexually transmitted infections (STIs).
2. To analyze if spousal violence (physical, sexual or emotional) has any impact on the utilization of antenatal care services.
3. To examine the role of spousal physical and sexual violence on unintended pregnancy.

1.3. Source of data

The present study is based on data of third National Family Health Survey (NFHS-3) conducted in 2005-06, which was preceded by NFHS-1 (1992-93) and NFHS-2 (1998-99). NFHS-3 provides information on fertility, mortality, family planning, HIV-related knowledge, domestic violence, women's empowerment and important aspects of nutrition, reproductive health and health care. Using multi-stage probability sampling, NFHS-3 collected information from a nationally representative sample of 109,041 households, 124,385 women aged 15-49 years and 74,369 men aged 15-54 years who stayed in the household the night before the interview. The sample covered 99 percent of India's population living in 29 states. For collecting data NFHS-3 used three types of questionnaires: Household Questionnaire, the Woman's Questionnaire and the Man's Questionnaire. The information on antenatal care and unintended pregnancy used in our analyses was collected through Woman's Questionnaire and the information about sexually transmitted infections of women and men was collected through Woman's and Man's questionnaire respectively.

In NFHS-3, a module of questions on domestic violence was included as a part of the Woman's Questionnaire. The module collected information on physical, sexual and emotional violence perpetrated by husbands as well as by other household members. Due to the sensitivity of the topic and for the safety of the respondents and the interviewer, only one woman from each household was selected for the domestic violence module. In India, less than one percent of women selected for interview with the module could not be interviewed because of privacy considerations. Thus the resulting sample of women for domestic violence module became 83,703 (13,999 never married women and 69,704 ever-married women) or 67 percent of the entire NFHS-3 sample of women.

1.4. Conceptual framework and methodology

Domestic violence is associated with two most intractable reproductive health issues of present times – unintended pregnancies and sexually transmitted infections. Researches show that in many societies, domestic violence is one of the important causes of lower utilization of antenatal care. Like domestic violence, the problem of unintended pregnancy and sexually transmitted diseases are increasingly being recognized as public health issues. Many of the

unintended pregnancies are ended in unsafe abortion, majority of which are performed in developing countries. It is also associated with non-utilization of antenatal care (ANC) or late entry into ANC which itself is responsible for increased maternal and perinatal mortality and adverse pregnancy outcomes. STDs comprise a significant public health threat particularly to women. STDs are associated with poor birth outcomes, ectopic pregnancy, infertility, cancer of the genital tract etc. Thus it is evident that among various reproductive health issues, unintended pregnancy, sexually transmitted diseases of women and non utilization of antenatal care are of particular importance affecting millions of women and their children. Therefore, we are interested to analyze if domestic violence affects these three reproductive health aspects of women in India.

For the analysis, it is required to select the dependent and independent variables of this study. To examine the relationship between women's experience of STI/STI symptoms and domestic violence, the dependent variable is selected as 'women's STI status in 12 months preceding the survey'. The variable is categorized as 'did not have an STI/STI symptom' and 'having had an STI/STI symptom'. For analyzing the relationship between spousal violence and utilization of ANC, our dependent variable is 'women's utilization of at least three ANC services for last child birth.' It is categorized as 'did not receive at least three ANC services' and 'received at least three ANC services'. Here it is important to mention that the National Child Survival and Safe Motherhood programme (1994) recommended that a woman should have at least 3 ANC visits during her entire period of pregnancy. Finally, to determine the relationship between domestic violence and unintended pregnancy, 'Pregnancy intention of women' is selected as dependent variable and it is categorized as 'intended' and 'unintended'. The details of these three dependent variables have been discussed in chapter 3, 4 and 5 respectively.

The key independent variable of this study is women's experience of spousal violence. Only married women have been considered for the present study. Married women's domestic violence status is measured by asking them the following set of questions:

Does/did your (last) husband ever do any of the following things to you: (a) Slap you? (b) Twist your arm or pull your hair? (c) Push you, shake you or throw something at you? (d) Punch you with his fist or with something that could hurt you? (e) Kick you, drag you or beat you up? (f) Try to choke you or burn you on purpose? (g) Threaten or attack you with a knife, gun, or any

other weapon? (h) Physically force you to have sexual intercourse with him even when you did not want to? (i) Force you to perform any sexual acts you did not want to? Items (a)-(g) are counted as acts of physical violence and items (h)-(i) are considered as act of sexual violence. Also items (a)-(e) comprise less severe (physical) violence and items (g) and (h) are regarded as severe (physical) violence.

Emotional violence is measured using the following set of questions: Does/did your (last) husband ever: (a) Say or do something to humiliate you in front of others? (b) Threaten to hurt or harm you or someone close to you? (c) Insult you or make you feel bad about yourself?

The questions were asked with reference to the current husband for women currently married and with reference to the most recent husband for women formerly but not currently married. Women could answer 'yes' or 'no' to each item; If a woman said 'yes' to one or more of these items, she is considered as having experienced spousal violence ever and if she said that the violence occurred in 12 months preceding the survey, she is considered as having experienced recent violence.

In the present study, spousal violence is treated as a proximate determinant through which demographic and socioeconomic factors (independent variables) affect all the dependent variables, namely, women's recent STI status, women's utilization of ANC services, and pregnancy intention of women. Cross tabulations and Pearson's Chi-square test have been used to obtain a preliminary idea of the association between the dependent and independent variables; and to identify the net impact of domestic violence on the dependent variables, bivariate logistic regression analysis has been used as all the dependent variables are dichotomous in nature. All the statistical analyses were done using SPSS for Windows, version 16.0.

For determining the relationship between spousal violence and women's experience of STI, data from couple's file of NFHS-3 has been used. First the relationship between spousal violence and women's experience of STIs has been analyzed without considering other factors (Model 1). Then several risk factors that affect women's exposure to infection, are added as control (Husband's STI status, multiple sexual partners of the husband and the wife, age at first marriage which is a proxy to age at first sex and current use of contraceptive method) to the violence factor to examine if domestic violence still has significant impact on the dependent

variable (Model 2). These risk factors, likewise domestic violence, are also proximate determinants of women's experience of STIs. However, women's risk of STI is mediated by the background characteristics of women, because all the proximate determinants of STI including domestic violence are likely to vary by these characteristics. Also they may have direct influence on women's STI status. Therefore, the demographic and socioeconomic factors (Age of women, pregnancy wastage, parity, level of education, religion, caste/tribe, type of place of residence, current work status and wealth) are also added as control (Model 3). Finally regional factor has been added to model 3 as we get the final model (Model 4). In the present analysis, considering the combined effects of geographical location, cultural setting and socio-economic characteristics, India has been divided into five regions – northern, eastern, north-eastern, western and southern.⁶ So in our analysis along with violence factor, we have identified other important variables (both independent and intervening) affecting married women's risk of STIs. After covariate adjustment, if spousal violence still remains significant and increases women's probability of experiencing an STI/symptom of an STI, then we can say that spousal violence is an independent risk factor for sexually transmitted infections of women. Appendix 1.7 shows the conceptual model explaining married women's risk of STIs.

The same methodology has been used to examine if spousal violence has a significant impact on unintended pregnancy and for the utilization of adequate ANC (at least three) by women. In these two cases, initially the relationship between the domestic violence and the dependent variable has been examined. Then demographic and fertility related factors are added as control. Further socioeconomic variables are added as control to determine if still domestic violence exerts significant impact on the dependent variable and finally regions in India is has also been added as a control. For these analyses the dataset of women's file of NFHS-3 has been used.

Women's utilization of ANC services is directly influenced by their background characteristics (age of women, age at marriage, education of women, religion, caste/tribe, type of place of residence, exposure to mass media, restriction of women's mobility, occupation of women, wealth, regions in India) and fertility related factors (birth order of the last child, desirability of the last child birth). These socioeconomic, demographic and fertility related

factors through spousal violence (the intermediate variable) may affect woman's utilization of ANC (See appendix 1.8).

Likewise the utilization of ANC, married women's experience of unintended pregnancy is affected directly by their background characteristics (age of women, number of surviving children, education of women, religion, caste/tribe, type of place of residence, marital control by husband, current work status of women, wealth, regions in India). These demographic and socioeconomic factors may also influence women's experiences of unintended pregnancy through two proximate determinants, namely, spousal violence and use/non-use of contraceptives (See appendix 1.9).

Thus, it is evident from the above discussion that using the conceptual frameworks, that explain the factors affecting women's experience of recent STIs, unintended pregnancy and utilization of ANC, we have tried to find out the net impact of spousal violence on these three reproductive health aspects of women. Naturally we get an idea about other background factors that are associated with these three reproductive health aspects. Apart from the domestic violence factor which has already been discussed in great details, the description of other dependent and explanatory variables included in the analyses and their operational definitions have been presented in chapter 3, 4 and 5 where the relationship between domestic violence and the dependent variables has been explored in detail.

Now a brief description of the statistical methods used in the analyses has been given below:

Chi-square and cross tabulation – Chi-square is one of the very popular methods for testing hypotheses on discrete data. The chi-square test of independence is used to test the hypothesis, that two categorical variables are independent of each other (null hypothesis). A small chi-square statistic indicates that the null hypothesis is correct and the two variables are independent of each other.

It is often useful to look at contingency tables along with the results of the chi-square test to gain useful insight into the data. Contingency tables or cross-tabulation tables present the data in $r \times c$ tables where r is the number of rows and c is the number of columns and each row or

column is a frequency table of one variable as the observations falling within a specific category of the other variable.

The chi square statistic is the primary statistic used for computing the statistical significance of the cross tabulation table. The procedure involves comparing the observed cell frequencies with the expected cell frequencies. Observed cell frequencies are the actual number of cases falling in different cells of the contingency table and expected frequencies are the number of cases that should fall in each cell if there is no relationship between the two categorical variables. While observed cell frequencies can be directly obtained from the given data, the expected cell frequency is calculated by the formula $(R_i \times C_j) / N$, where R_i and C_j are the totals of the i th row and j th column and N is the total sample size. Along with the chi-square statistic, it is required to examine the degrees of freedom associated with the contingency table to find out the significance of the relationship. The degrees of freedom in case of a contingency table of r rows and c column is $(r-1)(c-1)$. The degrees of freedom and significance level are used to find the values of Chi-square from the standard table. If the tabulated Chi-square value is less than the calculated Chi-square value, the null hypothesis is rejected and it is concluded that there is some significant association between the two variables.

Binary logistic regression – Binary logistic regression is a technique for multivariate analysis and is applied when the dependent variable is dichotomous in nature. Logistic regression is used to estimate the net effect of each variable on the probability of occurrence of an event. The general logistic model expresses a qualitative dependent variable as a function of several independent variables.

The basic form of logistic regression is

$P = 1 / (1 + e^{-Z})$(i) where P is the estimated probability (e.g. probability of having an unintended pregnancy by a woman), Z is the predictor variable and e is the base of natural logarithm with a value of 2.7183.

$$\text{Or, } P = e^Z / (1 + e^Z)$$

$$\text{Or, } 1 - P = 1 / (1 + e^Z) \dots \dots \dots \text{(ii)}$$

$$\text{Or, } P / (1 - P) = (1 + e^Z) / (1 + e^{-Z}) = e^Z \dots \dots \dots \text{(iii)}$$

Taking the natural log of equation (iii), we have

$$\text{Logit}(P) = \ln \{P / (1 - P)\} = Z \dots \dots \dots (\text{iv})$$

The quantity $P / (1 - P)$ is called the odds, hence the quantity $\ln \{P / (1 - P)\}$ is called the log of odds or the logit of P.

$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \dots \dots + \beta_k X_k$ where $X_1, X_2, X_3, \dots, X_k$ are the independent or predictor variables and $\beta_1, \beta_2, \dots, \beta_k$ are the regression coefficients to be estimated.

The logit becomes negative and increasingly large in magnitude as the odds ratio decreases from 1 to 0, and becomes positive and increasingly large as the odds ratio increases from 1 to infinity.

The logit regression coefficient for a category of a variable is interpreted in relation to the reference category. $\text{Exp}(\text{coefficient for a category})$ gives the odds ratio, (i.e., ratio of odds for the specified category to the odds for the reference category) and it represents the multiplicative effect for one unit change in the independent variable X_1 on the odds of the response variable.

1.5. Hypotheses

The following hypotheses have been selected for the present study:

H₁: Women's self reported STIs/symptoms of STIs in the past year and their experience of physical and sexual violence by their husbands in the past year are positively associated.

H₂: After accounting for higher risk sexual behaviour of women and their husband, and demographic, socioeconomic and regional factors, spousal violence significantly increases women's chances of reporting recent STIs/symptoms of STIs.

H₃: Intimate partner violence is associated with the late entry into antenatal care.

H₄: After controlling for the background characteristics, women who have ever experienced spousal violence are less likely to receive at least 3 antenatal care services than the women who have never experienced spousal violence.

H₅: Women who are physically or sexually abused by their husbands have higher chances to experience unintended pregnancy than the non-abused women.

1.6. Significance of the study

Domestic violence in all its forms causes immense damage to the reproductive health and well-being of women throughout the world. Although the associations between domestic violence and detrimental health outcomes of women and their children have been well established in research from industrialized countries, until recently, it has occasionally been studied in the context of developing countries. In India, though some studies regarding the impact of domestic violence on reproductive health have been done, they are executed primarily at micro level. Such studies with nationally representative samples are very few. While the prevalence of domestic violence with background characteristics was analyzed and published in the reports of NFHS 3, the associated health consequences were not examined there. However, Kishor and Johnson (2004) in their gigantic work '*Profiling Domestic Violence: A Multi-Country Study*' (2004), tried to explore the relationship between domestic violence and various reproductive health outcomes of women for several countries including India; but the study examined only bivariate relationships without controlling for other factors. To fill this gap the present study aims to analyze the net impact spousal violence on reproductive health outcomes and behaviour of women in India using the dataset of the third National Family Health Survey (NFHS-3). Thus the present study is likely to contribute to the better understanding of the relationship between domestic violence and reproductive health of women in India.

1.7. Limitations of the study

A few limitations of the present study must be noted. The mechanism through which violence affects the reproductive health of women is difficult to establish with our dataset, and therefore, this study is confined in analyzing whether spousal violence has a significant impact on the reproductive health and reproductive behaviour of women.

Exposure to spousal violence is based on self reporting, and is therefore, subject to recall bias as well as non-disclosure. According to Pallitto and O'Campo (2004, pp 170), " The potential for underreporting is an important concern in research on intimate partner violence because of the sensitivity of the subject, social stigma and participants' privacy and safety concerns." The problem of underreporting has been demonstrated by Ellsberg and Colleagues, who showed that one study specifically designed to capture data on intimate partner violence

among Nicaraguan women yielded far higher rates than what was depicted in the reports of DHS of Nicaragua.

Pregnancy intendedness is a complex concept and the measurement of unintended pregnancy is complicated by the issue of post-birth rationalization whereby a pregnancy that was originally considered unwanted could be categorized by the respondent as wanted after the birth. In this study, data on pregnancy intendedness has been used for the most recent pregnancy (current pregnancy or the last pregnancy that ended in a live birth of women who have given birth in the past five years) to avoid the recall bias. However, a single question asking women about the intendedness of pregnancy after child birth, is unable to represent the situational changes. For example, responses may vary due to changes in family income which may change with time and may influence the subjective feelings of a woman about her pregnancy over time. Further, this analysis does not account for pregnancies that are terminated early by spontaneous or induced abortion. Because pregnancies that end in abortions are generally unintended, therefore, their exclusion in calculating pregnancy intendedness is likely to cause underestimation of the rates of unintended pregnancy. Further this study is restricted to the unintended pregnancy, it did not take into account mistimed and unwanted pregnancy separately.

In the present study self-reported information on STI or symptoms of STIs has been used. The self reported information may vary from the clinically tested and laboratory confirmed results of STIs (Jejeebhoy, Koenig and Elias, 2003, cited in Koenig et al, 2004). However in a nationally representative sample survey like NFHS, it is difficult to conduct laboratory testing for confirmation of STIs. Also self reported information on STI is likely to vary depending upon education, awareness level of people etc.

In NFHS-3, information on antenatal care is provided for women's latest child birth only. As utilization of ANC varies with birth order, women who had more than one child and may have received ANC for their earlier deliveries, but did not receive ANC for their latest delivery are shown as not received any ANC. This may influence violence and ANC utilization relationship.

In the multivariate analysis, only selected variables are controlled for, which are chosen on the basis of earlier studies and depending on data availability, leaving it possible that there is residual confounding. It is assumed that the inclusion of some variables may further diminish the strength of association between violence and reproductive health outcomes.

Because of cross sectional nature of data it is not possible to assume the causal relationship between domestic violence and women's reproductive health outcomes. It is not possible to determine from the data whether spousal violence had led to unintended pregnancy or whether the husbands of the respondents reacted to unintended pregnancy with physical or sexual violence. Also whether physically or sexually abusive acts occurred before or after STI infection cannot be determined.

Finally the study is restricted to the married women only. However, it is unlikely that the findings will vary for the unmarried women.

1.8. Organization of the study

Before proceeding to the next chapter, let us present the organization of this study. The dissertation is divided into six chapters. Chapter one presents the introduction. It also incorporates the objectives, the source of data, conceptual framework and methodology, and hypotheses of the study. Further, the significance and the limitations of the present study are also discussed in this chapter. The second chapter presents literature review. Chapter three analyzes the relationship between spousal violence and women's experience of STIs. In chapter four, the relationship between spousal violence and women's utilization of antenatal care is explored. Chapter five examines the relationship between spousal violence and unintended pregnancy. The conclusion of this study is stated in the sixth chapter.

End Note

¹ The term gender based violence has been defined as “acts or threats of acts intended to hurt or make women suffer physically, sexually or psychologically, and which affect women because they are women or affect women disproportionately. Thus gender based violence is often used interchangeably with violence against women (Krantz and Garcia-Moreno, 2005).

² Respondent means any adult male person who is, or has been, in a domestic relationship with the aggrieved person and against whom the aggrieved person has sought any relief under this Act: Provided that an aggrieved wife or female living in a relationship in the nature of a marriage may also file a complaint against a relative of the husband or the male partner (THE PROTECTION OF WOMEN FROM DOMESTIC VIOLENCE ACT, 2005; Ministry of Law and Justice, Govt. of India).

³ Aggrieved person means any woman who is, or has been, in a domestic relationship with the respondent and who alleges to have been subjected to any act of domestic violence by the respondent (THE PROTECTION OF WOMEN FROM DOMESTIC VIOLENCE ACT, 2005; Ministry of Law and Justice, Govt. of India).

⁴ This is a simplified version of the forms of domestic violence indicated in the original document, i.e., THE PROTECTION OF WOMEN FROM DOMESTIC VIOLENCE ACT, 2005.

⁵ The sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability.

⁶ The states of Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Uttaranchal, Delhi, Rajasthan, Uttar Pradesh and Madhya Pradesh constitute the northern region. Eastern region comprises of Bihar, West Bengal, Orissa, Jharkhand and Chhattisgarh. Eight states constitutes the north-eastern region, namely, Sikkim, Assam, Meghalaya, Manipur, Mizoram, Nagaland , Tripura and Arunachal Pradesh. The western region includes Maharashtra, Gujrat and Goa. Finally, the states of Andhra Pradesh, Karnataka , Tamil Nadu and Kerala forms the southern region.

Chapter – 2

Review of Literature

2.1. Domestic violence and women's health

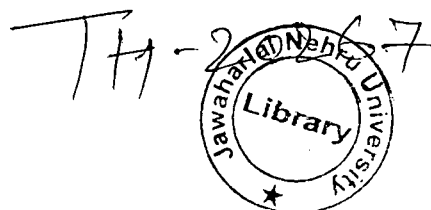
The effects of violence can be devastating to a woman's reproductive health as well as other aspects of her physical and mental well-being (Heise, Ellsberg and Gottemoeller, 1999). Poor birth outcome and death of infants are also associated with domestic violence. An extensive literature survey regarding the impact of spousal violence on health of women and their children has been presented below.

2.1.1. Physical and sexual violence and Unintended Pregnancy

A study of the available literature on violence and women's health reveals that a strong relationship exists between violence against women and the risk of unintended pregnancy. Unintended pregnancy may result directly from sexual abuse, as coercive or non consensual intercourse leaves little opportunity for women to negotiate contraceptive uses; or indirectly, as abused women may be more likely than other women to be engaged in risky sexual behavior (Moore, 1999; Heise et al., 1999; Hof and Richter, 1999; Koenig et al., 2004, Pallitto and O'Campo, 2004; Cripe et al., 2008).

In a representative survey of women in Texas, more than 12 percent of the 1539 respondents reported having been sexually abused by a husband, ex-husband, boyfriend or ex-boyfriend after the age of 18. Of those abused women, 12.3 percent stated that they had been prevented from using birth control measure and 10.7 percent said that they had been forced to get pregnant against their will (Grant, Preda and Martin, 1989). Based on a survey of 1200 women in the USA, Dietz et al. (1999) found that women who reported having been psychologically, sexually, and/or physically abused or whose mothers have been beaten by their partners, had higher rates of unintended first pregnancies than women who had not experienced abuse. The likelihood that a woman's first pregnancy was unintended increased with both the number of different types of abuse she experienced and the frequency of abuse.

Goodwin et al. (2000), using the data of 39348 women from 14 states of the USA (collected by Pregnancy Risk Assessment Monitoring System, 1996-1997) examined whether



unintended pregnancy is associated with physical abuse of women occurring around the time of pregnancy. Their study revealed that women who had mistimed or unwanted pregnancies reported significantly higher levels of abuse at any time during the 12 months before conception or during pregnancy (12.6% and 15.3% respectively) compared to those with intended pregnancies (5.3%). Controlling for socio-demographic and economic factors, women with unintended pregnancies had 2.5 times the risk of experiencing physical abuse compared to those whose pregnancies were intended.

On the basis of the interview of 575 sexually experienced women aged 15-19 in Uganda in 2001-2002, Koenig et al. (2004) observed that 14 percent of young women had experienced their first sexual intercourse as being coerced. After the effects of the respondents' demographic characteristics, education and religion were accounted for, the ever-pregnant women who reported coerced first intercourse were 2.1 times more likely to report their current or most recent pregnancy as unintended, than those who did not. Further, compared to unmarried respondents, currently married women had significantly decreased odds of unintended pregnancy.

Analyzing the data of Demographic and Health Survey (DHS), 2000 for Colombia, Pallitto and O'Campo (2004) found that 55 percent of the sample women had at least one unintended pregnancy during the period 1995-2000 and 38 percent had been physically or sexually abused by their current or the most recent partners. In their logistic regression analysis that controlled for demographic and fertility-related factors, women's adjusted odds of having an unintended pregnancy were significantly elevated if they had been physically or sexually abused (odds ratio, 1.4). Their calculations based on population-attributable risk estimates suggest that unintended pregnancies would decrease by 5 percent if intimate partner violence were eliminated in Colombia. In another study based on the same data source, they observed that living in a municipality with high rate of intimate partner violence increased one's odds of unintended pregnancy by more than 2.5 times (Pallitto and O'Campo, 2004). Also, living in a municipality with high rates of male patriarchal control significantly increased women's odds of having an unintended pregnancy by almost four times.

Kishor and Johnson (2004) in their multi-country study using the DHS data from nine developing countries (Cambodia, Colombia, the Dominican Republic, Egypt, Haiti, India, Nicaragua, Peru and Zambia) found that except Haiti, in all countries including India, women

who had experienced violence were consistently less likely to say that their birth was wanted when it was conceived, compared to women who had never experienced violence. However, in this study the bivariate association between violence and unintended pregnancy was examined. In 2008, the same kind of study was carried out by Hindin, Kishor and Ansara using the DHS data from 10 countries. They first conducted bivariate analysis and found that in nine out of ten countries (Bangladesh, Bolivia, Dominican Republic, Haiti, Kenya, Malawi, Moldova, Rwanda, Zambia and Zimbabwe) positive correlation exists between intimate partner violence (IPV) and unintended pregnancy. But logistic regression analysis revealed that only in seven countries the odds of mistimed or unwanted pregnancy were significantly higher for the abused women than the non-abused women.

Using the Bangladesh DHS survey, 2004, Silverman et al. (2007) found that three out of four married women in Bangladesh experienced violence from their husbands. In adjusted logistic regression analyses, women experiencing physical and not sexual IPV were more likely to report an unwanted pregnancy resulting in a live birth in the past 5 years and their most recent pregnancy resulting in a live birth being unwanted.

A recent study based on interview of 2167 women during their post partum recovery period in a hospital, revealed that prevalence of IPV (40 percent) and unintended pregnancies (65.3 percent) were common in Lima, Peru (Cripe et al., 2008). Compared to non-abused women, those who experienced abuse (physical or sexual) had a 1.63 fold increased risk of unintended pregnancy. This risk was 3.31 fold higher among women who experienced both physical and sexual violence compared to non-abused women. However, in their study, the association between sexual abuse alone and unintended pregnancy did not achieve statistical significance.

Three studies have been found that concentrated on domestic violence and unwanted pregnancy in the context of India. In one study, Stephenson et al. (2008) using the data of National Family Health Survey (NFHS) -2 and a 2002-03 follow up survey in four states of India (Bihar, Jharkhand, Maharashtra and Tamil Nadu), found that, controlling for a range of socioeconomic and demographic factors, women who experienced spousal physical violence were significantly more likely to experience an unwanted pregnancy. Shahina Begum et al. (2010) based on NFHS -2 data explored that in India, 27 percent of the currently married women

had experienced unintended pregnancies. After controlling for confounding variables, women who were ever physically mistreated by their husbands were 47 percent more likely to experience unintended pregnancies. A large scale survey among married men in Uttar Pradesh demonstrated that forced sex directly led to unintended pregnancies. Men who admitted having forced their wives to have sex were 2.6 times more likely than other men to have caused an unplanned pregnancy (Martin et al., 1999).

A qualitative study from urban India (Gupta and Ailawadi, 2005) sought to examine the impact of sexual abuse experienced by adolescent women. The study found that such experience was often associated with risky sexual behaviour. Several women reported that they identified their own self-worth with the number of sexual partners they had. Also some of them stated that they experienced unintended pregnancies and abortions.

Looking from the other end, unintended pregnancy can also be a greater risk factor for violence. In fact, pregnancy itself is a vulnerable time for women in abusive relationship (Gelles, 1988). Reviewing earlier studies, Jasinski (2004) found that, while the works of Martin et al. (1996) and PRAMS 1996 Surveillance Report (1999) indicated that greater proportion of women reported less violence during their pregnancy than before the onset of pregnancy, the works of Campbell et al. (1992), Stewart and Cecutti (1993), Taggart and Mattson (1996) and Barenson et al. (1991) suggested that violence might actually escalate with pregnancy. She came to the conclusion that pregnancy did not imply protection from violence and according to Gazmararian et al. (1995), unintended pregnancies carry an even greater risk of violence than intended pregnancies. The study of Gazmararian and his colleagues (1995) revealed that the prevalence of physical violence during pregnancy ranged from 3 percent among women with intended pregnancies to 12 percent with unintended pregnancies. Overall 70 percent of women with unwanted or mistimed pregnancies reported physical violence during pregnancy. Controlling for other variables, the prevalence of physical violence was highest among women with unwanted pregnancies, average among women having mistimed pregnancies, and lowest among women with intended pregnancies. Reviewing the literature on violence against pregnant women in developing countries, Nasir and Hyder (2003) found that the study by Leung et al. (1999) from China and Purwar et al (1999) from India depicted that unplanned pregnancy acted as risk factors for abuse during pregnancy. The reasons behind it are manifold. An early paper by Gelles

suggested five explanations for domestic violence during pregnancy: male sexual frustration, hormone-induced mood swings in the woman, the stress of imminent parenthood, the woman's increased physical vulnerability and helplessness, and a conscious or subconscious desire to terminate the pregnancy (Gelles, 1975 cited in Bacchus, Mezey and Bewley, 2006). A pregnancy might be seen as menacing by men if it was not his decision or if he did not want it and it could fuel violence (Jasinski, 2004). Besides violence could be the result of partner's jealousy and resentment towards the unborn child (Campbell, Oliver and Bullock, 1993). Women also reported that financial worries and their reduced physical and emotional availability during pregnancy could be viewed as a cause of intimate partner violence. Violence often stemmed from abuser's emotional insecurity and the need to enforce power and control (Bacchus, Mezey and Bewley, 2006). It has been suggested that pregnancy acts as an impetus to leaving an abusive partner and the risk of violence increases when a woman is prepared to leave (Binney, Harknell and Nixon, 1981 cited in Bacchus, Mezey and Bewley, 2006).

A number of studies testify that girls with a history of childhood abuse are at a greater risk of becoming pregnant as teenagers than girls who are not abused. Children who have been sexually abused often engage in early and risky sexual behavior as adolescents and as adults that put them at risk of unintended pregnancies and sexually transmitted infections. (Heise et al., 1999). From a community based random survey of women in Los Angeles, Wyatt, Guthrie and Notgrass (1992) showed that women who were sexually abused in childhood were 2.4 times more likely to be sexually revictimized during adulthood; revictimized women, in turn, had a significantly higher rate of unintended and aborted pregnancies than non-revictimized women. Boyer and Fine's (1992) study of adolescent mothers in Washington State suggested that in the United States the key factor in the problem of adolescent high-risk sexual behavior and adolescent pregnancy might be the issue of early sexual victimization. However, Spatz and Kuhns (1996) in their study in a metropolitan area of the USA did not find any association between childhood abuse and increased risk of teenage pregnancy.

Violence has also been linked with increased possibilities of abortions which are the extreme effort of culminating the problem of unintended pregnancy. Evins and Chescheir's study (1996) in North Carolina, USA revealed that among the women who requested abortion services at a university hospital, 31% had experienced physical abuse at some point in their life, and 22%

had been abused in the previous year. They opined that the women might choose to terminate a pregnancy from an abusive partner in order to eliminate another source of power and control conflicts and out of fear that the partner might abuse the child. In the 2003 Kenya DHS survey, women who reported ever experiencing physical or emotional violence were more likely to report ever experiencing a terminated pregnancy (Emenike, Lawoko, and Dalal, 2008). In a study Bourassac and Berube (2007) observed that for women in the elective abortion (EA) group, the probability of being a victim of IPV in the past year (including psychological, physical, and/or sexual abuse) of the survey was almost three times higher than for women in the continuing pregnancy (CP) group (25.7% vs. 9.3%, $P < 0.0001$), and the risk of being a victim of physical and/or sexual IPV in the past year than the CP group was almost four times higher (7.1% vs. 1.8%, $P < 0.0001$). Hindin, Kishor and Ansara (2008) found that among the 10 developing countries under study, in Bangladesh, Bolivia, the Dominican Republic, Malawi, Moldova and Zimbabwe, women with a history of violent current relationship were more likely to report ever having had an abortion, miscarriage or stillbirth than those without such a history. The odds of a terminated pregnancy ranged from 1.48 in Bangladesh to 1.75 in the Dominican Republic. In many countries abortion is illegal. Where abortions are clandestine and unsafe, the consequences for women's health and survival are damaging, especially for poor, rural, less educated and young women (Henshaw, Singh and Haas, 1999). One study from Bangladesh demonstrated that women experiencing violence from husbands were more likely to report pregnancy loss in the form of miscarriage, induced abortion, or stillbirth. However, assessed individually, stillbirth and induced abortion were found unrelated to violence from husbands (Silverman et al., 2007).

2.1.2. Women's experience of violence and HIV/ AIDS and other STDs

Beyond physical injury and mental trauma, the victims of IPV face the risk of sexually transmitted diseases including HIV/AIDS. Violence influences the risk of HIV and other STIs directly when it interferes with women's ability to negotiate condom use (Wingood and DiClemente, 1997; Heise et al., 1999; Moore, 1999; Maman et al., 2000). Due to unequal power in sexual relationships, which is a result of culturally validated ideals of manhood that legitimize violence on women, women exposed to violence have more frequent sex; they are less able to use condoms and protect themselves from STI including HIV (Jewkes, 2010). Abused women may be more likely than other women to engage in those sexual behaviours that increase their

risk of being exposed to STDs. These include having multiple partners, having non-primary partners, engaging in transactional sex, engaging in sex work, using drugs and drinking alcohol before having sex (Moore, 1999; Silverman, 1999; Dunkle et al., 2004; Dude, 2007; Fuentes, 2008; Jewkes et al., 2010). Several studies find that sexual abuse in childhood appears to increase the risk of sexually transmitted infections among adults, largely through its effect on high-risk sexual behavior (Zierler et al., 1991; Fergusson et al., 1997; Roosa et al., 1997; Stock et al., 1997; Felitti et al., 1998; Walker et al., 1999; Maman et al., 2000; Gupta and Ailawadi, 2005; Dude, 2007).

Plichta and Abraham (1996), based on telephonic interview of 1599 women in the USA, found that controlling for socio-demographic factors and access to medical care, violent events (child abuse, violent crime and spouse abuse) remained significantly and positively associated with STDs and urinary tract infection of women. Martin et al. (1999), in their study in North Carolina found that women, who reported having experienced both physical and sexual abuse, were more likely to have an STD than the non-victims, even after accounting for confounding variables. The logistic regression analysis also showed a relationship of borderline statistical significance between non-sexual physical abuse and STDs.

A study conducted among 203 women, residing in five domestic violence shelters in Alabama, USA expound that women having a history of both sexual and physical abuse were more than three times as likely to report having an STD during the abusive relationship; 5.6 times more likely to report having multiple STDs and 2.7 times more likely to worry about acquiring HIV compared to the women experiencing only physical abuse (Wingood, DiClemente and Anita Raj, 2000).

Maman and colleagues (2000) reviewed 13 cross-sectional studies that examined the association between forced/coercive sex and HIV risk behaviours. 11 from the 13 studies were from the USA and the remaining two were from Africa. They concluded that sexual coercion was a risk factor for HIV and that HIV infected women experienced more sexual coercion than HIV uninfected women. As direct casual relationship between forced sex and HIV is difficult to establish, the 13 studies reflected that forced sex increased other HIV risk taking behaviours (i.e. exchange of sex for money, intravenous drug use, low rate of condom use etc.) in some underlying context. By underlying context they referred to the situations that characterize the

women's lives, such as poverty, low educational status, poor job opportunities, public housing etc. Most of the studies provided strong evidence for the relationship between childhood sexual assault and HIV risk taking behaviours in adulthood. Two studies provided some evidence that sexual assault were associated with substantial additional risk of STDs.

Rao Gupta (2002) also pointed out that women's economic vulnerability and dependence on men increased their vulnerability to HIV by constraining their ability to negotiate the use of condom, discuss fidelity with their partners or leave risky relationships. An interesting study by Johnson and Hellerstedt (2002), based on 744 clients of an urban prenatal clinic in the USA, revealed that compared to women who reported no abuse, those who reported current abuse and those with a history of only sexual abuse had about twice the odds of having STD and those with a history of both physical and sexual abuse had three times the odds of having a history of STD controlling for demographic and risk factors of violence. However these researchers found that current abuse and having a history of only physical abuse were not significantly associated with having a current STD infection.

Koenig and associates (2004), in a population based survey in Rakai, Uganda found that the proportion of adolescent women who reported at least one genital tract symptom was twice as high among those who had experienced coerced first sex as among those who had not (42% vs. 21%), a statistically significant difference. In the multivariate model which controlled for education, religious affiliation, age at first sex and marital status, they found that the risk of reporting one or more genital tract symptom was significantly higher among women who had experienced coerced first intercourse than among those who had not (OR 2.6).

A cross sectional study of 1366 women, attending four centers in Soweto, South Africa, for antenatal care and accepted HIV testing, revealed that women with violent or controlling male partners were at increased risk of HIV infection. The association between IPV and HIV remained significant after adjusting for violence-associated risk behaviour including having multiple partners, engaging in transactional sex and substance use. Though physical IPV alone or combined with sexual violence was associated with increased odds of HIV infection of women, sexual IPV alone did not seem to be associated with HIV infection. None of child sexual assault, forced first intercourse and sexual assault by non-partners was found to be independently associated with increased odds of HIV infection (Dunkle et al., 2004). In contrast, the study of

Jewkes et al. (2006) in rural Eastern Cape province of South Africa demonstrated that though IPV was associated with HIV, the effect was non-significant after adjusting for HIV risk behaviours. They found that the experience of IPV was strongly associated with the number of partners in the previous year and time of last sex, and childhood sexual abuse increased the likelihood of having more past year partners.

One study from Ukraine indicated that physical violence perpetrated by a sexual partner was associated with risky sexual behaviours and increased risk of STI and might constitute a barrier in prevention of HIV/STI transmission (Dude, 2007). In Bangladesh, Salam, Alim and Noguchi (2006) made a study of slum women and concluded that abused women suffered from reproductive tract infections significantly more than non-abused women.

Kishor and Johnson (2009), analyzing the data of DHS from the countries of Liberia, Kenya, Zambia, India, Haiti and Dominican Republic found that the percentage of women who report an STD symptom was significantly higher in all the countries among women who had experienced spousal physical or sexual violence than women who had not. Controlling for women's own and household's characteristics, women's own risk taking behaviours, husband's characteristics, husband's STD/STI symptom status and higher risk behavior variables, the odd ratios for women reporting an STD/STI symptom if they experienced spousal IPV, were above 2.00 for four countries, 1.84 for Haiti and 1.36 for Liberia; and the association remained strongly significant in all countries except Kenya where it was marginally significant. In most of the countries sexual violence alone or in combination with physical violence was most closely associated with the risk of women having a STI. This study also established that high risk taking sexual behaviours partly explain the positive STI-IPV association.

A recent article (Jewkes et al., 2010) shows that women in South Africa who have experienced physical or sexual IPV or who are in relationship with low equality are at greater risk of HIV infections compared to women who do not experience these situations. It also says that nearly one in seven new HIV infections could have been prevented if women were not subjected to physical or sexual abuse and if a similar proportion of women did not experience very unequal power in their relationships.

In India, on the basis of a community based study of 1563 women aged 18-50 in Northern Goa, India, it was found that controlling for age, literacy and household per capita income, spousal sexual violence (both lifetime and recent) significantly increased the risk of STI (Chowdhary and Patel, 2008). Another survey framed in the context of Goa by Weiss (2008) revealed that among 2180 women, the incident of STI was highest among those who were married and exposed to sexual violence. Data from North India suggests that abusive men may be more likely to expose their wives to infection. Abusive men were significantly more likely to have engaged in extramarital sex and to have STI symptoms than were non-abusive men (Martin et al., 1999).

Using the data from NFHS-2, Sudha, Morrison and Zhu (2007) examined factors associated with women's self-reports of reproductive ill health symptoms in Kerala and after accounting for confounding variables, they found that women who had ever experienced physical violence since the age of 15, were significantly more likely (Odds Ratio 1.9) to report reproductive tract infection (RTI) symptoms than those who had not. However, experiencing domestic violence did not play a significant role in seeking treatment once the other factors are controlled. The study of Gupta and Ailawadi (2005) in India demonstrated that sexual abuse in childhood and in adolescent period increased the risky sexual behavior including initiation of sexual intercourse at an early age and having multiple sexual partners. Several women whom they interviewed also reported having repeated vaginal infections and persistent fears of HIV/AIDS.

2.1.3. Intimate partner violence and use of contraception

Abuse limits women's sexual and reproductive autonomy. A large number of women who are victims of domestic violence each year may be especially unlikely to negotiate safer sex practices with their partners due to extreme imbalances of power in their relationships. According to Blanc (2001, pp. 196) "Gender-based power inequalities generally incorporate the belief that men should control women's sexuality and their childbearing capacity. Women's practice of family planning dissipates this control". Therefore, men use violence to establish their control. In fact, numerous studies have shown that women are afraid to raise the issue of contraception for fear that their partners might respond violently (Folch-Lyon et al., 1981; Fort, 1989; Ezeh, 1993; Bawah et al., 1999; Hof and Richters, 1999). Women who have been

physically and sexually abused are much more likely than non abused women to use family planning surreptitiously (Out Look, PATH, 2002; Cripe et al., 2008). Practicing contraception openly in defiance of a partner's wishes can be difficult for women, especially for women who are economically dependent on their partners and for those whose partners can threaten them with taking another wife or violence (Blanc, 2001). In this context it is appropriate to mention the statement made by a girl from Zimbabwe during an interview: "If my boyfriend would refuse me using contraceptives, then I want to refuse having sex with him. However, if I refuse sex, I will be accused of wanting other boys and he will leave me. I will feel powerless because I know I will be in no-win situation." (Hof and Richters, 1999, pp. 61). In some cultures, husbands may react negatively because they think that protection against pregnancy would encourage infidelity of the wives (Heise et al., 1999, 2002).

Analyzing the data from Rakai surveillance project in rural Uganda, Koenig et al. (2004) noted that after covariates adjustment, compared to young women who did not report coerced first intercourse, those who did, had significantly reduced odds of current contraceptive use (odds ratio, 0.5), condom use during the last intercourse (odds ratio 0.3) and consistent condom use in the past six months (odds ratio 0.2). Diop-Sidibe, Campbell and Becker (2006) based on a nationally representative sample survey in Egypt, found that frequency of wife beating was significantly associated with current contraceptive use. Women beaten three or more times in the past year of the survey were half as likely to be current users of female contraceptive method as those beaten one or two times during the same period. The study by Salam, Alim and Noguchi (2006) in Bangladesh revealed that in the urban slums, abused women were significantly less likely than non-abused women to use contraception.

A population based cross-sectional data from 3587 ever-married Ukrainian women aged 17-44 depicted that women whose sexual partners had physically abused them, whether in recent or distant past, were significantly less likely to use condoms than women who had not been abused, even after controlling both whether the respondents were aware that use of condoms could prevent HIV transmission and for pregnancy intentions. Women who had been physically abused did not differ significantly from women who had not been so, in the use of other family planning methods, indicating that physical abuse might be a barrier to using condom specifically, rather than practicing family planning generally. Interestingly, women who were abused as

children were not significantly different from women who were not in their contraceptive behavior and condom use (Dude, 2007).

Based on Kenyan Demographic and Health survey of 2003, Emenike, Lawoko and Dalal (2008) found that among 4312 sample women aged 15-49, 38 percent experienced physical abuse, 24 percent experienced emotional abuse and 14 percent experienced sexual abuse by an intimate partner. Exposure to physical abuse was more common among women using folkloric and modern family planning methods than among those using traditional methods or not using any method at all ($p < 0.001$). Their analysis also revealed that exposure to emotional or sexual violence was more frequent among women using family planning methods than among peers not using any method ($p < 0.001$).

In contrast to the above studies, a few studies show that partner violence and contraceptive use are positively associated. In their multi-country study based on DHS data, Kishor and Johnson (2004) found that the experience of violence faced by women was associated with higher rates of contraceptive discontinuation. In the Dominican Republic, Haiti, Nicaragua and Zambia, both unmet need and contraceptive use were somewhat higher among women who had experienced violence than those who had not. In Colombia and Peru only contraceptive use but not the unmet need was higher for women who had experienced violence. Part of the reason for this mixed result may be timing, that is, when the violence occurred in relation to contraceptive use. One mechanism for the positive association between violence and contraceptive use would be that women who have experienced violence do not want that her children would meet the same fate and use contraception to avoid birth. However, in Cambodia, Egypt and India, women who had experienced violence had higher unmet need and had similar or lower contraceptive use rates than women who had not experienced violence. The negative association between IPV and contraceptive use may be explained by the fact that women do not adopt contraception for fear of a violent response (Hindin, Kishor and Ansara, 2008). A similar kind of study by Hindin, Kishor and Ansara (2008) revealed that after multivariable adjustment, in seven out of ten developing countries under study, the odds of ever having used a modern contraceptive method were significantly higher among women who reported physical and sexual violence than among those who did not.

Three studies have been found from India that studied the relationship between domestic violence and contraceptive use. In one study Stephenson, Koenig and Ahmed (2006) tried to examine the association between domestic violence and the subsequent adoption of modern contraception in Uttar Pradesh, India. They found that even after controlling for the range of socioeconomic and demographic factors commonly known to influence contraceptive behavior, a woman who experienced physical violence was 2.1 times less likely to adopt a modern method of contraception than a woman who was not exposed to such violence. In another study Stephenson et al. (2008) noted that after covariate adjustment, women who experienced physical violence were less likely to practice contraception and were more likely to experience an unwanted birth. This demonstrates that a significant reproductive health burden for women is created by an environment of domestic violence. In contrast to these studies, an earlier study by Martin, Kilgallen and Tusi (1999) found that in North India, no consistent significant association existed between husband's report of spousal abuse and current contraceptive use.

2.1.4. Spousal violence and symptoms of gynecologic morbidity

Sexual and physical violence appears to increase women's risk for many common gynecological disorders, some of which can be debilitating. An example is chronic pelvic pain, which in many countries accounts for as many as 10 percent of all gynecological visits and one quarter of all hysterectomies (Walker et al., 1992; Heise et al., 1999). Studies have shown that women suffering from chronic pelvic pain are consistently more likely to have a history of childhood sexual abuse (Walker et al., 1992) or sexual assaults (Rapkin et al, 1990; Jamieson and Steege, 1997; Collett et al., 1998), or physical and sexual abuse by their partners (Schei and Bakketeig, 1989, Salam, Alim and Noguchi. 2006). Past trauma may lead to chronic pelvic pain via unidentified injuries, by stress or by somatization – the expression of psychological distress through physical symptoms. Other gynecological disorders associated with sexual violence include irregular vaginal bleeding, vaginal discharge, painful menstruation, pelvic inflammatory disease and sexual dysfunction (Schei and Bakketeig, 1989; Byrne, 1984, cited in Heise et al. 2002).

Salam, Alim and Noguchi (2006) based on the data of 496 women from metropolitan slums of Bangladesh noted that women who experienced spousal violence, suffered from gynecological problems at the time of pregnancy significantly more than non-abused women. In

another study, based on telephonic survey of women aged 18 to 49 in the USA, Pilchta and Abraham (1996) tried to find out the relation between violence and gynecologic health of women. In logistic regression model controlling for relevant explanatory factors they found that violence events remained significantly associated with severe menstrual problem.

In India, Stephenson et al. (2006) using the data from a large representative population based survey from Uttar Pradesh examined the relationship between gynecologic morbidity and violence by men against their female partners. Their analysis showed that after controlling for a number of demographic, social, economic and partnership factors, compared to women whose husbands reported no violence, women whose husbands reported sexual violence only and those whose husbands reported both physical and sexual violence had higher odds of reporting symptoms of gynecologic morbidity (odds ratios, 1.4 and 1.7 respectively). They also found that women who reported that they had been sterilized or were using an intra-uterine device (IUD) were 1.5 times more likely to report gynecologic morbidity than were women who used no method or who used a traditional method of family planning. This finding was also supported by the study of Bhatia and Cleland (1995). Another study from Goa (Chowdhary and Patel, 2008) found that lifetime exposure to any type of violence was associated with increased risk of a range of self-reported gynecological complaints. According to the study both lifetime and recent violence were independently associated with dyspareunia. However, the findings show that dysmenorrhea was associated with lifetime sexual violence only. Also, verbal and sexual violence were found to be associated with non-menstrual lower abdominal pain and abnormal vaginal discharge.

2.1.5. Partner violence, antenatal care and adverse pregnancy outcomes

Around the world as many as one woman in every four is physically or sexually abused during pregnancy, usually by her partners (Heise et al., 1999 and 2002). Violence before and during pregnancy can have serious health consequences for women and their children. One of the relatively consistent empirical findings in research studies on pregnancy related violence is the delay of prenatal care among victims of violence (Taggart and Mattson, 1996; Dietz et al., 1997; McFarlane et al., 1992; Gazmararian et al., 1995; Parker et al., 1993; Goodwin et al., 2000; Diop- Sidibe, Campbell and Becker, 2006; Hindin et al., 2008; Nunes et al., 2010).

Analyzing the information of 691 pregnant teenager and adult women, Parker et al (1993) noted that only 9 percent of the non-abused against 24 percent of abused teenagers began prenatal care in their third trimester. From a survey conducted in the USA, Dietz et al. (1997) found that among 27,836 sample women who experienced physical violence were 1.8 times more likely to have delayed entry into prenatal care than women who had not experienced such violence. However, when stratifying by selected maternal characteristics, this association was found significant only for women aged 25 years or higher and of higher socioeconomic status. The study of McFarlane et al. (1992) presented similar findings that abused women were twice as likely to begin prenatal care in their third trimester. In another study White American, Hispanic, and African American women were surveyed in public health and low-income clinics in Los Angeles, California, and Seattle, Washington, to determine if they delayed seeking prenatal care because of battering during their pregnancies. Although the incidence of abuse was not significantly different among the ethnic groups, battered women sought prenatal care 6.5 weeks later than their non abused counterpart, with a similar delay in each ethnic group (Taggart and Mattson, 1996). Late entry to prenatal care may act as a risk factor for low birth weight babies and premature labour (Jasinski, 2004; Bullock and McFarlane, 1989), leading contributors to infant and child deaths (monemi et al., 2003).

Diop-Sidibe et al. (2006) analyzing the 1995 DHS data from Egypt found that adjusting for relevant explanatory variables, ever-beaten pregnant women were significantly less likely to have seen a health professional than the non abused group. According to them the controlling behavior experienced by more ever-beaten women in terms of not having freedom to go to a doctor unaccompanied, might have contributed to the fewer antenatal care visits.

As against the above findings, the report 'Profiling Domestic Violence' demonstrated that among nine developing countries under study, only in two countries the experience of violence has a negative effect on the likelihood of receiving ANC (Kishor and Johnson, 2004). Hindin, Kishor and Ansara (2008) have analyzed the data from 10 developing countries and found that controlling for relevant socioeconomic and demographic variables, only in the Dominican Republic and Zambia, women were significantly less likely to have received timely ANC from a health professional if they experienced IPV, than if they did not; and only in Rwanda women

were less likely to have had an institutional delivery if they experienced violence, than if they did not.

Several studies have focused on the relationship between violence in pregnancy and low birth weight (Bullock and McFarlane, 1989; Parker et al., 1994; Valdez-Santiago and Sanin-Aguirre, 1996; Campbell et al., 1999; Murphy et al, 2001; Nunes et al., 2010). Based on a survey conducted in a Mexican hospital, Valdez-Santiago and Sanin-Aguirre (1996) noted that women who suffered violence during pregnancy had three times more complications during delivery and four times greater risk of having low birth weight (LBW) babies than the non-battered women. Bullock and McFarlane (1989) in their study of 589 American women found that the percentage of battered women who gave birth to LBW infants was nearly twice that of non battered women. When divided into public and private hospitals based delivery, private patients who had been battered were four times more likely than non-battered private patients to give birth to LBW infants. In another hospital centered study, out of 100 patients who were victims of domestic violence, 16 percent had LBW babies compared to 6 percent of the 389 patients who were not domestic violence victims (Fernandez & Krueger (1999).

Nunes et al. (2010) made a prospective cohort study of 652 pregnant women attending primary care clinics in Southern Brazil. In their study adjusting simultaneously for family income, adequate number of prenatal visits, length of pregnancy and gestational weight gain, women suffering from psychological and physical violence during pregnancy presented increased risk of delivering a LBW baby. They opined that occurrence of violence during pregnancy was associated with poor adherence to prenatal care and insufficient pregnancy weight gain leading to LBW. The association between violence and low birth weight can also be explained by unhealthy behaviour of the mothers (substance use) or premature labour caused by trauma (Campbell, 2002; Jasinski, 2004). In one empirical study of 2092 prenatal patients in North Carolina, Martin et al. (1999) noted that during pregnancy, victims were more likely to smoke, drink and use drugs.

Violence has been linked with increased risk of miscarriages and abortions (Evins and Chescheir, 1996; Bourassac and Berube, 2007; Amaro et al., 1990; Jacoby et al., 1999), preterm labor (Berenson et al., 1994) and delivery complications (Santiago and Sanin-Aguirre, 1996). In addition other maternal health issues such as severe depression (Horrigan et al., 2000), kidney

infections (Cokkinides et al., 1999), poor weight gain and anaemia (Parker et al., 1994) all have been associated with violence victimization. Some researchers have also focused on interval between pregnancies, finding that victims of abuse suffer from rapid repeat pregnancies which are detrimental for the health of both the mother and the newborn baby (Parker et al., 1994). Physical violence such as a blow to the abdomen may cause direct injury to the unborn baby (Moore, 1999).

The study by Jacoby and associates (1999) of 100 women receiving prenatal care showed that women who experienced any form of abuse were significantly more likely to miscarry. In addition they found an association between current abuse and at least one spontaneous abortion in the obstetric history of the women and concluded that these women might have been experiencing violence and pregnancy loss over a long period of time. Berenson and associates (1994) found that assaulted women were almost twice as likely to experience preterm labour as those who were not assaulted. One hospital-based study from Iran (Faramarzi M., Esmaelzadeh S. and Mosavi S., 2005) revealed that compared with the women who did not report physical, sexual or emotional violence, women who did, were more likely to deliver by cesarean and to have abnormal progress of labor, premature rupture of membranes, low birth weight and preterm birth.

In contrast to the above studies, there are few empirical works that did not find any relationship between violence and low birth weight infants (Amaro et al., 1990; Berenson et al., 1994; Cokkinides et al., 1999) and between violence and cesarean babies or fetal distress/fetal death (Berenson et al., 1994). Using the South Carolina PRAMS data of 6143 women who delivered live births between 1993 and 1995, Cokkinides et al. (1999) found that after adjustments for maternal age, poverty, involvement in prenatal care, and maternal smoking during pregnancy, no significant association existed between violence during pregnancy and low birth weight or prematurity. However, they found a significant association between physical violence during pregnancy and cesarean delivery. Another study by Amaro et al. (1990) showed that once confounders were controlled, the association of violence to birth outcomes, while generally in the expected direction, was weak. Some researchers have suggested that confounding variables such as low socio-economic status and poor nutrition sometimes made it difficult to isolate the effect of battering on birth weight (Bullock and McFarlane, 1989).

Differences in sample design and sample size and the variation in the definition of low birth weight also account for differences across the studies.

2.1.6. Death and other physical consequences of abuse

Violence is a major cause of injury to women, ranging from minor cuts and bruises to permanent disability and death. The consequences of injuries can be moderate to severe. For example, in Canada based on a nationally representative sample survey it was found that 43% of women injured by their partners had to receive medical care and 50% of those injured had to take leave from work (Rodgers, 1994). Salam, Alim and Noguchi (2006) analyzing the information collected from slums of Bangladesh found that more than three-quarters of physically abused women suffered injuries as a result of violence. About 50 percent of these injuries were minor and about 10 percent serious. In most extreme form violence kills women. Worldwide, an estimated 40% to over 70% of homicides of women are committed by intimate partners often in the context of an abusive relationship (Heise et al., 1999). Between 1992 and 1994 in North Carolina, the most common cause of maternal death was injury (37%) and homicide was the most common cause (35.5%) of injury-related death (Harper and Parsons, 1997).

On the Indian subcontinent, violence may be responsible for a sizeable but under-recognized proportion of pregnancy-related deaths (Heise et al., 1999). In rural Bangladesh homicide and suicide, motivated by dowry-related problems or the stigma of rape and/or pregnancy outside marriage, accounted for 6% of all maternal deaths between 1976 and 1986 and 31% of maternal deaths among women aged 15 to 19 (Fauveau and Blanchet, 1989). In a recent study from Bangladesh, Ahmed et al. (2004) found in Matlab, between 1982 and 1998, more than half of the violent deaths of women in reproductive age (15-44 years) could be attributed to tensions in the household, ill treatment, quarrels and torture. Ill treatment and oppression by husbands contributed to about 46 percent of the suicide cases.

In India, verbal autopsies from a surveillance study of all maternal deaths in over 400 villages in three districts of Maharashtra revealed that 15.7% of all deaths during pregnancy were due to domestic violence (Ganatra, Coyaji and Rao, 1998).

2.1.7. Domestic violence and mental health of women

The consequences of domestic violence extend far beyond the physical harm inflicted. Because of prevalence, persistence, recurrence and interference with well-being and performance, depression is the single most serious mental health problem for women (Fischbach and Herbert, 1997) and according to studies in Australia, Nicaragua, Pakistan and the United States, women who are abused by their partners suffer more depression, anxiety and phobias than non abused women (Krug et al., 2002).

The study of Bacchus, Mezey and Bewley (2004) in an inner-London hospital found that domestic violence was an important risk factor for the development of depressive symptomatology among the women. In Nicaragua, among women aged 15-49, battered women were six times more likely to experience emotional distress, as measured on an international mental health scale, than other women (Ellsberg et al., 1999).

Many abused women experience post-traumatic stress disorder (PTSD), an acute anxiety disorder that can occur when people go through or witness a traumatic event in which they feel overwhelming helplessness or threat of death or injury. Rape, childhood sexual abuse and domestic violence are among the most common causes of PTSD in women (Fischbach and Herbert, 1997; Heise et al., 1999). Diminishment of worth, intense shame and /or loss of face suffered by mockery or verbal abuse may disproportionately devastate a wife, and preclude her utilization of customary networks and social supports to ameliorate her psychological pain (Fischbach and Herbert, 1997). For some women the burden of abuse is so great that they commit suicide or try to do so. Several researchers have documented that the association between spousal violence, low self esteem and suicidal tendencies is very strong (Abbott et al., 1995; Amaro et al., 1990; Bergman and Brismar, 1991; Carmen et al., 1984; Fischbach and Herbert, 1997; Kaslow et al., 1998). Victims of partner violence are also more likely to abuse alcohol or drugs (Amaro et al., 1990; Kilpatrick et al., 1997; Mccauley et al., 1995; Miller et al., 1993; Moncrieff and Farmer, 1998).

Using the sample of 1243 pregnant women from Boston City hospital, Amaro et al. (1990) found that victims of violence were at greater risk of having a history of depression and attempted suicide, having more current depressive symptoms, reporting less happiness about being pregnant and were more likely to be users of alcohol and drugs than the non-victims. In

another study Mccauley et al. (1995) observed that among women seeking primary care, those who had been abused by their partners in the previous year, were three times more likely than those not recently abused, to be taking large amount of alcohol and four times more likely to be using drugs. While most of these studies were conducted in the developed world, particularly in the USA, there is little information on the intersection between mental health problems of women and domestic violence in developing countries. Only a recent study from India noted that 40 percent of the 9938 women surveyed, reported poor mental health; and spousal physical violence (slap, hit, kick and beat) was revealed as an independent risk factor of poor mental health (Kumar et al, 2005).

2.2. Factors associated with unintended pregnancy, sexually transmitted infections of women and utilization of antenatal care

Among the various reproductive health problems associated with domestic violence the present study is dealing with unintended pregnancy, sexually transmitted infection and utilization of antenatal care. They are important because they have far-reaching impact on individuals, family and society. Besides domestic violence, various factors influence these three reproductive health issues.

2.2.1. Factors affecting unintended pregnancies

Mistimed or unwanted pregnancies are together called unintended pregnancies which are indicators of imperfect control over the reproductive processes. They are regarded as risk factor for abortion and maternal mortality and considered to pose social and economic problems (Marston and Cleland, 2003). According to Adetunji (2001), important determinants of mistimed and unwanted fertility are: maternal age, number of children, preceding birth intervals and economic status. Jaeni, McDonald and Utomo (2009) analyzing the 2007 Indonesian DHS data, found that for mistimed childbearing, the most significant determinants were preceding birth interval, age of mother, educational attainment, and number of previous births or parity. For unwanted childbearing, the most significant determinants were number of previous births or parity, age of mother, preceding birth interval, and region of residence.

Several studies depicted that age of the women was significantly associated with unintended pregnancy. Based on data from DHS conducted in 10 countries (Ghana, Kenya, Senegal and Zimbabwe in Sub-Saharan Africa; Egypt, and Morocco in North Africa; Indonesia in Asia and Colombia, the Dominican Republic and Peru in Latin America and the Caribbean) Adetunji (1998) noted that the rate of mistimed child bearing tended to be high at younger ages, and it to decrease as a woman's age increased. The trend is reversed for unwanted child bearing. In one study a U-shaped relationship between unintended pregnancy and maternal age is depicted (Forrest, 1994). Shaheen et al. (2007) based on a sample of 2349 ever married women from Egypt aged 15-49 found that after covariate adjustment, women aged 35 years or older were more likely to report their pregnancy as unintended compare with women aged 18-35 years. Similar finding is depicted by Okonofua et al. (1999) while the opposite result was found in the study of Pallitto and O'Campo (2004). Using the data from 2000 DHS from Colombia, they calculated that for the study women, each additional year above the average age of 28 was significantly associated with a reduction in women's risk of unintended pregnancy. In a recent study at Amazon basin in Ecuador, Goicolea and Sebastian (2010) explored that while the youngest women reported the lowest proportion of unintended pregnancy in the univariate analysis, when adjusting for the number of children, this age group showed the highest risk of experiencing unintended pregnancy.

Substantial amount of literature shows that parity/birth order is significantly associated with unintended pregnancy (Pallitto and O'Campo, 2004; Shaheen et al., 2007; Begum et al., 2010; Eggleston, 1999; Magadi, 2003; Goicolea and Sebastian, 2010. All the studies found that probability of an unwanted birth is particularly high for higher order births. The study of Adetunji (1998) on unintended pregnancy in 10 countries shows that the most important predictor of the odds that a child will be reported as being unwanted at conception is the number of living children a woman has at the time of conception. This variable is highly significant for all countries.

Jaeni, McDonald and Utomo (2007) and Magadi (2003) in their respective studies found that the association between the disability of birth and the preceding birth interval are particularly strong. They noted that a mother whose birth interval was closely spaced (less than three years) were more likely to classify their pregnancy as unintended than their counterpart whose birth interval was not that closely spaced. In the multicountry study, Adetunji (1998)

found that in multivariate analysis that controls for the effects of other demographic variables, for most of the countries, as the length of birth interval increased, women were less likely to describe pregnancies as mistimed.

From various studies it is evident that never-married women were more likely than ever married ones to describe their pregnancies as mistimed or unwanted (Forrest, 1994; Eggleston, 1999; Goicolea and Sebastian, 2010). Based on data on 4534 women from Ecuador, Eggleston (1999) found that among women with unwanted pregnancy, women in union were 71 percent less likely than single women to have considered their most recent pregnancy to be unwanted. In the multi country study by Adetunji (1998) it was depicted that after taking into account the effects of other socioeconomic and demographic variables in multivariate analysis, it was observed that unwanted childbearing was significantly associated with marital status in the Sub-Saharan African countries, the Dominican Republic Indonesia and Morocco. However, the relationship between marital status and mistimed childbearing was significant only in four Sub-Saharan African countries and the Dominican Republic.

Place of residence is an important factor affecting the incidence of unintended pregnancy. In their work, Shaheen et al. (2007) observed that compared to women living in urban governorates, women living in frontier governorates were less likely to report their pregnancy as unintended. The study of Jaeni, McDonald and Utomo (2007) showed that in Indonesia, women who resided in Java-Bali region were about 1.5 times more likely to classify the pregnancy as unintended compared to those women who resided in Outer Java Bali I and Outer Java Bali II regions. They further found that mother who lived in urban areas were 27 percent more likely to classify the pregnancy as unintended compared to those mothers living in rural areas. A study from Ecuador (Eggleston, 1999) also shows that rural women are less likely to face unintended pregnancy than their urban counterpart. However, Magadi (2003) found that in Kenya, rural residence was associated with a higher probability of a mistimed birth than urban residence.

Some studies show that among the socioeconomic factors, education and economic status affect the level of unintended pregnancy. Adetunji (1998) found that the relationship between mother's education and unwanted pregnancies was inverse in Latin America and the Caribbean. This finding is supported by the study of Okonofua et al. (1999). Begum et al. (2010) noted that in their study, women with primary and middle school education were more likely to suffer unintended pregnancy compared to the illiterate women or women with high school level

education. In the study of Magadi (2003), it was found that completed primary education was associated with a higher probability of mistimed births compared to lower educational attainment or secondary level or higher education. Contrary to these findings, Jaeni, McDonald and Utomo (2007) and Pallitto and O'Campo (2004) observed that educational attainment was not statistically significant with unintended pregnancies. Therefore it can be said that education on desirability of birth does not show a straightforward pattern.

The relation between household income or wealth and unwanted pregnancy is a complex one. Eggleston's study in Ecuador (1999) revealed that women living in a high income household were about one third less likely than those living in a middle income household to have experienced either an unwanted or a mistimed pregnancy. However, low income household were also less likely to face unwanted pregnancy than middle income women. In Colombian context it was found that socioeconomic status was an important protective factor against unintended pregnancy only in urban areas (Pallitto and O'Campo, 2004). Jaeni, McDonald and Utomo (2007) analyzing the data of DHS from Indonesia observed that poor mothers were 1.23 times more likely to classify the pregnancy as unintended compared to those rich mothers. The study of Adetunji (1998) demonstrated that the index of household economic status was significantly associated with unwanted childbearing in most countries and women living in household with higher economic status usually had higher odds of unwanted births.

The relationship between use of contraception and unintended was examined in various studies. According to Adetunji (1998) literature from developed countries, where use of contraceptives is high, shows that nonuse and ineffective use of contraception are a precursor to a large majority of unintended pregnancies. For example, Westoff (1988) in his analysis of unintended pregnancy in America stated that Americans used contraceptives less regularly, and when they used them, they generally used less effective methods. On the other hand several studies from developing countries show that women who use/ know the modern contraceptives are more likely to report they had an unintended pregnancy than their counterparts (Okonofua et al., 1999; Eggleston, 1999; Magadi, 2003; Jaeni, McDonald and Utomo, 2007; Shaheen et al., 2007; Begum et al., 2010). Among the literature reviewed from developing countries, only one study found that current contraceptive use was a protective factor against unintended pregnancy (Pallitto and O'Campo, 2004). The findings from these studies suggest that in developing

countries, contraceptive failure rather than nonuse is an important predictor of unintended pregnancies.

The study of Stephenson et al. (2008) in four states of India showed that women who reported greater decision making power in their marital relationship were less likely to experience unwanted pregnancy. On the contrary, Pallitto and O'Campo (2005) in their multilevel analysis found that in Colombia, living in a municipality in which women had higher autonomy or status increased one's odds of having an unintended pregnancy. Their analysis also depicted that living in a municipality in which men exhibit high level of controlling behaviour was significantly associated with unintended pregnancy.

Analyzing the data from NFHS-2, Begum et al. (2010) observed that after controlling for other confounding factors, working women were 19 percent less likely to report unintended pregnancies than non-working women. They also found that compared to the non-Hindu women, Hindu women were more likely to experience unwanted pregnancies.

In the context of America, Westoff (1988) tried to explain unintended pregnancy and stated that the United States had enormous ethnic diversity. In the urban areas there was concentration of single parent households, disproportionately of the Blacks and Hispanics. They were mostly poor, alienated from middle class values, uneducated or poorly educated, engaged in low grade job. All these encourage various forms of risk-taking. One form of risk-taking might be unprotected intercourse, which could lead to unintentional pregnancy and out-of-wedlock childbearing. He also asserted that religious belief leading to non-use of contraception was another cause behind the higher unintended pregnancy in America than in other western countries.

In a study in Egypt Shaheen et al. (2007) noted that after covariate adjustment, women who did not know about their ovulatory cycle and who had achieved more than their ideal family size, had higher likelihood of unintended pregnancy than their counterparts. Though the bivariate analysis showed that previous termination of pregnancy was significantly associated with increased probability of unintended pregnancy, in multivariate analysis the relationship was found insignificant.

Jaeni, McDonald and Utomo (2007) in their study in Indonesia, found that mothers who disagreed with husbands about their family size were 30 percent more likely to report their

pregnancy as unintended compared to the women who agreed with their husbands about family size.

2.2.2. Factors affecting sexually transmitted diseases/infections of women

The spread of sexually transmitted diseases (STD) has been called a “hidden pandemic” because these infections are becoming increasingly pervasive without receiving a corresponding increase in public attention (Eng and Butler, 1997 cited in Johnson and Hellerstedt, 2002). STDs comprise a significant public health threat particularly to women with the high prevalence of these infections and their potentially serious health consequences and sequelae, for example, pelvic inflammatory disease, cancer of genital tract, infertility, preterm delivery and other neonatal complications (Moore, 1999; Johnson and Hellerstedt, 2002). Various factors are associated with STIs among women.

Analyzing the DHS data from six developing countries (Haiti, the Dominican Republic, India, Liberia, Kenya and Zambia) Kishor (2009) found that only in two countries age at first sex of women were significantly associated with women’s recent STD/ STI status. While in Zambia this association was found negative, in Liberia it showed a positive association. Based on the data of 3587 ever-married Ukrainian women aged 17-44 years Dude (2007) found a negative association between age at first sex and lifetime risk of STI. She concluded that the longer a woman has been having sex, the more likely she is to have acquired an STI.

A community based cross sectional study of RTIs among 451 married women aged 16-22 years from Tamil Nadu, India was conducted by Prasad et al. (2005). They found that according to laboratory report, 38 percent had Reproductive Tract Infections (RTIs) and 15 percent had Sexually Transmitted Infections (STIs). Their analysis shows elevated odds of having STIs among women married five years or longer than their counterparts. From the focus group discussion and informant interviews they identified that extramarital sexual relationship was common in that community which might explain their finding. Another reason recognized by them indicates that couples married longer would have more exposure time to the risk of contracting STIs.

In her multi-country study, Kishor (2009) found that no significant relation exists between multiple sexual partner of husband and wife’s likelihood of reporting an STD/STI symptom. However in four out of six countries, the odds of women having an STD/STI symptom are much higher if they have sex partners other than husband. One study from Africa (Jewkes,

2006) also depicted that after adjusting for age, HIV infection was associated with having three or more past year partners. However, Kishor's study revealed that in two countries (India and Kenya) the odds of a woman having an STD/STI symptom were lower if her husband had other wife.

One study conducted in Matlab, Bangladesh, depicted that among women there was an increased risk of having a current treatable STIs if they had been married more than once (Hawkes et al., 2002). The study by Kishor (2009) also depicted that compared with couples where neither husband nor wife had been married more than once, women had higher odds of having an STD/STI symptom if the wife had been married more than once or if both husband and wife had been married more than once.

Johnson and Hellerstedt (2002) based on the data of collected from 744 women who receive care at an urban prenatal clinic, USA found that 30 percent of women had a history of STD and 18 percent had a current STD infection. After covariate adjustment, they noted that those younger than 18 years and single women had significantly elevated odds of having an STD history. Kishor (2009) found that the relationship between women's age and their experience of an STD/STI symptom was not significant in most of the countries. However, in India and Liberia women of lower age group were significantly more likely to report STD/STI symptom than women in age group 40-49 years.

Dude (2007) in her study conducted in Ukraine, found that those who had children were significantly more likely to report an STI than who had no child. The opposite was true for Zambia (Kishor, 2009).

The study of Martin et al. (1999) based on a sample of 774 prenatal patients of a health department in North Carolina, revealed that African-American women were more likely to report having experienced one or more STDs than other women. Johnson and Hellerstedt (2002) in their study found that Black women had significantly higher odds of having an STD than the White women.

The study of Prasad et al. (2005) in Tamil Nadu revealed that women with a higher level of education had lower odds of having an STI, although the finding was only marginally significant. Opposite result is found in the study of Dude (2007) where increased education was associated with increased STI reports. She concluded that it was not possible to determine whether the finding has reflected a higher prevalence of STIs among more educated people or an

increased awareness of STIs resulted in a greater likelihood of recognizing problem and obtaining a diagnosis. Kishor (2009) found that although wife's education was significantly associated with the likelihood of women having an STD/STI symptom in all countries, the relationship was negative in Haiti and India. In the Dominican Republic and Liberia, it was non-linear with the likelihood being highest for women with only primary education. In Kenya and Zambia, it was women with secondary or higher education who had the highest odds of having an STD/STI symptom.

In their study in Tamil Nadu, Prasad et al. (2005) noted that occupation was a significant risk factor in STI risk. Women who were agricultural labourers had elevated odds of STIs compared with those who worked solely at home. From the focus group discussion and key informant data they recognized that sexual activity was common among workers in agricultural fields and it might be coercive or consensual by nature.

In the study of Kishor (2009), wealth was significantly associated with women's risk of STD/STI in only two of six countries under study. In India, compared with women in the lowest wealth quintile, women in other quintiles had higher odds of having an STD/STI symptom. In case of Liberia, however, the opposite was true. Women in top three quintiles had higher odds of having an STD/STI symptom than women in the lowest wealth quintile.

One study from North Carolina showed that women who were moderate drinker, were more likely than the non drinkers to report having experienced an STD. Also women who used illicit drugs were more likely to report having experienced an STD than the non-drug-using women (Martin et al., 1999). Kishor (2009) found that husband's drinking of alcohol significantly increased the likelihood of a woman having an STD/STI symptom in Zambia, but lowered it in India. Women's alcohol consumption was significantly associated with STI in two countries, the Dominican Republic and Kenya and the association was positive in both.

Prasad et al. (2005) in their study in Tamil Nadu found that the risk of STIs was marginally elevated among women who had had a tubal ligation, a group, according to qualitative data that were more likely to have extramarital relationship. Several studies found that use of IUD and tubectomy are positively associated with women's risk of RTIs (Wasserheit et al., 1989; Stephenson; Bhatia and Cleland, 1995; Koenig and Ahmed, 2006).

2.2.3. Factors affecting antenatal care

Antenatal care is an important factor in preventing maternal and infant mortality and reducing adverse pregnancy outcomes. Literature from various parts of the world shows that socio-demographic factor, affordability, accessibility, affordability, women's position in the household and society and women's knowledge, belief and attitudes are the factors affecting the utilization of antenatal care.

Women's education is perhaps the best predictor of ANC visits (Ribeiro et al., 2009; Ye et al., 2010; Tewodros, Mariam and Yohannes, 2009; Paanday et al., 2004; Ciceklioglu et al., 2005; Cindoglu and Sirkeci, 2001; Pallikadavath, Foss and Stones, 2004; Gleit, Goldman and Rodriguez, 2003). Analyzing the data from the first National Family Health Survey (NFHS-1) conducted in India, Navaneetham and Dharmalingam (2002) found that women's education was an important predictor of receiving ANC in the state of Karnataka, but not in Andhra Pradesh. Women with high school education and above were 11 times more likely to use ANC compared to illiterate women in Karnataka. They also found that women with better education are more likely to receive the recommended number of ANC visits and more likely to start ANC visits early than less educated women. However, one study from Pakistan found no association between education and utilization of ANC (Nisar and White, 2003).

Few studies also show that use of ANC is increased with the increase in educational level of husband. Husband's educational level is found as a stronger predictor than woman's education in Philippines (Miles-Doan and Brewster, 1998). The study of Navaneetham and Dharmalingam (2002) revealed that women whose husbands had at least high school level education were 4 times more likely to receive ANC check-up relative to women whose husbands had no education.

Parity has a strong association with ANC utilization. Several studies have identified that an inverse relationship exists between parity and ANC utilization (Ciceklioglu, Soyer and Asli Ocek, 2005; Magadi, Madise and Rodrigues, 2000; Paredes et al., 2005). Analyzing the data from the 1993 Kenya Demographic and Health Survey (KDHS), Magadi, Madise and Rodrigues (2000) found that women with higher parity, those who desired large families and those who started childbearing in their teens were less likely to seek ANC services than their counter parts. Low and her colleagues (2005) in a study from South Auckland noted that late entry ANC was significantly associated with high parity. Riberio et al. (2009) found in north-east Brazil two or

more previous deliveries were associated with inadequate prenatal care. Another study from Turkey shows that as the number of pregnancies rises, the number of prenatal care visits decreases (Cindoglu and Sirkeci, 2001). According to Ciceklioglu, Soyer and Asli Ocek (2005), women with low parity are more cautious about their pregnancies, where as their multiparous counterparts may tend to believe that modern health care is unnecessary owing to accumulated experience from previous pregnancies and births. Birth order is significantly associated with ANC visits. Pandey et al. (2004) Analyzing the data from NFHS-2 for the states of Chhattisgarh, Jharkhand and Uttaranchal found that a woman with higher birth order was 0.37 times less likely to go for ANC check up than a woman with lower birth order. In South India, for birth order 4 and above, the probability of a woman receiving ANC is reduced by 60 percent in Karnataka and by 65 percent in Andhra Pradesh compared to first order births. Also higher birth order is associated with inadequate ANC and late entry into antenatal care (Navaneetham and Dharmalingam, 2002). One study found that births occurring after an interval of more than three years received more frequent ANC visits than those where the preceding birth was within two years (Magadi, Madise and Rodrigues, 2000)

Several studies have shown that maternal age is significantly associated with ANC utilization. Riberio et al. (2009) in their study at Aracaju, Brazil, found that women who were below 18 years and 18-34 years of age were less likely to receive adequate ANC than the women above 35 years of age. On the other hand Ciceklioglu, Soyer and Asli Ocek (2005) found in Turkey, women in age group 19-34 were more likely to receive frequent ANC than women below age 18 and above 35 years. Similar finding was depicted by Bhattia and Cleland (1995).

Ethnicity, caste and tribe play a significant role in ANC utilization. Navaneetham and Dharmalingam (2002) in their study from South India found that while religion was not important at all in Kerala, Muslim women in Karnataka and Christian in Tamil Nadu were less likely to receive adequate ANC than their Hindu counterparts. In their study they found that caste was not critical for receiving adequate ANC but both caste and religion were significant for the timing of first ANC visit. Scheduled caste (SC) and scheduled tribe (ST) women were less likely to have had ANC in the first trimester than the non SC/ST women. Muslim and Christian women were more likely in Kerala to have had an ANC check up in the first trimester than their Hindu counterparts. Low et al. (2005) in their study in New Zealand among various ethnic groups, Cook Island Maori ethnicity was significantly associated with late initiation of ANC. In contrast

the work of Cindoglu and Sirkeci (2001) revealed that in Turkey, woman's ethnic background was not decisive in determining her behaviour in the utilization of prenatal care.

One study by Ciceklioglu, Soyer and Asli Ocek (2005) revealed that abortion history was associated with increased utilization of ANC services. Navaneetham and Dharmalingam (2002) in their study found that having had an abortion increased the likelihood of obtaining antenatal care in Karnataka. Also, it increased the odds of utilizing ANC in the first trimester in Andhra Pradesh and Karnataka, but not in Tamil Nadu and Kerala. Single mothers are less likely to use adequate ANC services (Ribeiro et al., 2009).

From their analysis of 1365 mothers, Low et al. (2005) came to the conclusion that in New Zealand, those who were not being employed before pregnancy were less likely to use ANC adequately than their counterpart. Navaneetham and Dharmalingam's study (2002) shows that women who were working but not earning in Andhra Pradesh, were about 40 percent less likely to use ANC services than those working and earning. But no such difference was found in Karnataka. However, it was found that non working women were more likely to go for ANC visit in both Andhra Pradesh and Karnataka compared to the earning women. The study of Ciceklioglu, Soyer and Asli Ocek (2005) highlighted that husband's joblessness was associated with an increased risk of inadequate ANC services.

In the study of Riberio et al. (2009), lower income was found to be associated with higher inadequate prenatal service uptake. Similar finding was depicted by other studies (Pandey et al., 2004; Ye et al., 2010). However, Cindoglu and Sirkeci (2001) noted that in Turkey, the number of prenatal care visits of women had decreased with their increasing welfare status.

Women who have greater exposure to mass media are more likely to have received antenatal check-up (Navaneetham and Dharmalingam's study, 2002). In the study of utilization of ANC and delivery services in three states of India, Pandey and his associates (2004) also found that in all the three states, media exposure significantly increased women's chances of receiving ANC.

Cindoglu and Sirkeci (2001) in their study found that the number of prenatal care visits was higher among women in urban areas than in rural areas. On the other hand, Navaneetham and Dharmalingam (2002) did not find any rural-urban difference in receiving adequate ANC in four southern states in India.

Availability of health care services has an impact on the utilization. In Kenya, women who lived near a village health worker/nurse were more likely to receive adequate and early ANC visits than women without a village health worker (Magadi, Madise and Rodrigues , 2000). Long waiting time act as a barrier to ANC use (Chowdhury, Mahbub and Chowdhury, 2003 in Simkhada et al., 2007).

ANC use is also influenced by accessibility of the services. An increase in distance or travel time to the nearest healthcare facilities is associated with fewer antenatal visits (Glei, Goldman and Rodriguez, 2003; Magadi, Madise and Rodrigues, 2000; Tewodors, Mariam and Yohannes, 2009; Ye et al., 2010). Analyzing the data collected from 310 pregnant women in an antenatal care centre in Laos, Ye and his associates (2010) revealed that, higher cost of transport, higher cost of service and greater distance were associated with decreased utilization of ANC. They also found that, limited knowledge and misconceptions about ANC services were major constraints behind lower ANC use.

Tewodors, Mariam and Yohannes (2009) found that in south western Etheopia, increased utilization of ANC was associated with illness experienced during pregnancy, husband's approval and planned last pregnancy. The work of Ndidi and Oseremen (2010) focused on the fact that in Nigeria, women's late registration for ANC could be partly explained by the fact that antenatal care was viewed there primarily as a curative rather preventive measure. Zaid, Fullerton and Moore (1996), based on the information of 118 Hispanic women tried to identify the common barriers to prenatal care. These were lack of financial means to pay for care, lack of information concerning where to obtain care, inadequate infrastructure of clinic services, sadness and depression. Winston and Oths (2000) based on their study in Alabama, depicts that first time mothers are likely to seek early care and that family and friends play a significant supportive role in encouraging women to begin care.

2.3. Overview of literature

It is well documented in the literature that violence jeopardizes the health and well-being of women and their children and domestic violence is associated with increased risk of unintended pregnancy, sexually transmitted diseases including HIV/ADS, gynecological morbidity, adverse pregnancy outcomes, disability and death of women. It has a native impact on the mental health of women, use of contraception and utilization of antenatal care. On the basis

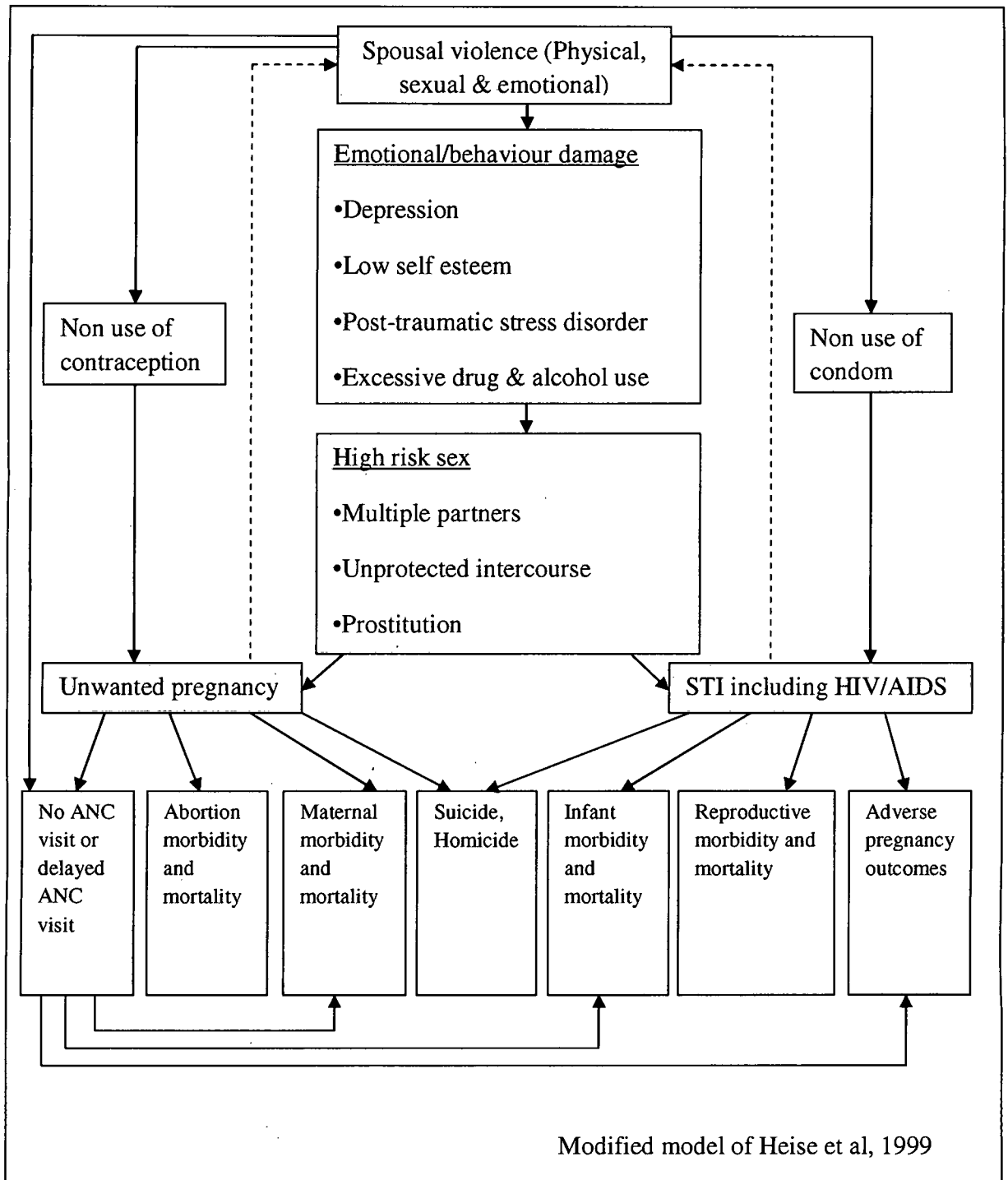
of literature survey it can be said that the mechanism through which spousal violence affects the reproductive health of women is difficult to establish, perhaps due to dearth of data and proper methodology, and therefore, most of the studies have restricted in analyzing if intimate partner violence acts as an independent risk factor of poor or negative reproductive health outcomes of women. However, on the basis of available information a framework (Fig 2.1) showing the possible pathways of how violence affects women's reproductive health, has been constructed.

According to Heise et al (1999) the experience of abuse often erodes women's self esteem and puts them at greater risk of a variety of mental health problems including depression and anxiety, phobias, post-traumatic stress disorder etc. As a result many women exhibit harmful behaviours such as use of drug and alcohol. All these problems can impair a woman's capacity to assess risks. Therefore, abused women are more likely to engage in risky sexual and non-sexual behaviours that may provide them with short term benefits at the expense of serious long-term sexual health consequences (Dude, 2007). Such behaviours include seeking additional sexual partners as a source of emotional fulfillment (Luster and Small, 1997) or engaging in sex work so as to afford alcohol and drugs (Zierler et al., 1991).

Abuse also limits women's sexual and reproductive autonomy (Out Look, 2002). A large number of women are unable to negotiate safer sex practices with their partners due to extreme power imbalances in their relationships. A society where people believe that women's sexuality should be controlled by men and women should place more importance on partner's pleasure during sex rather than their own safety or fertility preferences, women's negotiation for contraception may confront with violent reaction from their partners. Thus women who are forced to have sex or fear to use contraception or condoms because of their partner's violent reaction are directly at an increased risk of unwanted pregnancy or sexually transmitted infections. The history of spousal violence can lead to unwanted pregnancy and STI indirectly by increasing sexual risk taking behaviours. However, there are few studies that reflect that unwanted pregnancies and disclosure of HIV/ AIDS among women act as risk factors of partner violence.

The impact of unwanted pregnancy and STDs on reproductive health of women is enormous. An estimated 21.6 million unsafe abortions – an indicator of unintended pregnancy – took place worldwide in 2008 (almost all in developing countries) and deaths due to unsafe

Figure 2.1: The pathways through which spousal violence affects reproductive health and reproductive health behavior of women



abortion (47,000 in 2008) remain close to 13 percent of all maternal deaths (WHO, 2008). In addition, adverse outcomes of unintended pregnancy include late entry into prenatal care which itself is responsible for adverse pregnancy outcome such as premature labour, foetal distress, low birth weight babies etc. and maternal and perinatal mortality. HIV/AIDS is currently a leading cause of disability and death of women worldwide. Mother to child transmission of HIV is responsible for infant and child deaths. Moreover, STDs are associated with poor birth outcomes, ectopic pregnancy, infertility, cancer of genital tract and other reproductive health problems (Moore, 1999). Besides, the social stigma of unwanted pregnancy outside marriage and HIV/AIDS often leads to homicide or suicide of women and girls.

From the literature review various factors other than violence, can be identified which are associated with unintended pregnancy, utilization of ANC and women's risk to STIs. For unintended pregnancy, significant determinants are number of previous births or parity, age of mother, preceding birth interval, marital status, education, income, use of contraception and region. The most important factors associated with women's experience of STIs are found as age at first sex, multiple sexual partners of women, duration of marriage, income, use of contraceptives by methods and substance use by women and their husbands. From the literature survey, the important factors affecting the utilization of antenatal care are identified as women's education, parity or birth order, age of women, history of abortion, religion and ethnicity, exposure to mass media, income, region, availability and accessibility of maternal health care services and women's perception about the need of ANC.

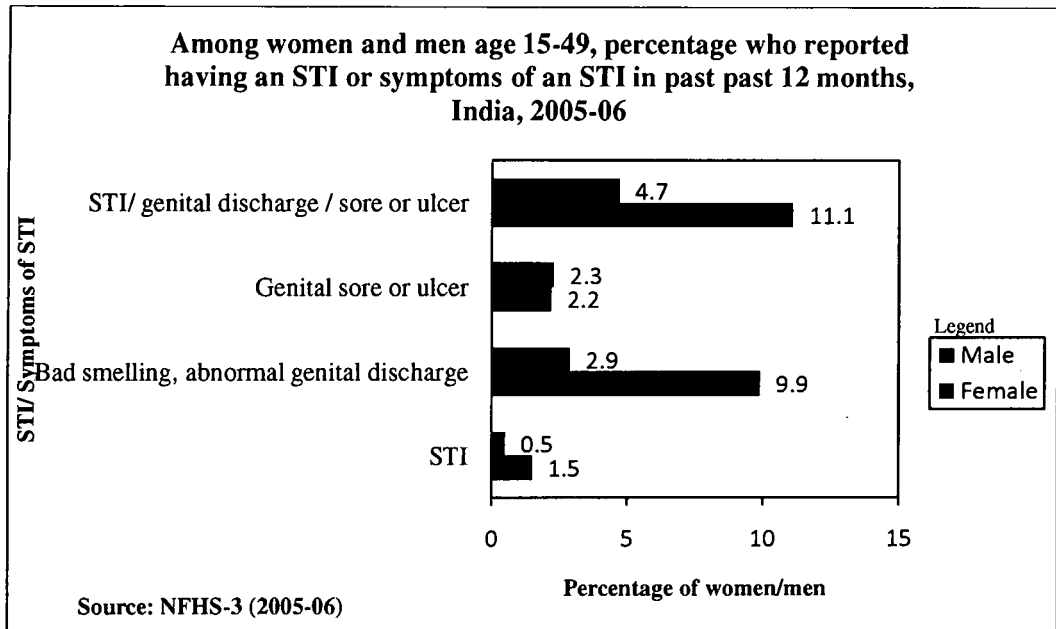
CHAPTER 3

SPOUSAL VIOLENCE AND WOMEN'S RISK OF SEXUALLY TRANSMITTED INFECTIONS

Information about the incidence of sexually transmitted infections (STIs) is not only useful as a marker of unprotected sexual intercourse, but also important as it is a co-factor for HIV transmission (NFHS-3 report, 2005-06). The sexually transmitted diseases (STDs) are a group of communicable diseases (e.g., syphilis, gonorrhoea, chancroid, donovanosis, genital herpes, genital and anal warts, AIDS etc.) that are transmitted predominantly by sexual contact and caused by a wide range of bacterial, viral, protozoal and fungal agents and ectoparasites. Present medical science has confirmed that while co-infection with another STI can increase HIV transmission rate considerably, STIs such as Chlamydia and gonorrhoea can also cause infertility and other reproductive health problems. Therefore the Reproductive and Child Health Programme (RCH) launched in India in 1997, incorporated prevention and management of RTI/STD including AIDS as one of its major components. In view of the importance of STIs in HIV prevention programmes, since the inception of NACP-1, NACO has been making special efforts to promote early diagnosis and treatment of STIs as a part of its family health awareness campaign.

The true incidence of STDs will never be known not only because of inadequate reporting but because of the secrecy that surrounds them. Most of them are not even notifiable (Park, 2009). Reliable data on worldwide incidence are not available. According to the estimation of World Health Organization at least 340 million new cases of STD other than HIV occurred in 1999 (WHO, 2006 in Park, 2009). In India the NFHS-3 report shows that 11.1 percent of women and 4.7 percent of men who have ever had sex had an STI or STI symptom in 12 months preceding the survey. Among women, the self reported prevalence of STIs or STI symptoms is highest in Assam (24.7 percent) and prevalence among men is highest in West Bengal (11.3 percent) (See Appendix 3.1). Although the reported prevalence of any sexually transmitted disease in 12 months preceding the survey is very low among the women (1.5 percent) as well as men (0.5 percent), women are three times as likely as men to report having an STI in the previous 12 months (Figure 3.1).

Figure 3.1



STDs pose a significant public health threat particularly to women with the high prevalence of these infections and their potentially serious health consequences and sequelae, for example, pelvic inflammatory disease, cancer of genital tract, infertility, ectopic pregnancy and poor birth outcomes (Moore, 1999). Treatment of these infections is complicated by the fact that 30 to 50 percent of infected women and a smaller proportion of men are asymptomatic. According to the World Bank study (1993), STDs (excluding HIV infection) rank as the second major cause of disease burden in young adult women in developing countries, accounting for 8.9 percent of the total disease burden in that age group. Among males of the same age group, STDs are not among the first ten causes, and account for only 1.5 percent of the disease burden. Cook, Dickens and Fathalla (2003, pp. 15) have beautifully explained the reason behind it:

“For a mix of biological and social reasons, women are more likely to be infected, are less likely to seek care, are more difficult to diagnose, are at more risk of severe disease sequelae, and are more subject to social discrimination and other consequences. The most effective method available for protection against STDs, the condom, is controlled by men. A simple and effective method for protection, that a woman can use without needing her partner’s cooperation, does not yet exist”.

The prevention of STDs is a long-standing public health goal that has primarily revolved around screening, partner notification, promoting condom use and discouraging high risk sexual behaviours; but these conventional prevention strategies may not be feasible for women who are or have been victims of abuse (Johnson and Hellerstedt, 2002). Previous studies from both developed and developing countries that tried to examine the association between violence and STIs of women, all have found a positive relationship between having a history of abuse and the prevalence of STDs including HIV/AIDS (Plichta and Abraham, 1996; Martin et al., 1999; Maman et al., 2000; Wingood G M, DiClemente R J and Raj A, 2000; Johnson and Hellerstedt, 2002; Dunkle et al., 2004; Kishore and Johnson, 2006; Sudha, Morrison and Zhu, 2006; Weiss, 2008; Chowdhary and Patel, 2008; Kishor, 2009; Solomon et al., 2009). In this chapter an attempt has been made, analyzing the unit level data from the couple's file¹ of NFHS-3, to examine the existing relationship between spousal violence and women's experience of STI or STI symptom in the context of India.²

3.1. Association between married women's experience of STI or STI symptoms and violence by their current husband

NFHS-3 collected the information about women's STI or symptoms of STI experienced in the 12 months preceding the survey. If the woman had a sexually transmitted disease or infection in the past year, is determined on the basis of combination of three questions. The woman is asked (1) during the last 12 months have you had a disease which you got through sexual contact? (2) During the last 12 months have you had a bad smelling abnormal genital discharge? (3) During the last 12 months have you had a genital sore or ulcer? If the woman said yes to one or more of these questions, it is counted as having an STI/STI symptom in the last 12 months. All together 39257 women were asked the questions mentioned above. Of them, 212 women either responded as 'don't know' to all the three questions or identified as missing cases. Thus the remaining 39045 women constitute the sample of our study. Among them, 9.6 percent reported an STI/STI symptom in one year preceding the survey. However, this figure is likely to be affected by gross underreporting due to social stigma attached to it or because of lesser awareness and knowledge of STI/STI symptoms among women. NFHS-3 also collected information from the husbands of these women. Appendix 3.2 presents the description of the couples included in this study.

According to the present analysis, 28.6 percent women faced only physical violence, 1.4 percent faced only sexual violence and 6.2 percent experienced both types of violence at any time in their life by their current husband. Regarding violence in last 12 months, 17.4 percent and 1.9 percent women experienced only physical and only sexual violence respectively, and 3.9 percent reportedly faced both types of violence. In other words, 36.3 percent women had ever experienced either physical or sexual violence, and 23.3 percent experienced either physical or sexual violence in 12 months preceding the survey.

The bivariate analysis shows that in India the association between women's reporting of STI/symptom of STIs and their experience of violence are highly significant. It is apparent from Table 3.1 that among the women who experienced violence in last 12 months, one fourth of them reported an STI or STI symptom. The percentage of women who reported an STI or symptom of STIs is more than three times higher among those who had recently experienced both physical and sexual violence than those who did not experience recent violence. It is important to note

Table 3.1
Among currently married women age 15-49 who faced recent spousal violence
percentage who reported experience of an STI or symptoms of an STI in last
12 months and Pearson's Chi square results

Variables	Sample size (Unweighted)	% women with STD	χ^2	Sig.
Women's lifetime experience of spousal violence				
No	20353	6.8	610.02	.000
Only physical	7946	12.9		
Only sexual	393	12.2		
Both physical and sexual	1706	22.4		
Women's experience of violence in last 12 months by husband				
No	23803	7.7	542.13	.000
Only physical	4976	13.8		
Only sexual	528	17.2		
Both physical and sexual	1091	25.1		

Source: Computed from unit level data of NFHS-3

Note: The percentages are calculated using sample weight

that the percentages of women reported of having an STI/STI symptom are almost similar for those who ever experienced only physical violence and only sexual violence (12.9% and 12.2% respectively) but considering violence in the last 12 months, the percentages of women having STIs/STI symptoms is much higher among those who experienced only sexual violence than who experienced only physical violence (17.2% and 13.8% respectively).

From the above analysis it is clear that spousal violence increases the possibility of sexually transmitted infection of the women. The hypothesis that “women’s self reported STIs/symptoms of STIs in the past year and their experience of physical and sexual violence by their husbands in the past year are positively associated” is also proved from the above analysis. However, there are several other risk factors that may affect women’s exposure to sexually transmitted infections. Considering all those factors we will examine if spousal violence acts as an independent risk factor for women’s experience of STIs. Before that, let us discuss the other risk factors for sexually transmitted infections of the women.

3.2. Important risk factors of sexually transmitted infections of married women

Husband’s STI status in last 12 months preceding the survey– The STI status of husband is determined in the same manner as the STI status of wife. Husbands are also asked one direct question about STI – during the last 12 months have you had a disease which you got through sexual contact? This question is followed by two more questions – during the last 12 months have you had an abnormal discharge from your penis? And during the last 12 months have you had a sore or ulcer on or near your penis? If the answer is yes to one or more of these questions then it is counted as having an STI/STI symptom in the last 12 months. As STI is transmitted through sexual contact, therefore husband’s STI status plays a significant role in wife’s infection.

Number of lifetime sexual partner of women and their husbands – Having multiple sex partners is one of the major risk factor of STIs. In India the occurrence of having multiple sexual partners in one year preceding the survey as reported by husbands and wives are extremely low and therefore the number of lifetime sexual partner of wives and husbands has been taken as a proxy variable. Among the couples, both the partners were asked – in total, with how many different people have you had sexual intercourse in your lifetime? As assumed, very few women

reported that they had/have more than one lifetime sexual partner (1.3%). By contrast men are much more likely to report that they had/have more than one sexual partner (18.8%) in their lifetime.

Women's age at first marriage – Age at first sex is also an important risk factor of STIs. According to Kishor (2009), the lower is the age at first sex, the greater the number of sexual partners. Further, in combination with the current age, age at first sex also proxies the length of exposure to the risk of STIs. As the information on age at first sex is inconsistent and many are missing, the age at first marriage is used as a proxy for it. Moreover in India, sexual relation is sanctioned under the social institution of marriage and therefore it occurs mostly within marital relationship.

Current use of contraceptive method – The use of contraceptives is the most important intermediate variable affecting the fertility of any society. The effective use of condom prevents unwanted pregnancy and the transmission of STIs from husband to wife and vice versa. However, the chances of reproductive morbidity may increase among some women due to utilization of some specific contraceptive methods. Studies show that women who use Copper T and other IUDs are more likely to report symptoms of RTI than those who are not using such devices (Prasad et al., 2005). It should also be noted that couples who have used contraceptive methods are expected to be more aware about the reproductive health issues and sources of reproductive health care than the non-users.

The bivariate analysis (Appendix 3.3) shows that the percentages of women suffering from STIs is higher among those who have/had more than one lifetime sexual partners, married below age 18 years, whose husband also have/had multiple sexual partners and who used the methods of contraception other than condom and sterilization.

3.3. Controlling for the risk factors that increase women's exposure to STIs, the net impact of spousal violence on women's experience of sexually transmitted infections

In the following section with the help of binary logistic regression, we will try to find out the net impact of spousal violence in last 12 months on women's experience of recent STIs, controlling for various risk factors that increase women's exposure to STIs. For multivariate regression analysis, the measurement of the variables included in the analysis is given below:

- **Dependent variable**

Women's STI status in 12 months preceding the survey: dichotomous as

0 – No (Did not have an STI/STI symptom)

1 – Yes (Having had an STI/STI symptom)

- **explanatory variables**

Risk factors of women's exposure to STIs

1. Women's experience of violence in last 12 months by husband³

0 – No

1 – Only physical violence

2 – Only sexual violence

3 – Both physical and sexual violence

1. Husband's STI status in 12 months preceding the survey: dichotomous as

0 – No (Did not have an STI/STI symptom)

1 – Yes (Having had an STI/STI symptom)

2. Number of lifetime sexual partner of women

1 – 1 partner

2 – More than 1 partner

3. Number of lifetime sexual partner of husbands

1 – 1 partner

2 – More than 1 partner

4. Women's age at first marriage

1 – Less than 18 years

2 – 18 years and above

5. Current use of contraceptive method

0 – Not using any method

1 – Condom

2 – Female sterilization

3 – Other methods

Table 3.2 presents two binary logistic regression models⁴ predicting the probability of a woman experiencing recent STIs/STI symptoms. Odds ratios greater than one indicate a positive relationship between the independent variables and the probability of experiencing STIs, and odds ratio less than one indicate a negative relationship.

Model 1 shows that those who have experienced spousal violence in the last 12 months, are significantly more likely to report an STI/STI symptom than those who did not experience violence in the last 12 months. Those who experienced only physical violence and only sexual violence, both are more likely to report experience of STI/STI symptom in the last 12 months than women who were not abused (OR 2.05, $p < .001$ and 2.43, $p < .001$ respectively). However, the chances of experiencing STD or a symptom of STI is highest among the women who were both physically and sexually assaulted by their husband in the last 12 months.

Model 2 shows that after controlling for other risk factors of women's exposure to sexually transmitted infections, spousal violence remains as a significant problem that increases women's probability of experiencing STI/STI symptoms. However, the exponential beta values for different types of violence decline in model 2 than model 1. The decline is marginal for only physical violence, moderate for only sexual violence and very sharp when physical and sexual violence both are considered.

Table 3.2
Logistic regression results for currently married women experiencing
STI/STI symptoms in last 12 months, India, 2005-06 (Model 1 & 2)

Background Characteristic	Odds ratio	Odds ratio
	(Model 1)	(Model 2)
Women's experience of spousal violence in last 12 months		
No ®		
Only physical	2.05***	2.03***
Only sexual	2.43***	2.27***
Both physical and sexual	4.13***	3.85***
Husbands having STI/STI symptoms in last 12 months		
No ®		
Yes		1.48***
No of lifetime sexual partner of women		
1 ®		
More than 1		1.70***
No of lifetime sexual partner of husbands		
1 ®		
More than 1		1.10
Women's age at first marriage (excludes married gauna not performed)		
<18 years ®		
18 years and above		0.77***
Current use of contraceptive method		
Not using any method ®		
Condom		1.53***
Female sterilization		0.94
Other methods		1.43***
N	30398	30042
-2 Log likelihood	17219.23	16907.37
Nagelkerke R square	.033	.043

Source: Computed from unit level data of NFHS-3

Note: *p< .05, **p< .01, ***p< .001; ® = reference category

3.4. Background characteristics of women

Women's background characteristics, like her education or family income etc. are closely associated with her risk of STIs. Therefore, we have added some important demographic and socio-economic characteristics of women in model 2 to get model 3 and then the regional

factor has been added in model 3 to get model 4. Thus we will try to examine, if after demographic, socioeconomic and regional characteristics are adjusted for, spousal violence still exerts a significant impact on women's risk of STI. Now, a brief description of the variables added in model 3 and 4 is given below:

Demographic and fertility related factors

Age of women – Age is an important biological factor affecting reproductive health of women. At different reproductive age group, specific reproductive morbidity exists. In the cultural setting of India, usually the frequency of sexual intercourse among the couples is less in higher age group (35 years and above) than in lower age group. Women's decision making power is also higher at their later age. These two factors may act to lower the chances of STI among the older women.

Experience of termination of pregnancy / pregnancy wastage – In NFHS-3, terminated pregnancy comprise those pregnancies that had miscarried, was aborted or ended in a still birth. Women's experience of pregnancy termination is supposed to be associated with self-reported STIs. A woman who has experienced pregnancy wastage, due to psychological causes, is more likely to report STI/STI symptoms and seek health care than one with no such experience.

Any children born – It is an important psychological factor affecting women's reporting of STIs. Previous studies suggest that women's reporting of unintended pregnancies is significantly associated with the birth of their child (Dude, 2007; Kishor, 2009).

Socioeconomic factors

Women's highest level of education – Education is a powerful tool in enabling one to make informed choices, enhancing self-confidence, raising earning and reducing poverty. Women with better education enjoy more autonomy and have fewer children than the uneducated women. Educated women are able to communicate more effectively about reproductive health issues (e.g., the use of contraception) with their spouse. They are likely to be more aware about reproductive health problems and may identify STIs more easily than women with no education and less awareness.

Religion – Religion in India is a way of life influencing various social institutions and gender attitude in the society. It affects the reproductive health of women through norms related to marriage, fertility and family planning practices. Various religious rituals and prohibitions also influence health and hygiene of women. Therefore, the prevalence of STI many vary among different religious groups.

Caste – In India, the Scheduled Castes (SC) and the Scheduled Tribes (ST) are found to be the most oppressed and backward sections in the society. The socio-economic disadvantages results in their lower access to modern health care facilities and low level of awareness regarding sexual and reproductive health.

Type of place of residence – Due to various socio-cultural reasons, people from rural areas are less aware about the reproductive health problems including sexually transmitted diseases. Besides, the health care facilities in India are mostly concentrated in urban areas. Therefore, rural people have lesser opportunities for the treatment of STIs than their urban counter part.

Current work status of women – Working women are usually more aware about reproductive health problems because they acquire better knowledge regarding such problems through greater contact with outside world than the non-working women. As the working women earn money, they also enjoy more autonomy in decision making that is supposed to have positive influence on their reproductive health and health seeking behaviour.

Wealth index - Wealth is a good proxy of family income. Poverty indeed acts as a great barrier in acquiring information and good education. Women from wealthy family have greater access to health information and health care facility. Therefore, their chance to experience STIs is lower than the women from poor families.

Other factor

Regions in India – India is a vast country with diverse social and cultural settings. For example gender inequality is much more acute in the North than in the South. In the present analysis considering the combined effects of geographical location, cultural setting and socio-economic characteristics India has been divided into five regions – northern, eastern, north-eastern, western and southern. The states of Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Uttaranchal,

Delhi, Rajasthan, Uttar Pradesh and Madhya Pradesh constitute the northern region. Eastern region comprises of Bihar, West Bengal, Orissa, Jharkhand and Chhattisgarh. Eight states constitute the north-eastern region, namely, Sikkim, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura and Arunachal Pradesh. The western region includes Maharashtra, Gujrat and Goa. Finally, the states of Andhra Pradesh, Karnataka, Tamil Nadu and Kerala form the southern region. Health policies and health care facilities vary from state to state.

It is found from the bivariate analysis (Appendix 3.3) that the percentages of women who reported an STI/STI symptom is higher among women in age group 25-35 years, who have experienced pregnancy wastage, have given birth, with no education, belongs to SC/ST category and North-eastern region, currently not working, and coming from Muslim families and poorest wealth quintile.

3.5. Controlling for the background characteristics and risk factors of women's exposure to STIs, the net impact of spousal violence on women's experience of STI/ STI symptoms

In this section we have constructed model 3 and 4. The measurement of the variables included in model 3 and 4 and showing the background characteristics of women are given below:

- **Explanatory variables**
 - Demographic and fertility related variables**
 1. Age of women
 - 1 – 15 to 24 years
 - 2 – 25 to 34 years
 - 3 – 35 to 49 years
 2. Experience of pregnancy wastage
 - 0 – No
 - 1 – Yes
 3. Any children born
 - 0 – No

1 – Yes

Socioeconomic variables

4. Women's level of education

0 – No education

1 – Primary

2 – Secondary and higher

5. Religion

1 – Hindu

2 – Muslims

3 – Others

6. Caste/tribe

1 – Scheduled Caste (SC)/Scheduled tribe (ST)

2 – Other

7. Type of place of residence

1 – Urban

2 – Rural

8. Current work status of women

0 – Not working

1 – Working

9. Wealth Index

1 – Poorest

2 – Poorer

3 – Middle

4 – Richer

5 – Richest

Other factor

1 Regions in India

1 – Northern

2 – Eastern

3 – Northeastern

4 – Western

5 – Southern

Model 3 shows that after various risk factors of STIs and women's demographic and socio-economic characteristics are adjusted for, spousal violence still significantly increases the women's likelihood to experience STIs. However, the odds ratio values for different types of violence decreases in model 3 than model 2. Model 4, which takes into account the regional factor along with other explanatory factors of Model 3, presents the full model. The detailed analysis the relationship between spousal violence and women's risk of STIs from the full model is presented below:

Compared to the women who were not abused in last 12 months, those who were only sexually abused are significantly more likely to report experiencing STIs or symptoms of STI in 12 months preceding the survey (OR 1.67, $p < .001$). Those who experienced only physical violence are also more likely to experience recent STD/STI symptom than those who did not face any violence in the last 12 months (OR 1.99, $p < .001$). The situation is the worst for those who faced both types of violence in the past 12 months and they are three times more likely to report recent STI / STI symptom than those who were not abused in the last 12 months. In fact, appendix 3.4 also shows that compared to women who were never abused by their husbands, those who ever experienced both physical and sexual violence are the most likely to experience STI or symptoms of STI in the 12 months preceding the survey.

Table3.3

Logistic regression results for currently married women experiencing STI/STI symptoms in last 12 months, India, 2005-06 (Model 3 and model 4)

Background Characteristic	Odds ratio	Odds ratio
	(Model 3)	(Model 4)
Women's experience of spousal violence in last 12 months		
No ®		
Only physical	1.90***	1.99***
Only sexual	1.92***	1.67***
Both physical and sexual	3.33***	3.18***
Husbands having STI/STI symptoms in last 12 months		
No ®		
Yes	1.41**	1.25*
No of lifetime sexual partner of women		
1 ®		
More than 1	1.69***	1.54**
No of lifetime sexual partner of husbands		
1 ®		
More than 1	1.07	1.10
Women's age at first marriage (excludes married gauna not performed)		
<18 years ®		
18 years and above	0.93	0.96
Current use of contraceptive method		
Not using any method ®		
Condom	1.76***	1.47***
Female sterilization	1.05	1.33***
Other methods	1.50***	1.39***
Age of women		
15-24 years ®		
25-34 years	1.04	0.99
35-49 years	0.91	0.85*
Experience of pregnancy wastage		
No ®		
Yes	1.57***	1.51***

Contd.

Table 3.3 contd.

Any children born		
No (R)		
Yes	1.00	0.94
Women's highest level of education		
No education ®		
Primary	0.94	1.06
Secondary & above	0.82**	0.98
Religion		
Hindu ®		
Muslim	1.37***	1.37***
Other	0.84*	0.84*
Caste/Tribe		
SC/ST ®		
Other	0.97	1.01
Type of place of residence		
Urban		
Rural	1.15*	1.09
Current work status of women		
Not working ®		
Working	0.92	1.02
Wealth Index		
Poorest ®		
Poorer	0.88	0.93
Middle	0.80**	0.88
Richer	0.73***	0.79**
Richest	0.69***	0.69***
Regions in India		
Northern		
Eastern		0.80**
Northeastern		0.70***
Western		0.50***
Southern ®		0.32***
N	29226	29226
-2Log likelihood	16070.46	15753.49
Nagelkerke R Square	.060	.084

Source: Computed from unit level data of NFHS-3

Note: *p< .05, **p< .01, ***p< .001;

® = reference category

Thus the hypothesis that, “after accounting for higher risk sexual behaviour of women and their husband, and demographic, socioeconomic and regional factors, spousal violence significantly increases women’s chances of reporting recent STIs/ symptoms of STI”, has been proved. This finding is consistent with earlier studies (Martin et al., 1999; Johnson and Hellerstedt, 2002; Dunkle et al., 2004; Sudha, Morrison and Zhu, 2006; Dude, 2007; Kishor, 2009).

3.6. Other findings from logistic regression analyses

The findings presented in this section are mainly based on the final model (Model 4). Let us first consider the impact of the risk factors of women’s exposure to STIs. After covariate adjustment, husband’s recent STI status and the number of lifetime sexual partner of the wife are found to be significantly associated with women’s reporting of STIs/STI symptoms; but surprisingly the number of lifetime sexual partner of husband has no significant association with a wife’s likelihood of reporting sexually transmitted infections. However, Kishor (2009) also found in her study that multiple sexual partners of the husband were not a significant risk factor of wife’s STI. In the final logistic regression model after covariate adjustment, it is found that women’s age at first marriage has no significant association with their recent experience of STIs/STI symptoms. Controlling for other factors, the condom users; the sterilized women and the users of other contraceptive methods have a significantly greater likelihood of reporting a recent STI/STI symptom than currently non users of contraception. As the contraceptive users are likely to be more aware about STIs, therefore, their chances of reporting of STIs can be higher than the non-users of contraceptives. Also the condom users can use it very inconsistently which may lead to the spreading of STI among women. However, it should be mentioned here that the occurrence of STI can also lead to the use of condom but it is difficult to identify the causal relationship.

Among demographic factors, women’s reporting of STIs/STI symptoms is significantly associated with their experience of pregnancy wastage, but no significant association is found between women’s experience of child birth and the reporting of STI. Controlling for other variables, women in age groups 35 - 49 years are significantly less likely to report an STI/STI symptom in recent past than the women of 15-24 years.

Among the socioeconomic variables, it is found that after covariate adjustment, caste/tribe, type of place of residence and the current work status of the women do not have significant impact on women's experience of STIs. According to model 3, compared to a woman with no education, woman with secondary or higher level of education has a significantly lower odd of reporting an STI/STI symptom in recent past. Similar findings were also observed in other studies (Martin et al., 1999; Prasad et al., 2005; Dude, 2007). But when regional factor is added as control, no significant association is found between education and the reporting of STIs/STI symptoms by the women. It indicates that cultural practice, local health facilities, state government's initiatives to prevent STIs, awareness level of people about reproductive health in a region etc. influence the prevalence of STI among women more than their education level. Controlling for other factors, Muslim women are significantly more likely to report a recent STI/STI symptom than Hindu women and women from richer and richest quintile are significantly less likely to experience STIs in last 12 month than the women of the poorest quintile. Sudha, Morrison and Zhu (2007) also found in their study that poor women had a significantly elevated odd of experiencing STIs than the women who were rich. Finally after other variables are adjusted for, women from eastern, northeastern, western and southern part of India are significantly less likely to report recent STI/STI symptoms than women from north India.

In conclusion it can be said that, the present study contributes to the evidence that experience of spousal violence is significantly associated with increased risk of sexually transmitted infections for women. However few studies also show the possibility where STD history may lead to physical violence (Augenbraun, Wilson and Allister, 2001). The present analysis does not explore this aspect. Also the methodology used in our analysis is unable to show the actual pathways through which violence act to increase women's risk of STIs. However, as our findings suggest that, spousal violence is an important risk factor of STIs among women in India, prevention of domestic violence should be included in the programmes, aimed at combating sexually transmitted infections.

End Note

¹ Couple's file gives information about currently married couples who are co-resident in each sample household. For better understanding of the factors related to women's risk of STIs, information on the STI status of their husband should be accounted.

² One such study was made by Sunita Kishor (2009) but in her analysis she had included the missing cases along with those who said don't know to all the STD related questions. The explanatory variables she had used in her study are also different from the current study.

³ Instead of ever experienced violence by husband, in this analysis experience of violence in last 12 months by husband is used as the key explanatory variable because the information on experience of STI/symptom of STIs of the couples was also collected for the last 12 months preceding the survey.

⁴ A short description of the models has already been given in the third chapter in the section dealing with conceptual framework and methodology (page 12-13).

CHAPTER 4

SPOUSAL VIOLENCE AND UTILIZATION OF ANTENATAL CARE

The UN inter-agency estimates suggest that in 2005, worldwide 536,000 women died from causes related to pregnancy and childbirth and India alone had 22 per cent of the global share (WHO, 2007). Maternal health however goes beyond the survival of pregnant women and mothers. According to UNICEF (2009), for every one death related to pregnancy or childbirth, it is estimated that there are twenty others who suffer from pregnancy-related illness or experience other severe consequences. Antenatal care (ANC) among pregnant women is one of the effective health intervention for preventing maternal morbidity and mortality (Tewodros al., 2009). Unfortunately, each year around 38 million women receive no antenatal care (UNFPA, 2000). Most of these women belong to the developing countries.

Antenatal care refers to pregnancy-related health care, which is usually provided by a doctor or another health professional. The objectives of ANC are to monitor a pregnancy for signs of complications, detect and treat preexisting and concurrent problems of pregnancy, providing advice and counseling on the issues like preventive care, diet during pregnancy, delivery care, postnatal care and related issues (Kishor and Johnson, 2004, pp 88). Antenatal care not only has a positive impact on maternal health, it is also an important determinant of safe delivery (Bloom, Lippeveld and Wypij, 1999). In addition, ANC during pregnancy appears to have a positive impact on the utilization of post-natal health care services (Chakraborty et al., 2002 cited in Simkhada et al., 2008). Ideally antenatal care should begin soon after conception and continue throughout the pregnancy (Park, 2009). Late entry to prenatal care may act as a risk factor for low birth weight babies and premature labour (Jasinski, 2004; Bullock and McFarlane, 1989), leading contributors to infant and child deaths (Monemi et al., 2003).

According to Hindin, Kishor and Ansara (2008, pp 65), population based studies that consider the association between ANC and spousal violence are rare. Most studies in this area are clinic-based, examining whether women who sought ANC had experienced violence. This kind of study may underestimate the association between ANC and violence, because, women who have considerable experience of violence and are prevented from seeking antenatal care are excluded from the sample. However, it is only recently that researchers have begun to use the

data of nationally representative sample surveys to study the relationship between domestic violence and utilization of ANC. In one such study using the data from 1995 Egyptian DHS, Diop-Sidibe, Campbell and Becker (2006) have shown that ever beaten pregnant women were significantly less likely to visit a health professional than their never-beaten counterpart. On the other hand, the study of Hindin, Kishor and Ansara (2008) based on DHS data of ten developing countries, reveals that in most of the countries (eight) no significant relationship exists between spousal violence and women's utilization of ANC.

In this context, we are interested to examine whether in India, women's access to and timing of antenatal care varies by the experience of spousal violence, using the unit level data of third National Family Health Survey (NFHS-3). In India, where utilization of ANC is low and prevalence of domestic violence is quite high, this type study is really helpful in developing comprehensive policy framework to improve the health of women and their children.

4.1. Women's utilization of antenatal care (ANC)

In India ANC is mostly provided by the doctor, nurse, midwife, auxiliary nurse midwife (ANM) and lady health visitor (LHV). Besides the health personnel, ANC service is also provided by dai, traditional birth attendant (TBA), anganwadi and ICDS workers (IIPS, 2007). The Reproductive and Child Health Programme (RCH) launched by the Government of India in 1997, aims at providing the pregnant women at least three antenatal check-ups which include a weight and a blood pressure check, abdominal examination, immunization against tetanus, iron and folic acid prophylaxis and anaemia management. A brief discussion about the utilization of ANC among Indian women is given below.

In the present analysis only the ever married women age 15-49 who had a live birth in three years preceding the survey have been considered. Their total number is counted as 26520. Of them 237 said that they did not know if they have received any ANC and 25 cases are missing. Thus remaining 26258 women constitute our study population. It is important to note that in NFHS -3, the information about ANC pertains only to the most recent child birth. The women were asked about the timing (how many months pregnant they were) when they first received antenatal care for their last child birth and how many times did they receive the ANC. On the basis of that information the table 4.1 has been constructed.

Table 4.1
Among ever-married women age 15-49 who had given birth in last 3 years,
percentage who received ANC for their most recent child birth

Characteristics	% of women	No of observation (unweighted)
Ever had ANC service		
No	23.3	26258
Yes	76.7	
Number of ANC service		
No ANC visit	23.3	26258
1-2 visits	25.5	
3 visits	14.8	
4-5 visits	13.5	
6-7 visits	10.6	
More than 7 visits	12.3	
Timing of first ANC service		
0-3 months	56.8	21222
4-5 months	29.5	
6 months or after	13.7	

Source: Computed from unit level data of NFHS-3

Note: The percentages are derived by applying sample weight

From the above table it is found that despite various initiatives taken by the government, almost one fourth women in India (23 percent) did not receive any antenatal care. The percentage of women who did not receive any ANC is highest in Bihar (67 percent), whereas Goa and Kerala show 100 percent achievement (See appendix 4.1).

Ideally the mother should attend the antenatal clinic once a month during the first 7 months; twice a month during the next month; and thereafter, once a week, if everything is normal (Park, 2009, pp 450). In India for the working women of lower socio-economic status, attendance at antenatal clinic means loss of daily wages in most of the cases. So it is quite obvious that they will be reluctant to visit the antenatal clinic so often. In these cases, as indicated by the National Child Survival and Safe Motherhood programme (1994), a minimum of 3 visits covering the entire period of pregnancy should be the target – the 1st visit at 20 weeks or as soon as the pregnancy is known, the 2nd visit at 32 weeks and the 3rd visit at 36 weeks (Park, 2009). It is unfortunate that almost half of the women of our country (49 percent) were not

entitled to have at least three ANC visits and only 23 percent mothers received antenatal care 6 times or more. In fact in Bihar only 16.7 percent women received at least three ANC (Appendix 4.1). Among the women who received any ANC, 57 percent of them received it in the first trimester and 86 percent within 20 weeks of their pregnancy. While in Kerala, 93 percent women received ANC in their first trimester (highest among Indian states), in West Bengal the figure is as low as 40 percent (lowest among the Indian states) (Appendix 4.2).

NFHS-3 also collected information on various types of ANC facilities women had availed. Among the women included in our analysis, 62.7 percent were weighted, 62.6 percent reported that their blood pressure was measured, 64.9 percent were given or bought IFA tablets/syrup and 38.7 percent took it for at least 90 days. It was also found that 76.2 percent women received two or more tetanus toxoid (TT) injections.

4.2. Women's experience of spousal violence

Among the sample population of this study, 37 percent experienced physical violence, 11.6 percent experienced sexual violence and 16.1 percent experienced emotional violence by their husbands at any time in their life. Here, husband refers to the current or the most recent husband. Prevalence of physical violence is highest in Bihar, but prevalence of sexual and emotional violence is highest in Tripura (Appendix 4.3). At all India level, 42.2 percent women had ever experienced physical, sexual or emotional violence. Therefore, the prevalence of violence among the study population is quite high. Besides, 13.2 percent women faced both physical and emotional violence and 5.2 percent women experienced both sexual and emotional violence. This indicates that in most of the cases, emotional violence is accompanied by physical violence. In Bihar, 67 percent of women had experienced spousal violence (physical, sexual or emotional) at any time in their life, which is highest among any Indian state. Considering spousal violence in last 12 months preceding the survey, it is found that 26.2 percent, 9.3 percent and 12.2 percent women faced spousal physical, sexual and emotional abuse respectively.

4.3. Association between spousal violence and receiving any ANC

Table 4.2 shows the association between various types of spousal violence and women's utilization of any ANC. From the analysis it is apparent that the incident of spousal violence is significantly associated with women's chances to receive ANC and as the violence increases the

possibility of utilization of antenatal care by women decreases. Among the women who never experienced physical violence, 82.3 percent of them received ANC service for the birth of their last child, while among the women who had ever experienced physical violence, 67.2 percent of

Table 4.2
Among ever-married women age 15-49 who had given birth in last 3years,
percentage who received any ANC for their last child birth by
experience of violence and Pearson’s Chi square results

Background characteristics	% women received ANC	No of observation (unweighted)	χ^2	Sig
Experience of physical violence				
No	82.3	13780	575.90	.000
Yes	67.2	6497		
Experience of sexual violence				
No	77.7	18403	86.59	.000
Yes	68.9	1885		
Experience of emotional violence				
No	78.1	17453	111.33	.000
Yes	69.4	2835		
Experience of physical, sexual or emotional violence				
No	82.7	12855	533.62	.000
Yes	68.5	7422		

Source: Computed from unit level data of NFHS-3

Note: The percentages are derived by applying sample weight

them received ANC. From the above table it is found that the experience of sexual and emotional violence has significant association with women’s utilization of ANC. Also the percentage of women who received any ANC is significantly higher among the non-abused women than who are physically, sexually or emotionally abused by their husband at any time in their life.

4.4. Relationship between Spousal violence and number of ANC visit by women

The present section analyzes if spousal violence influence the number of ANC visit of a woman. It is found that among the victims of spousal physical, sexual or emotional violence, 31.5 percent did not receive any ANC while the percentage is reduced to 17.3 for the women who have never been abused (Table 4.3). However, among the women who received only 1-2 ANC services, the percentage is higher for the violence affected women than their counterpart. If

Table 4.3
Percentage of women showing the number of
ANC visit for their last child birth by type of violence

Background characteristics	Number of ANC visit						No of observation (unweighted)	χ^2	Sig.
	No ANC	1-2	3	4-5	6-7	>7			
Experience of physical violence									
No	17.7	24.0	14.9	14.7	12.7	16.0	13780	1010.55	.000
Yes	32.8	28.2	14.4	11.5	7.1	6.0	6497		
Experience of sexual violence									
No	22.3	24.9	14.5	13.7	11.2	13.3	18403	283.30	.000
Yes	31.1	30.2	16.8	11.6	5.8	4.5	1885		
Experience of emotional violence									
No	21.9	25.2	14.8	13.5	11.1	13.4	17453	212.89	.000
Yes	30.6	27.2	14.6	13.2	7.8	6.7	2835		
Experience of physical, sexual or emotional violence									
No	17.3	23.8	14.8	14.7	12.8	16.5	12855	979.59	.000
Yes	31.5	27.9	14.7	11.8	7.5	6.5	7422		

Source: Computed from unit level data of NFHS-3

Note: The percentages are derived by applying sample weight

The figures pertain to only ever-married women aged 15-49 who had given birth in last 3 years

it is considered that at least three ANC visit is adequate, then 59 percent of physically abused women did not receive adequate ANC compared to 41 percent of non-abused women. Experience of violence appears as a significant factor associated with 4 or more ANC visit. Among the women who never experienced physical, sexual or emotional violence by their husband, 14.7 percent of them had 4-5 antenatal visits as against 11.8 percent of the abused women, a gap of 2.9 percent point. This gap is increased to 5.3 percent point for 6-7 visits and 10 percent point when more than 7 antenatal care visits are considered. The same trend is also found when physical, sexual and emotional violence are separately taken into account.

4.5. Relationship between spousal violence and timing of first antenatal care service

It is found from table 4.4 that spousal violence is significantly associated with delayed entry into prenatal care. During the first trimester, 62 percent of the non-abused women received their first ANC service; while those who had faced spousal physical, sexual or emotional violence, 49 percent of them received ANC in their first trimester.

Table 4.4
Percentage of ever-married women age 15-49 with different timing of first ANC visit for their last child birth by experience of violence

Background characteristics	Timing of first ANC visit			No of observation (unweighted)	χ^2	Sig.
	0-3 months	4-6 months	>6 months			
Experience of physical violence						
No	61.1	32.0	7.0	11580	227.75	.000
Yes	48.3	40.8	10.9	4745		
Experience of sexual violence						
No	58.3	33.7	7.9	14941	104.07	.000
Yes	44.8	44.0	11.1	1391		
Experience of emotional violence						
No	58.0	34.0	8.0	14253	40.65	.000
Yes	50.7	39.3	9.9	2079		
Experience of physical, sexual or emotional violence						
No	61.7	31.4	6.9	10847	240.40	.000
Yes	49.0	40.5	10.5	5478		

Source: Computed from unit level data of NFHS-3

Note: The percentages are derived by applying sample weight

The figures pertain to only ever-married women aged 15-49 who had given birth in last 3 years

Physical, sexual and emotional – all type of violence is significantly associated with women's late entry into prenatal care. The pattern that has emerged from the bivariate analysis between the timing of first ANC visit and experience of violence is as follows:

In the first trimester of pregnancy, the percentage of women who received any ANC is lower among the victims of violence than those who never experienced spousal violence.

In the second trimester many violence affected women had the chance of receiving ANC for the first time. Therefore, in the second trimester of pregnancy, the percentage of women who received their first ANC is higher among violence affected women than their counterpart.

The percentage of women who had their first ANC visit after six months of their pregnancy is higher among the abused women than the non-abused women, reflecting the influence of violence on the timing of ANC. In fact, during the first 6 months of pregnancy, those who were never abused physically, 93.1 percent of them availed their first ANC service compared to 89.1 percent of violence affected women.

5.6. Other factors affecting ANC

From the earlier discussion it is clear that domestic violence acts as a deterrent factor in receiving ANC but there are other factors that also influence women's utilization of ANC. In fact a woman's possibility to receive ANC depends on in combination of several factors. Now we will discuss other factors that affect the utilization of ANC and examine the association between these factors and adequate utilization of ANC by women.

Various studies have shown that maternal health care utilization depends on a range of demographic, cultural and socio-economic factors, some of which are at individual level, some at household level and some at community level (Elo I. T.,1992; Celik and Hotchkiss, 2000; Magadi, Madise and Rodrigues, 2000; Wiley, 2002; Islam M., 2003; Gleib, Goldman and German, 2003; Ghosh, 2004; Pandey et al, 2004; Roy, Kulkarni and Vaidehi, 2004; Gyimah et al., 2006; Sunil, Rajaram and Zottarelli, 2006). In the present study, however, depending upon the availability of data, mostly individual and household level factors have been considered. A brief discussion of them is given below –

Age of women – Age of the women is an important factor influencing ANC visit because women at very low age group and at very high age group may suffer from higher pregnancy complications which necessitate ANC visit. Besides, women at higher age group usually enjoy greater autonomy in our society and are expected to enjoy more reproductive health care facility than the women at lower age group.

Women's age at marriage – Early marriage can initiate early sexual union leading to early child birth. Women who marry at an early age usually have low level of education, very low decision making power at their husband's home and are also vulnerable to violence. Therefore their probability of having ANC is lower than women who marry at later age.

Birth order of the child – Birth order also affects women's utilization of ANC. For the first child, a woman is more likely to go for ANC than the higher order births. This may be attributed to excitement, lack of experience and fear attached to the first birth.

Desirability of the birth – It is anticipated that the use of ANC will be lesser for unwanted child than the wanted child.

Education of women – Education helps in making people aware of the importance and benefits of utilizing health care services. Higher education of women is believed to be associated with more autonomy in household decision making and stronger demand for satisfactory services from the health practitioners. Various studies show that higher education is associated with increased use of ANC during pregnancy.

Religion – Utilization of health care may vary among different religious groups, which have their own norms, rituals and prohibitions that affect reproductive behaviour of women.

Caste/tribe – The schedule caste and the schedule tribe population are generally poor with low level of education and do not have easy access to modern health care services. Most of the tribes follow their traditional health belief, and their utilization of ANC services is also very low.

Exposure to mass media – Exposure to mass media (See appendix 4.4) makes a woman aware about the necessity of ANC visit. It also helps to know about the service providers and the places where such services are available.

Decision making power of women – It is usually believed that higher decision making power (see appendix 4.5) of women is associated with greater utilization of health care facilities by them.

Restriction on mobility of women – The chances of receiving antenatal care will be low for those women who are not allowed to go health centres or restricted to go outside the village/community. (See appendix 4.6)

Type of place of residence – Type of place of residence determines the availability and accessibility of health care services. Most of the health care facilities are located in urban areas and the information about maternal health care services are more widespread in urban areas through various posters, hoardings etc. than the rural areas. Therefore, the utilization of ANC services is higher in urban areas.

Occupation of women – Those who work in primary sector cannot afford regular ANC check-up due to wage loss. On the other hand those who work in tertiary sector are mainly educated and conscious about their own health needs and the health of their child. So their utilization of ANC facility is expected to be higher than those in primary sector or those who are not working.

Wealth Index - Those who are rich have higher access to health care facilities. Moreover, women from rich families are expected to be more educated and therefore, they will demand better health care services. So their utilization of ANC services is higher than the poor women.

Regions in India –All parts of this vast country are not equally developed. The physical and socio-cultural characteristics also vary from region to region. In fact the study of Navaneetham and Dharmalingam (2002) shows that utilization of maternal health care services may vary with state. The interstate differences in health care utilization can be explained by “variations in the implementation of maternal health care program as well as differences in availability and accessibility between states”.

Table4.5

Among ever married women age 15-49 who had given birth in last three years, percentage who received at least 3 ANC for their last child birth by background characteristics

Background characteristics	% of women having at least 3 ANC	Sample size (unweighted)	χ^2	Sig.
Age of women				
15 - 19	50.1	2059	192.05	.000
20 - 29	54.1	17991		
30 - 49	41.6	6206		
Women's age at marriage (excludes married gauna not performed)				
Less than 18 years	41.3	12650	1076.90	.000
18 years and above	65.1	13606		
Birth order of the last child				
1	67.4	8133	1837.79	.000
2 to 3	54.6	11982		
4 and above	26.9	6141		
Desirability of the last birth				
Wanted then	53.7	20618	334.21	.000
Wanted later	51.8	2878		
Wanted no more	33.1	2758		
Women's highest level of education				
No education	30.2	10151	3583.92	.000
Primary	52.7	3707		
Secondary and above	76.7	12397		

Contd.

Table 4.5 contd.

Religion				
Hindu	51.6	18179	145.41	.000
Muslim	44.6	4333		
Other	66.5	3715		
Caste/tribe				
SC/ST	43.6	8765	190.87	.000
Other	54.5	16456		
Exposure to mass media				
No/lower exposure	43.1	18432	1663.34	.000
Higher exposure	77.7	7787		
Decision making power of women				
Low	51.0	21453	0.97	.617
Medium	52.0	2949		
High	51.9	1484		
Restriction on women's mobility				
High restriction	46.1	11283	292.15	.000
Partial restriction	51.6	6747		
No restriction	61.0	8212		
Type of place of residence				
Urban	73.5	10006	1330.59	.000
Rural	43.5	16250		
Occupation of women				
Not working	55.6	17602	573.48	.000
Primary sector	35.9	5340		
Other sector mainly service sector	58.0	3294		
Wealth index				
Poorest	27.2	4592	3391.32	.000
Poorer	36.9	4787		
Middle	53.8	5334		
Richer	69.5	5782		
Richest	86.0	5761		
Regions in India				
Northern	37.4	9623	3180.04	.000
Eastern	40.1	4991		
North-eastern	41.9	4998		
Western	75.1	2936		
Southern	88.8	3708		

Source: Computed from unit level data of NFHS-3

Note: The percentages are calculated using sample weight

According to the bivariate analysis, except the decision making power, all other background factors of women are significantly associated with their chances to receive at least 3 ANC services (Table 4.5). From the bivariate analysis it is found that the percentage of women who received at least three ANC is higher among age group 20-29, who married at age 18 or more, have secondary or higher level of education, residing in urban areas and in South India, from economically sound background, with higher exposure to mass media and no restriction on mobility. The utilization of ANC services is higher for the first birth order and wanted child. Further non scheduled caste/scheduled tribe women and women other than Hindus and Muslims make greater utilization of ANC facilities.

4.7. Does spousal violence act as an independent risk factor for not receiving adequate ANC by women?

In this section four binary logistic regressions have been worked out as we get four models showing the probability of receiving at least three ANC services by women for their last child birth (The models have already been explained in the methodology section, pp. 13). Odds ratios greater than one indicate a positive relationship between the independent variables and the probability of receiving adequate ANC services; and odds ratios less than one indicate a negative relationship. If controlling for all the explanatory variables, spousal violence still remains a significant predictor for lower utilization of ANC in these models, then, we can consider it as an independent deterrent factor for adequate utilization of antenatal care. The measurement of the dependent and independent variables included in the logistic regression models is given below:

Dependent variable

1. Women's utilization of at least three ANC services for the child last birth: dichotomous as
0 – No (Did not receive at least three ANC services)
1 – Yes (Received at least three ANC services)

Explanatory variables

Domestic violence

1. Women's experience of physical, sexual or emotional violence by the husband:

0 – No (Never experienced any violence)

1 – Yes (Having experienced violence)

Demographic and fertility related variables

2. Age of women

1 – 15 to 19

2 – 20 to 29

3 – 30 to 49

3. Women's age at marriage

1 – Less than 18 years

2 – 18 years and above

4. Birth order of the last child

1 – 1

2 – 2 to 3

3 – 4 and above

5. Desirability of the last child

1 – Wanted then

2 – Mistimed / wanted later

3 – Unwanted / wanted no more

Socioeconomic variables

6. Women's highest level of education

1 – No education

2 – Primary

3 – Secondary or above

7. Religion

1 – Hindu

2 – Muslim

3 – Other

8. Caste / Tribe

1 – Scheduled caste / Scheduled tribe

2 – Other

9. Exposure to mass media

1 – No or lower exposure

2 – Higher exposure

10. Decision making power of women

1 – Low

2 – Medium

3 – High

11. Restriction on women's mobility

1 – High restriction (low mobility)

2 – Partial restriction (medium mobility)

3 – No restriction (high mobility)

12. Type of place of residence

1 – Urban

2 – Rural

13. Occupation of women

1 – Not working

2 – Working in primary sector

3 – Working in other sector mainly service sector

14. Wealth Index

1 – Poorest

2 – Poorer

3 – Middle

4 – Richer

5 – Richest

Other factor

15. Regions in India

1 – Northern

2 – Eastern

3 – North-eastern

4 – Western

5 – Southern

Table 4.6

Logistic regression results for women's utilization of at least three ANC, India, 2005-06

Background characteristics	Odds ratio (Model 1)	Odds ratio (Model 2)	Odds ratio (Model 3)	Odds ratio (Model 4)
Women's experience of spousal violence (physical, sexual or emotional)				
No (R)				
Yes	0.51***	0.67***	0.82***	0.87***
Age of women				
15 - 19 (R)				
20 - 29		1.70***	1.22**	1.29**
30 - 49		2.15***	1.40***	1.53***
Women's age at marriage (excludes married gauna not performed)				
Less than 18 years (R)				
18 years and above		1.93***	1.18***	1.19***
Birth order of the last child				
1		5.33***	2.70***	2.49***
2 to 3		3.13***	1.82***	1.62***
4 and above (R)				
Desirability of the last birth				
Wanted then		1.19**	1.30***	1.28***
Wanted later		1.19**	1.17*	1.18*
Wanted no more (R)				
Women's highest level of education				
No education (R)				
Primary			1.70***	1.57***
Secondary and above			2.33***	2.00***
Religion				
Hindu (R)				
Muslim			0.81***	0.85***
Other			0.56***	0.66***
Caste/tribe				
SC/ST (R)				
Other			1.07	1.01
Exposure to mass media				
No/lower exposure (R)				
Higher exposure			1.62***	1.57***

Contd.

Table 4.6 contd.

Decision making power of women				
Low (R)				
Medium			1.03	1.01
High			1.23**	1.05
Restriction on women's mobility				
High restriction (low mobility) (R)				
Partial restriction (medium mobility)			1.34***	1.33***
No restriction (high mobility)			1.43***	1.39***
Type of place of residence				
Urban			1.45***	1.30***
Rural(R)				
Occupation of women				
Not working (R)				
Primary sector			0.94	0.88**
Other sector (mainly service sector)			1.16**	1.11
Wealth index				
Poorest (R)				
Poorer			1.28***	1.28***
Middle			1.80***	1.87***
Richer			2.70***	2.98***
Richest			4.70***	5.89***
Region in India				
Northern (R)				
Eastern				1.77***
North-eastern				1.30***
Western				2.95***
Southern				7.90***
N	20277	20275	19198	19198
-2Log likelihood	27053.72	24591.79	20077.07	18911.48
Nagelkerke R square	.034	.184	.364	.422

Source: Computed from unit level data of NFHS-3

Note: *p< .05, **p< .01, ***p< .001; (R) = reference category

From model 1, it is evident that the women who experienced spousal violence (physical or sexual or emotional) are less likely to have adequate ANC services (at least three) than the women who did not experience violence (OR 0.51, p< .001). In model 2, when the demographic and fertility-related variables are added to the first model, the odds ratio of receiving adequate

ANC for abused women is increased from 0.51 to 0.67. After adding the socio-economic variables, the odd ratio becomes 0.82 and when the regional factor is included in the final model, the odds becomes 0.87. In model 2, model 3 and model 4, after covariate adjustment, the relationship between experience of spousal violence and women's utilization of adequate ANC remains statistically significant ($p < .001$). Therefore, all the four models show that spousal violence acts as risk factor leading to inadequate utilization of ANC services. Thus, the hypothesis that, "after controlling for background characteristics, women who have ever experienced spousal violence are less likely to receive at least 3 antenatal care services than the women who have never experienced spousal violence", has been proved. Also controlling for other variables, victims of violence are more likely to report no ANC or late entry into ANC services (after first trimester) than those who never experienced violence (See appendix 4.12 and appendix 4.13 respectively).

4.8. Other findings from logistic regression analysis

From the final model (model 4) the following other findings can be outlined:

Among the demographic and fertility-related variables included in our analysis (age of the woman, age at marriage, birth order and desirability of birth), all are significantly associated with women's possibility to receive at least 3 ANC services. Controlling for other factors women in age group 20-29 years and 30-49 years are significantly more likely to receive at least 3 ANC than the women of younger age (15-19 years). Riberio et al. (2009) in their study in Brazil, also found lower utilization of ANC among younger age group. After we adjust for other risk factors, it is found that women who marry at the age of 18 years or later are significantly more likely to receive adequate ANC services than those who marry below age 18. The utilization of ANC is also significantly higher for wanted child than unwanted child. Controlling for other factors, women are more likely to utilize ANC for lower order births than the fourth or higher order births. Similar finding is depicted by Ciceklioglu, Soyer and Asli Ocek, (200), Magadi, Madise and Rodrigues (2000), and Paredes et al., (2005).

Now let us consider the socioeconomic factors affecting the utilization of ANC services. Among the socioeconomic factors, education has a strong positive effect on ANC visit by the women. Other studies also found that education increases women's utilization of ANC (Tewodors, Mariam and Yohannes, 2009; Paanday et al., 2004; Ciceklioglu et al., 2005;

Cindoglu and Sirkeci, 2001; Gleit, Goldman and Rodriguez, 2003). In case of religion, after covariate adjustment, Muslim women and women from 'Other' religious groups are significantly less likely to receive at least 3 ANC services than the Hindus; but caste/ tribe factor does not have significant effect on adequate ANC utilization. One study from South India also depicted the similar result (Navaneetham and Dharmalingam, 2002). The multivariate logistic regression model shows that, women with medium and higher mobility have significantly higher chances of receiving ANC than the women with highly restricted mobility; however, women's decision making power is not significant to affect the use of ANC. Controlling for other factors, exposure to mass media has a significant positive impact on utilization of ANC. Our analysis also depicts that women from urban areas are significantly more likely to use adequate ANC than their rural counterpart. After covariate adjustment, women's occupation is found to be significantly associated with the utilization of at least 3 antenatal care services. Compared to the non-working women, those who work in primary sector are less likely to receive at least 3 ANC services. Income/wealth has a significant positive impact on receiving adequate ANC services. This finding is compatible with previous studies (Pandey et al., 2004; Ye et al., 2010; Riberio et al., 2009).

Finally from the regression analysis it can be said that, compared to the women in north India, women from all other regions are significantly more likely to receive at least 3 ANC services. However, it is interesting to note that the chances of receiving 3 or more ANC is almost eight times higher in south India than north India, which depicts remarkable disparity in health care facility and its utilization between the north and the south.

As a conclusion of this chapter it can be said that spousal violence is one of the important factors that reduces women's access to antenatal care. It has been found that after covariate adjustment, abused women are less likely to report adequate ANC visits (at least three) than the women who were never abused. The analyses also show that violence is associated non utilization of ANC and delayed entry into prenatal care. However, the methodology used here is unable to show the actual pathways through which violence act to deter women's chances of receiving ANC. One possible argument for low ANC among the victims of violence may be that, violence restricts women's mobility; so they cannot go to the health care providers when needed (Diop-Sidibe, Campbell and Becker, 2006). Besides, due to violence women may suffer from

depression, phobia which make them unable to take own health care. Violence could lead to unwanted child and a woman can become reluctant to use ANC for such a child.

Finally, it should be kept in mind that ANC is necessary for preventing maternal mortality and infant and child deaths. Spousal violence reduces the utilization of ANC and thus acts as a barrier for maternal and child health care. Therefore, prevention of domestic violence will not only help to achieve universal utilization of ANC, but also contribute to the betterment of maternal and child health.

CHAPTER 5

SPOUSAL VIOLENCE AND UNINTENDED PREGNANCY

About one third of pregnancies, around 80 million a year, are believed to be unintended (UNFPA, 2000). The term ‘unintended pregnancy’ or ‘unplanned pregnancy’ refers to the sum of mistimed and unwanted pregnancies. A woman is assumed to have a mistimed pregnancy, if the woman did not want to become pregnant at the time when she became pregnant or in other words if she wanted to delay her pregnancy. On the other hand, a woman is assumed to have an unwanted pregnancy if the woman did not want to become pregnant at all, or in other words the pregnancy occurred when she wanted to stop childbearing (Adetunji, 2001).

Unplanned pregnancy, reflecting women’s inability to control their fertility, not only indicates the violation of reproductive rights of women, but also mirrors the extent of unmet need for contraception in a country or region (Adetunji, 1998). Widespread unintended pregnancy in developing countries acts as a retarding factor for population stabilization (Westoff, 1981). The works of Trussell et al. (1997) suggest that, unintended pregnancies put a heavy financial burden on the society. It is evident from earlier studies that unintended pregnancy is linked with a range of negative health behaviors of the women and adverse health outcomes of the mothers and their children. These include unsafe abortions leading to numerous maternal deaths (Henshaw, Singh and Haas, 1999; UNFPA, 2000, WHO, 2008), late entry into prenatal care (Weller, Eberstein and Baily, 1987; Marsiglio and Mott, 1988; Joyce and Grossman, 1990; Gage, 1998; Kost, Landry and Darroch, 1998; Eggleston, 2000; Magadi, Madise and Rodrigues, 2000; Marston and Cleland, 2003; Shaheen et al., 2007), delivery of low birth-weight or smaller sized babies (Shheen et al., 2007; Sable et al., 1997), lower likelihood of breast feeding (Chinebuah and Perez-Escamilla, 2001; Dye et al., 1997; Taylor and Cabral, 2002) and ill health of the mothers and the infants, miscarriages or neo-natal deaths when pregnancies are closely spaced (Khoshnood et al., 1998; Jacoby et al., 1999; Smith, Pell and Dobbie, 2003). The ICPD Programme of Action (1994), therefore, put particular emphasis on the reduction of unplanned pregnancy.

Unintended pregnancies continue to occur primarily because women in reproductive age group, who do not want a child, are not using contraception (Henshaw, Singh and Haas, 1999). The basic reason for it is that millions of sexually active people do not have access to modern

methods of contraceptives. Those who have access to it, many of them do not know the proper use of it. Besides, there is a lack of control of women over sexual decision making and contraceptive use under the constant threat of violence by their intimate male partner (Bawah et al., 1999; Goodwin et al, 2000; Pallitto and O'Campo, 2004 and 2005; Koenig et al, 2004; Stephenson et al., 2008). A study (Bawah et al., 1999) based on focus group discussions (FGDs) in northern Ghana reveals the reality depicted by the last statement. As indicated by the study, one woman during an FGD said, "...Even when you tell your husband that you would not like to have another child (yet), he will tell you that he paid bridewealth, so that he can have children with you and that you have no right to tell him not to have sex with you. If you still insist, he beats you up..." This study also finds that although contraceptive use may reconcile men's sexual desire and women's interest in spacing, due to various other reasons it also generates marital discord, the physical abuse of wives, and the opposition of the family members. So violence is a weapon by which men control women's sexual and reproductive autonomy and force them to face unintended pregnancy.

A number of recent studies, particularly from the developing countries revealed that intimate partner violence is a significant risk factor of unplanned pregnancies even after the socio-economic and demographic factors are controlled (Goodwin et al, 2000; Pallitto and O'Campo, 2004, 2005; Koenig et al, 2004; Cripe et al, 2008; Silverman et al, 2007; Kishor and Johnson, 2006; Hindin, Kishor and Ansara, 2008; Stephenson et al., 2008; Begum et al, 2010). But in India, this type of study is particularly limited. Therefore, in this chapter an attempt has been made to explore the relationship between spousal violence and unintended pregnancy in the context of India.

5.1. Determination of unintended most recent pregnancy

The present analysis is based on data from women's file of NFHS-3 and restricted to ever married women aged 15-49 who had given live birth in five years preceding the survey or who were currently pregnant during the time of interview. They were asked – 'At the time you became pregnant, did you want to become pregnant, did you want to wait until later, or did you not want to become pregnant at all?' Women who stated that they wanted to wait until later were categorized as having had a mistimed pregnancy. Those who replied that they did not want to become pregnant at all were recognized as having had an unwanted pregnancy. Finally, the

responses of mistimed pregnancies and unwanted pregnancies are clubbed together to figure out total unplanned/unintended pregnancies. Though NFHS-3 gives the information about unplanned pregnancy for the last three births of the women, this analysis has considered information regarding the last child birth alone, as it is assumed to be least affected by recall bias and post birth rationalization. Considering both the currently pregnant women and those who have had live birth in the 5 years preceding the survey, the women with unintended most recent pregnancy have been identified in the following way –

- (1) If a woman, who never had a live birth, reported her current pregnancy as wanted later or wanted not at all;
- (2) If a woman, who is not currently pregnant, reported her last pregnancy that ended in a live birth as wanted later or wanted not at all; or
- (3) If a woman, who is currently pregnant and also had given live birth in past 5 years, reported her current pregnancy as wanted later or wanted not at all.

It is to clarify that in case of unintended most recent pregnancy, if a woman considered her last birth as unplanned but the present pregnancy as intended then her most recent pregnancy is considered as intended.

There are total 39355 ever-married women age 15-49, who had given live birth in 5 years preceding the survey or are currently pregnant and they constitute the sample of this study.

5.2. Association between Spousal violence and unintended pregnancy

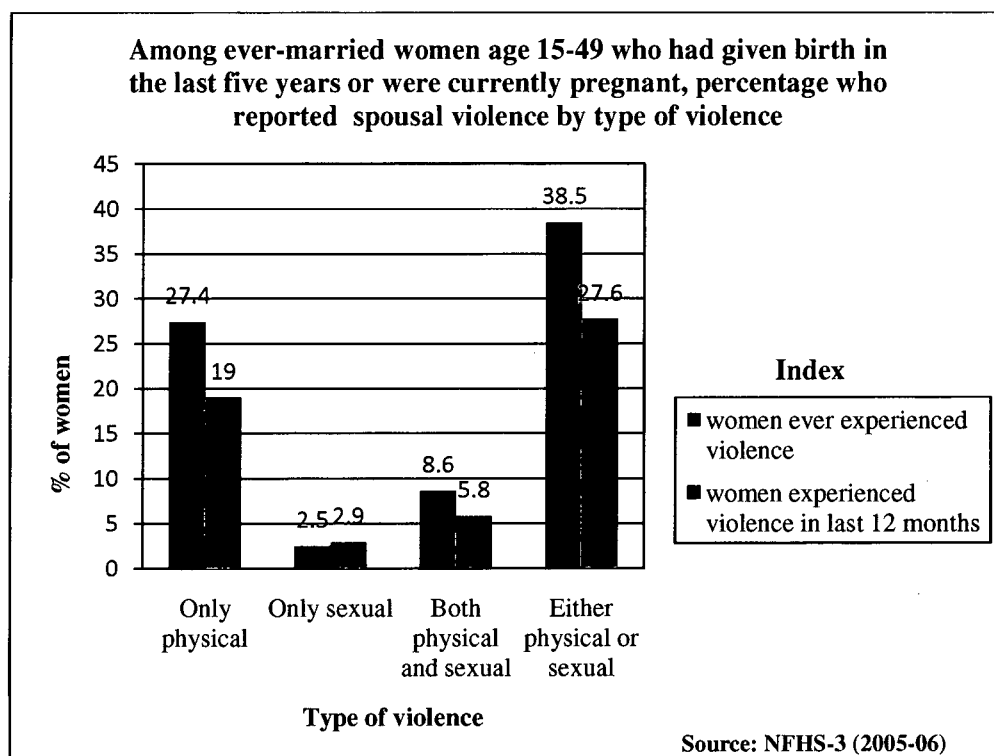
In India, both unintended pregnancy and spousal violence are common. The report of NFHS-3 reveals the facts that, in India, 37 percent of ever married women age 15-49 experienced spousal physical or sexual violence; on the other hand among the births in five year before the survey, 10 percent were mistimed and 11 percent were not wanted at all. According to this report, if all women were to have only the number of children they wanted, the TFR would have been 1.9 (i.e. below the replacement level of 2.1) instead of 2.7.

Among the sample population of the present study, around one fourth (23.7 percent) women reported their most recent pregnancy as unintended (11 percent experienced mistimed pregnancy and 12.7 percent experienced unwanted pregnancy. The highest percentage of

unintended recent pregnancy is found in Mizoram (54.2%) and the lowest is found in Goa (10%). (Appendix 5.1)

Overall 38.5 percent of the study population reported that they faced either physical or sexual violence at any time in their life by their current or the most recent husband and 27.7 percent women said that they experienced physical or sexual violence in 12 months preceding the survey. However, the prevalence of physical violence is much higher than the sexual

Figure 5.1



violence (figure 5.1). Looking at the state-wise distribution, it is found that the proportion of women who faced either physical or sexual violence is highest in Bihar (62.1%) and lowest in Himachal Pradesh (5.4%). (Appendix 5.2)

The present study finds that, the most common act of physical violence is slapping followed by pulling the hair or twisting the arm (See Appendix 5.3). The proportion of women who faced severe physical violence is small. 35 percent of women were slapped by their current or last husband but only 1 percent women reported that they were attacked or threatened with knife/gun and only 2 percent women reported that their husbands tried to choke or burn them.

To understand the association between unintended pregnancy and spousal violence, first bivariate analysis has been done (Table 5.1). It is clear from the analysis that unintended

Table 5.1
Percentage of ever-married women age 15-49 who reported their most recent pregnancy as unintended by the experience of act and type of violence committed by their current or the most recent husband and Pearson's Chi square results

Act of violence		No of observation	% of women with unintended pregnancy	χ^2	Sig.
Pushed/ threw something	No	27065	22.7	102.52	.000
	Yes	3487	30.1		
Slapped	No	21341	20.6	268.23	.000
	Yes	9219	29.3		
Pulled hair or twisted arm	No	26796	22.7	83.82	.000
	Yes	3757	29.1		
Punched	No	27872	22.6	134.65	.000
	Yes	2688	32.0		
Kicked, dragged or beat	No	27801	22.8	90.90	.000
	Yes	2759	30.5		
Tried to choke or burn	No	30049	23.4	50.93	.000
	Yes	511	36.4		
Threatened with gun/knife	No	30256	23.6	9.61	.002
	Yes	302	31.6		
Forced to sexual intercourse	No	28009	22.6	142.74	.000
	Yes	2551	32.4		
Forced to any sexual act	No	29315	23.1	89.79	.000
	Yes	1245	34.1		
Experience of different types of violence					
No violence		20402	20.2	338.48	.000
Only physical		7426	27.8		
Only sexual		561	27.5		
Both Physical & sexual		2154	33.9		

Source: Computed from unit level data of NFHS-3

Note: The percentages are calculated using sample weight.

Only the women who were currently pregnant or who had given birth in five years preceding the survey, are included in the analysis

pregnancy is higher among women who have experienced any act of violence, be it physical or sexual, severe or less severe, than the women who never experienced violence. Regarding the

type of violence, it is found that the percentage of women, who reported their most recent pregnancy as unintended, is highest among those who experienced both physical and sexual violence (33.9%).

Among the women who never experienced violence, 20.2 percent of them reported their most recent pregnancy as unintended while those who experienced only physical violence and only sexual violence, 27.8 percent and 27.5 percent of them respectively reported their most recent pregnancy as unintended.

From the above analysis it is clear that spousal violence is significantly associated with unintended pregnancy, but the background characteristics of women also affect their experience of unintended pregnancy. Considering these characteristics, we will examine what is net impact of spousal violence on unintended pregnancies. Before that, let us discuss other factors that may have an impact on unintended pregnancies.

5.3. Other factors associated with unintended pregnancies

From literature review, the following factors are found to be associated with unintended pregnancies –

Demographic and fertility related factors

Age of women – Previous studies have found that age of the women is an important factor associated with unintended pregnancies (Adetunji, 1998; Forrest, 1994; Shaheen et al., 2007; Okonofua et al., 1999; Goicolea and Sebastian, 2010). Table 5.2 shows that among the study population while 17.3 percent women of age group 15-19 years reported their most recent pregnancy as unintended, 31.7 percent women aged 30-49 years reported the same.

Number of surviving children – In the Indian society preference for a male child is an unfortunate reality. For various socio- economic and cultural reasons, many couples prefer male child than a female one. So in most cases, if a couple have a surviving daughter, they usually wait for a male child; but if they already have a son, then their chance of reporting the next pregnancy as unintended rises. However, as the number of surviving children increases, irrespective of sex, the incidence of unintended pregnancy also increases. In the bivariate analysis, it is found that those with no surviving children, 11 percent of them had classified their

most recent pregnancy as unintended. The women who had one surviving son, 13.6 percent of them reported to have unintended most recent pregnancy and 12.1 percent women with one surviving daughter reported the same. On the other hand 29.2 percent of women with at least two living children reported recent pregnancy as unintended.

Use of contraceptive methods – The effective use of modern contraceptives helps a woman not to become pregnant. Traditional / folkloric methods also help to prevent unintended pregnancies to some extent. Surprisingly, from table 5.2 it is noted that among the women who had never used any contraceptives, 19.4 percent of them reported unintended recent pregnancy, while among the women who had used traditional/folkloric method and modern method of contraception, 26.7 percent and 27 percent of them respectively faced this problem.

Socio-economic factors

Highest level of education of women - Level of education of the women is an important factor affecting unintended pregnancy as educated women have greater knowledge and access to contraception that helps to avoid unintended pregnancies. Women with better education also enjoy more autonomy in reproductive health related decision making. Bivariate analysis shows that 25.5 percent women without education had unintended recent pregnancy, while among the women who had at least secondary level of education, 21.2 percent of them reportedly faced that problem.

Religion – Religion may affect pregnancy intention of women through norms related to the use of contraception/fertility control. For example many Muslim couples and Christian Catholics deny to practice family planning on religious ground. From Table 5.2 it is evident that unintended recent pregnancy is highest among the Muslims (29.0%), followed by the Hindus (22.9%) and 'Other' (18.4%). Christians and Sikhs dominate the 'other' category.

Caste/ Tribe – In India Scheduled Caste (SC) and Scheduled Tribe (ST) populations are regarded as backward class. Among them, especially the tribes are inhabitants of remote places. Therefore, it is found that these populations have lesser opportunities to access modern contraceptives and other health facilities. This may increase their chances of experiencing unintended pregnancy. On the other hand, the desired family size of SC/ST women is larger than the non SC/ST women. However in the bivariate analysis no significant association is found

between caste/ tribe type and unplanned pregnancy and the percentage of women with unintended pregnancy is almost similar among the SC/ST and the other category (non SC/ST).

Type of place of residence – In our country, most of the health care facilities are located in urban areas. Women of urban areas have more information and access to modern contraceptive methods than their rural counterparts. Therefore, it seems that rural women may face the problem of unintended pregnancy more than the urban women. From table 5.2, it is found that the number of women, who reported their most recent pregnancy as unintended, is slightly higher in rural areas than urban areas (24.2 % vs. 22.2%).

Marital control by husband – The level of marital control by the husband, as depicted by marital control index (Appendix 5.5), can be regarded as a useful proxy for the status of women. As the marital control of the husband on his wife increases, the decision making power of the wife decreases. Women who face higher control by their husbands tend to experience more unintended pregnancy than the women enjoying no/lower control. From the bivariate relationship it is evident that unintended most recent pregnancy is lowest among women who reported no marital control by their husbands (21%) and highest among those who reported higher marital control by their husbands (28.2%).)

Current work status of women – Women's current work status (working or non-working) can be viewed as an important proxy of their economic freedom and position in the family. Working women who earn money and also enjoy higher decision making power in reproductive health issues (e.g. use of contraceptives, number and timing of child etc.) than the non-working women. Table 5.2 reflects that among the working women those who informed their most recent pregnancy as unintended is 22.8 percent which rises to 24 percent among the non-working women.

Wealth index – The women from wealthy families are supposed to be more educated and health conscious than the women from poor families. The women who are rich also have better access to modern health facilities; so they will be less likely to face unintended pregnancy than the women from poor families. According to the bivariate analysis, 24.6 percent women from the poorest group reported their most recent pregnancy as unintended while 18.1 percent women from the richest category reported the same.

Other factor

Regions in India – All the regions of India are not similar in terms of economic development or socio-cultural context. For example, the female autonomy is remarkably low in north India than in the south. Government policies and programmes regarding women's health also vary from

Table 5.2
Percentage of ever married women age15-49 who reported their most recent pregnancy as unintended by selected background characteristics and Pearson's Chi square results

Background characteristics	Sample size (Unweighted)	% of women with unintended most recent pregnancy	χ^2	Sig.
Age of women				
15-19 years	2899	17.3	365.76	.000
20-29 years	25173	21.4		
30-49 years	11283	31.7		
Number of surviving children				
No surviving child	2541	11.5	977.25	.000
Only 1 son	5744	13.6		
Only 1 daughter	5437	12.1		
At least 2 children	25633	29.2		
Use of contraceptive methods				
Never used	16414	19.4	220.85	.000
Used only traditional/ folkloric method	3849	26.7		
Used modern method	19092	27		
Women's highest level of education				
No education	14722	25.5	62.41	.000
Primary	5569	24.5		
Secondary or higher	19063	21.2		
Religion				
Hindu	27677	22.9	101.79	.000
Muslim	6234	29		
Other	5397	18.4		

Contd.

Table 5.2 contd.

Caste/tribe				
SC/ST	12762	23.1	1.59	0.21
Other	25009	23.8		
Marital control by husband				
No control	18300	21	136.52	.000
Lower control	8963	26.3		
Higher control	3307	28.2		
Type of place of residence				
Urban	15623	22.2	11.57	0.001
Rural	23732	24.2		
Current work status of women				
Not working	27876	24	4.87	0.027
Working	11394	22.8		
Wealth index				
Poorest	6455	24.6	128.99	.000
Poorer	6805	26.6		
Middle	7872	25.4		
Richer	8802	22.2		
Richest	9421	18.1		
Regions in India				
Northern	14106	27.7	351.69	.000
Eastern	7484	25.7		
North-eastern	7387	21.3		
Western	4481	15.4		
Southern	5897	17.9		

Source: Computed from unit level data of NFHS-3

Note: The percentages are calculated using sample weight.

Only the women who were currently pregnant or who had given birth in five years preceding the survey were included in the analysis

region to region. The bivariate analysis shows that the highest percentage of women who reported unintended recent pregnancy is from north India (27.7%), followed by the east (25.7%), north-east (21.30%), south (17.9%) and western India (15.4%).¹

5.4. Does spousal violence act as an independent risk factor for unintended pregnancy?

From the bivariate analysis it is clear that spousal violence is positively associated with unintended pregnancy. In this section multivariate logistic regression analyses have been used to show the net impact of spousal violence on unintended pregnancy. Table 5.3 presents four binary logistic regression models (already explained in methodology section, pp-13) predicting the probability of a woman reporting her most recent pregnancy as unintended. Odds ratios greater than one indicate a positive relationship between the independent variables and the probability of experiencing unintended pregnancy, and odds ratio less than one indicate a negative relationship. Controlling for all the explanatory variables, if spousal violence significantly increases women's probability of facing unintended pregnancy in these models, then, we can say that violence by husband acts as an independent risk factor for women's unintended pregnancy.

For binary logistic regression analysis the operational definition of dependent and independent variables are given below:

Dependent variable

Pregnancy intention of women (here, pregnancy refers to the most recent one)

0 – Intended

1 – Unintended

Explanatory variables

Domestic violence

1. Women's experience of spousal violence

0 – Never experienced violence

1 – Only physical violence

2 – Only sexual violence

3 – Both physical and sexual violence

Demographic and fertility related variables

2. Age of women

1 – 15 to 19 years

2 – 20 to 29 years

- 3 – 30 to 49 years
- 3. Number of surviving children
 - 0 – No surviving child
 - 1 – Only 1 son
 - 2 – Only 1 daughter
 - 3 – At least 2 surviving children
- 4. Use of contraceptive methods (either women or their husband ever used any method)
 - 0 – No
 - 1 – Traditional/folkloric
 - 2 – Modern method

Socio-economic variables

- 5. Women's highest level of education
 - 0 – No education
 - 1 – Primary
 - 2 – Secondary or higher
- 6. Religion
 - 1 – Hindu
 - 2 – Muslim
 - 3 – Other
- 7. Caste/tribe
 - 1 – Scheduled caste (SC)/ Scheduled tribe (ST)
 - 2 – Other (Non SC/ST)
- 8. Marital control by husband
 - 1 – No control
 - 2 – Lower control
 - 3 – Higher control
- 9. Type of place of residence
 - 1 – Urban
 - 2 – Rural

10. Current work status of women

0 – Not working

1 – Working

11. Wealth index

1 – Poorest

2 – Poorer

3 – Middle

4 – Richer

5 – Richest

Other factor

12. Regions in India

1 – Northern

2 – Eastern

3 – North-eastern

4 – Western

5 – Southern

Model 1 reveals that those who experienced only physical violence by their husband are significantly more likely to face unintended most recent pregnancy than the women who had never experienced violence (OR 1.44, $p < .001$). Those who faced only sexual violence are also significantly more likely to report unintended most recent pregnancy than the never abused women (OR 1.51, $p < .001$). However, the chances of having unintended pregnancy is highest among those who experienced both the physical and sexual violence. In model 2, after adding the demographic and fertility related variables, the odd ratios of having unintended recent pregnancy for physical violence, sexual violence and for both physical and sexual violence become 1.30 ($p < .001$), 1.58 ($p < .001$) and 1.61 ($p < .001$), respectively. It indicates that controlling for demographic and fertility related variables, abused women are more likely to face unintended pregnancy than the non-abused women. This finding is also applicable for Model 3 (where socioeconomic variables have been added as control along with demographic and fertility related variables).

In the final model (Model 4) after covariate adjustment (which also includes regions in India) it is found that, compared with those who never experienced violence, the chances of reporting the most recent pregnancy as unintended is higher for those who experience only physical violence (OR 1.23, $p < .001$), only sexual violence (OR 1.37, $p < .001$) and both physical and sexual violence (OR 1.38, $p < .001$). Thus all the four models depict that those who have experienced

Table 5.3
Logistic regression results for women's reporting of their
most recent pregnancy as unintended, India, 2005-06

Background characteristics	Odds ratio (Model 1)	Odds ratio (Model 2)	Odds ratio (Model 3)	Odds ratio (Model 4)
Women's experience of spousal violence				
No ®				
Only physical	1.44***	1.30***	1.23***	1.23***
Only sexual	1.51***	1.58***	1.45***	1.37**
Both physical and sexual	1.80***	1.61***	1.44***	1.38***
Age of women				
15-19 years ®				
20-29 years		0.73***	0.83**	0.82**
30-49 years		0.83**	0.98	0.95
Number of surviving children				
No surviving child ®				
Only 1 son		1.19	1.15	1.16
Only 1 daughter		1.20*	1.18	1.18
At least 2 children		2.81***	2.53***	2.54***
Use of contraceptive methods				
Never used ®				
Used only traditional/ folkloric method		0.85***	1.16**	1.11*
Used modern method		0.91*	1.28***	1.29***
Women's highest level of education				
No education ®				
Primary			1.21***	1.22***
Secondary or higher			1.19***	1.24***

Contd.

Table 5.3 contd.

Religion				
Hindu ®				
Muslim			1.31***	1.29***
Other			1.37***	1.26***
Caste/tribe				
SC/ST ®				
Other			0.93*	0.95
Marital control by husband				
No control ®				
Lower control			1.19***	1.18***
Higher control			1.30***	1.31***
Type of place of residence				
Urban ®				
Rural			0.92*	0.89**
Current work status of women				
Not working ®				
Working			0.82***	0.84***
Wealth index				
Poorest ®				
Poorer			1.085	1.09
Middle			1	1
Richer			0.82***	0.83**
Richest			0.62***	0.63***
Regions in India				
Northern ®				
Eastern				0.94
North-eastern				1.04
Western				0.59***
Southern				0.77***
N	30543	30543	29245	29245
-2 Log likelihood	32799.90	31954.4	30227.1	30097.81
Nagelkerke R ²	0.011	0.052	0.067	0.074

Note: *p < .05, **p < .01, ***p < .001;

® = reference category

Source: Computed from unit level data of NFHS-3

spousal violence are significantly more likely to report unintended pregnancy than those who haven't.

Therefore, our fifth hypothesis that “women who are physically or sexually abused by their husbands have higher chances of experiencing unintended pregnancy than the non-abused women”, has been proved.

5.4. Other findings from logistic regression analyses

The findings presented in this section are mainly based on Model 4. Let us first discuss about the demographic and fertility-related variables. Women in age group 20-29 years are significantly less likely to experience unintended recent pregnancy than the women in age group 15-19 years. Interestingly, in bivariate relationship the lowest unintended pregnancy was found among the youngest women (15-19 years old), but in the logistic regression analysis, this age group showed the highest risk of experiencing unintended pregnancy. This paradox was also found in a study from Ecuador (Goicolea and Sebastian, 2010). It may be because when the number of children was controlled, young women already with a child were found to prefer not to have had the last pregnancy compared to the older ones. Considering the number of surviving children, we have found that it is the number of surviving children that is significantly associated with unintended pregnancy, rather than the sex of the surviving child. However, another study from India (Begum et al, 2010; Stephenson et al, 2008) noted that the number of surviving sons is positively associated with the experience of unintended pregnancy but it did not take into account the number of surviving children and their sex together under one variable.

The present analysis shows that, those who ever used traditional/folkloric/modern methods of contraceptives are more likely to suffer from unintended pregnancy than who never used contraceptives (See Model 3 and 4). Similar finding is depicted by a number of studies from the developing countries (Okonofua et al., 1999; Eggleston, 1999; Magadi, 2003; Jaeni, McDonald and Utomo, 2007; Shaheen et al., 2007; Begum et al., 2010). This indicates that contraceptive failure is an important cause behind unintended pregnancy. However in model 2, when socioeconomic variables were not added as control, it is found that women who had ever used any method of contraceptives are less likely to suffer from unintended recent pregnancy than who never used any method. Therefore, it can be said that socioeconomic factors have far more important impact on unintended pregnancy than the use of contraception.

Among the socio-cultural variables, level of education of the women, religion, marital control by husbands, and type of place of residence are found to be significantly associated with women's experience of recent unintended pregnancy. The final logistic regression model shows that controlling for other variables, educated women are significantly more likely to face unintended pregnancy than the women with no education. Similar findings are depicted by Okonofua et al. (1999) and Begum et al. (2010). Rural women are found less likely to report unintended pregnancy than the women residing in urban areas. Therefore it may be said that due to greater consciousness, the frequency of reporting an unintended pregnancy is higher among educated women residing at urban areas. Muslim and women from 'Other' religious category are significantly more likely to report their recent pregnancy as unintended, than the Hindu women but no significant association between Caste/Tribe and unintended recent pregnancy is observed. After covariate adjustment, it is noted that women who reported higher marital control by their husband are significantly more likely to experience unintended recent pregnancy than those who reported no marital control.

Considering the economic variables, it is found that working women are significantly less likely to experience unintended pregnancy than the non-working women. Controlling for other variables, women from richer and richest wealth quintile are significantly less likely to face unintended pregnancy than the women of poorest quintile.

Finally, it is found that after covariate adjustment, women from western and southern India are significantly less likely to face unintended recent pregnancy than the north Indian women. The relationship is not significant for other regions.

In conclusion it can be said that unintended pregnancy is a major public health concern in the present world and violence within marriage increases the chances of unintended pregnancies. On the other hand it could also be argued that unintended pregnancy may lead to domestic violence. However, several studies found that the majority of women who suffered spousal physical and sexual violence during pregnancy reported that abuse had begun before they got pregnant (Helton, McFarlane and Anderson, 1987; Ellsberg et al, 2000; Castro, Peek-Asa and Ruiz, 2003). Saltzman et al. (2003) and Taylor and Nabors (2009) in their studies found lower rate of abuse during pregnancy than before pregnancy. These findings indicate that spousal violence may act as a cause to unintended pregnancy rather than the effect. As unintended

pregnancies are associated with a number of adverse health outcomes of women and their children, and impose economic burden on the society, appropriate measures are required to prevent unintended pregnancy. This holistic approach must entail reproductive health care and violence prevention programme together to enhance women's power of fertility regulation.

End Note

¹ In this analysis several states are clubbed together to form one region (See Chapter 3, pp.65-66).

CHAPTER 6

CONCLUSION

Domestic violence, the most prevalent but relatively hidden form of violence against women, is a health, economic, developmental and human rights problem. It is a manifestation of unequal power relation between men and women within home and legitimized by the society and the state.

A growing body of research has documented that domestic violence has profound impact on reproductive health and reproductive behaviour of women. Various studies have recognized that domestic violence is associated with unwanted pregnancies, restricted access to contraceptives, and increased level of sexually transmitted diseases (STDs) including HIV/AIDS. Violence has also been linked with persistent gynaecological problems, delayed entry into antenatal care, pregnancy complications, increased risk of miscarriages and abortions, and maternal deaths. Therefore domestic violence is regarded as an obstacle to women's reproductive and sexual health.

In India, some researchers have tried to explore the consequences of domestic violence on women's reproductive health, but these studies were mostly executed at the micro level, and therefore, cannot be generalized for the whole of India. To fill this gap, the present study has examined the relationship between domestic violence and reproductive health outcomes of the women in India using the data from a nationally representative sample survey.

Though domestic violence is associated with various reproductive health problems, due to time and data constraints, we have restricted our analysis in determining the relationship between domestic violence and three important aspects of women's reproductive health, namely, women's experience of sexually transmitted infections, utilization of ANC and unintended pregnancy. For the analyses, spousal violence was regarded as the key independent variable and women's experience of STI/ STI symptoms, utilization of at least three ANC, and women's experience of the most recent pregnancy as unintended were used as three separate dependent variables. Cross tabulations and Pearson's Chi-square test were used to obtain a preliminary idea of the relationship between the dependent and independent variables. With the help of multivariate logistic regressions, after controlling the demographic, socioeconomic and regional

factors, the net impact of spousal violence on these three reproductive health aspects of women (dependent variables) has been analyzed. The analyses are based on the dataset of National Family Health Survey (NFHS)-3 conducted in 2005-06.

6.1. Key findings

This study highlights the magnitude of the problem of spousal violence among the women of reproductive age group in India. It also reflects that unintended pregnancy and women's experience of STI are prevalent in India affecting millions of adolescent and adult married women. It reveals the fact that despite various initiatives taken by the government, almost one fourth of women in India do not receive any antenatal care and 45 percent women do not receive ANC in their first trimester which has a detrimental effect on maternal and child health.

The pathways through which experience of physical, sexual and emotional violence within marriage compromises reproductive health outcomes and behaviours of women are beyond our scope of analysis; but the present study has undoubtedly proved that reproductive health of Indian women is significantly associated with their experience of spousal violence, even after controlling for a range of demographic and socioeconomic background characteristics. Domestic violence acts as an independent risk factor for unintended pregnancies and women's experience of sexually transmitted infections. It also acts as a deterrent factor for women's utilization of antenatal care. Therefore, it is obvious that prevention of marital violence will improve the reproductive health status of women. It will enhance women's power to regulate their fertility and reduce the extent of unwanted pregnancy. This will further contribute to the diminution of abortion related morbidity and mortality. Prevention of violence will increase the utilization of antenatal care which helps in the reduction of maternal morbidity, mortality and poor birth outcomes. It will also contribute in arresting and reducing sexually transmitted infections among women. Therefore, for better health and well-being of women and their children and for the benefit of the whole society, domestic violence must be prevented. The programmes that are intended to improve reproductive health of women will not succeed if they do not consider violence against women. For example, STD prevention programmes that emphasize only on a reduction in numbers of sexual partners and use of condoms may fail to

achieve their intended goals, because women who are victims of violence or threats of violence are often not able to negotiate and enforce these strategies.

Besides the examination of the relationship between domestic violence and reproductive health outcomes of women, this study have also analyzed the influence of various background characteristics and risk factors influencing women's experience of STIs, unintended pregnancy and utilization of antenatal care. Understanding of these factors will help in effective policy making and successful interventions regarding reproductive health care of Indian women.

The present study has revealed that the husband's recent positive STI/STI status and more than one lifetime sexual partner of the wife significantly increase women's risk of experiencing STIs. Therefore, if STIs among husbands is prevented, it will help in the reduction of women's risk to STIs. Awareness campaigning regarding the risk of multiple sexual partners is necessary particularly in the context of present HIV/AIDS epidemics.

From the analyses it is found that higher age act as a protecting factor for women against unintended pregnancy and the risk of sexually transmitted infections. The utilization of ANC services is also higher among the older women (30-49 years). Perhaps, it is because women acquire greater autonomy with growing age in Indian society. On the other hand, women in the age group 15-19 years are the most vulnerable. So they require special assistance and proper counseling on reproductive health issues.

Another finding of this study is that, as the number of living children increases, the chances of reporting the most recent pregnancy as unintended, also increases. It essentially indicates that many women wanted to avoid higher order birth but they were unable to do so. Lack of access to modern contraceptive methods or contraceptive failure is the key reason for it. Proper family planning services can help women to avoid unwanted birth and regulate birth interval.

Muslim women are significantly more likely to experience unintended pregnancy and STI/STI symptoms and less likely to receive at least 3 ANC than the Hindu women. However, contrary to our expectation, the caste/tribe factor does not show significant relationship with any of these three reproductive health aspects.

This study also reveals that exposure to mass media has a positive effect on utilization of ANC by the mothers. So, mass media is an important tool that can be used to send message to people about benefits of use of contraceptives and the disadvantages of VAW.

One of the major findings of this study is that when socioeconomic factors are controlled for, those who ever used traditional/folkloric/modern methods of contraceptives are more likely to suffer from unintended pregnancy than those who never used contraceptives. Also, the condom users, the sterilized women and the users of other methods of contraception have a significantly greater likelihood of reporting a recent STI/STI symptom than currently non users of contraception. This indicates that an important cause behind unintended pregnancy is contraceptive failure and contraceptive discontinuation which also increase women's risk to sexually transmitted diseases. While lack of knowledge of effective use of contraception may lead to contraceptive failure, lack of self restrain and violence/fear of violence from the husband can lead to contraceptive discontinuation. Family planning programme that is intended to provide quality services and information about contraceptive methods and prevention of spousal violence will contribute to the effective utilization of contraceptives which in turn reduce the problem of unintended pregnancy and women's risk of STIs.

After covariate adjustment, it is found that education has a significant positive impact on women's utilization of ANC but it is not significantly associated with women's experience of STIs. However, educated women are more likely to report their most recent pregnancy as unintended, than women who have no education. Therefore, the relation between reproductive health outcomes of women and education is a complex one. Unlike education, wealth index has a consistent relation with the reproductive health status of women under study. Women from richer and the richest quintile are significantly more likely to receive at least three antenatal care and less likely to experience unintended pregnancy and STIs than the women from the poorest quintile. This indicates that substantial rise in income will also increase the reproductive health status of women.

From the analysis it is evident that regional factor has a strong effect on the reproductive health status of women. Reproductive health status of women in terms of all the three indicators of this study is much better in south and western India than the north. Women belonging to the east and the north-east are also less likely to report recent STIs and more likely to utilize ANC

than the women belonging to the north. It is because India is a vast country with diverse culture. For example, female powerlessness is much more acute in north India than in the south manifested in freedom of movement, inheritance rights in practice or bond with natal family after marriage (Jejeebhoy, 1998). Besides local health facilities, state government's initiative to improve reproductive health status of women etc. also vary from region to region. However, as it is evident from the analyses that the reproductive health status of women is the worst in north India, this region requires special initiatives and programmes to meet the reproductive health needs of these women.

6.2. Recommendations

1. The problem of spousal violence, unintended pregnancy, women's experience of STIs and lower utilization of ANC – all have enormous public health implications. To combat all these problems, a holistic approach is needed that must entail reproductive health care and violence prevention programmes together.
2. It is necessary to change the negative perceptions of men about family planning, particularly about condom use through community outreach programmes. It will help in the reduction of unintended pregnancy, women's risk to STIs and domestic violence. Such programmes can be used to discuss the disastrous effects of sexual risk-taking behaviours, raise awareness against gender-based violence, and educate men about reproductive health needs of women. Also reproductive health programmes should involve young men as it is easy to change their perceptions than the older people.
3. As poor people are more likely to experience reproductive health problems, measures are required for reduction of poverty and to improve the general standard of living of the population.
4. More attention should be paid to the special population groups who are particularly vulnerable to various reproductive health problems (e.g., young women aged 15-19 years, Muslim women).
5. Mass media must be gender sensitive and vigorously utilized for building a culture of non-violence, to make people aware about the danger of domestic violence and unprotected sex, and to provide information about reproductive health care of men and women (e.g. why ANC is necessary, methods of self screening of STIs etc.).

6. As the reproductive health problems of the women are acute in some parts of the country, therefore, governments of those states/regions are required to formulate special policies and programme to meet reproductive health needs of women of those areas. Cooperative endeavor is also necessary among the state governments, the central government and the non-governmental organizations for better implementations of those programmes.
7. Qualitative research is needed to understand the specific pathways through which violence affects various reproductive health outcomes and behaviours. More research is necessary on the prevalence, causes and consequences of domestic violence to bring out the threats it poses to human and economic development. It will help in raising consciousness among people against domestic violence and mobilizing government officials and authorities to formulate effective policies and laws to prevent it.
8. As most women visit a health care provider for reproductive and child health services at some point in their life, the service providers can integrate three or four screening questions to identify the victims of domestic violence. The service providers can provide a supportive environment to the abused women, offer counseling and treatment, document injuries, refer their clients to legal assistance and support services. Therefore, training is needed to strengthen service provider's skills in probing women's experiences sensitively and maintaining their confidentiality; at the same time efforts must be made to change provider's perceptions that marital violence is 'normal' and a family affair. Also health care providers must be made aware of the laws related to VAW and the sources of support available to women for domestic violence (e.g., shelter, NGOs etc.). Proper documentation of violence by the service providers is needed to identify the prevalence of domestic violence in a community.
9. Community health workers and other influential health providers can conduct discussions with the community members about the causes and consequences of spousal violence, unintended pregnancies and other reproductive health issues. It will be helpful in reducing these problems. ASHAs and ICDS workers should be made aware of the links between domestic violence and health and survival outcomes for women and trained to support women experiencing marital violence.

Finally, it can be said that marital violence and reproductive health status of women are intrinsically related. Prevention of domestic violence will improve reproductive health

status of women; and reproductive health care providers can play a leading role in the prevention of domestic violence. However, as long as the traditional gender norms persist, where men are seen as the controlling authority over women, violence against women will continue and women's reproductive health and reproductive rights will be compromised. So, intervention is necessary to change the way men and women view unequal gender relations as "normal".

Appendix 1.1
Violence against Women throughout the Life Cycle

Phase	Type of violence
Pre-birth	Sex-selective abortion, battering during pregnancy (effects on the women and birth outcome)
Infancy	Female infanticide; neglect (health care, nutrition)
Girlhood/Childhood	Child marriage; female genital mutilation; physical, sexual and psychological abuse by family members and strangers; child prostitution and pornography; differential access to food, education and healthcare; confinement
Adolescence*	Dating and courtship violence (e.g. acid throwing, date rape); economically coerced sex (African secondary school girls having to take up with “sugar daddies” to afford school fees); molestation, sexual harassment; rape; forced prostitution and pornography; trafficking; kidnapping and abduction; differential access to food, education and healthcare; restriction on mobility
Reproductive age	Intimate partner violence; rape including marital rape; sexual abuse at workplace; sexual harassment; forced prostitution and pornography; trafficking; dowry related abuse and murder; honour killing; forced pregnancy; forced marriage; partner homicide; psychological and physical abuse by family members; differential access to food, education and healthcare; restriction on mobility
Elderly	Abuse of widows; elder abuse (affecting women more than men); threat of sexual violence; neglect; denial of access to resources, food, medical care etc.

Note: * Examples quoted pertain to unmarried adolescents

Source: adapted from Heise, Pitanguy and Germain, 1994; Watts and Zimmerman, 2002 and ICRW, 2004

Appendix 1.2

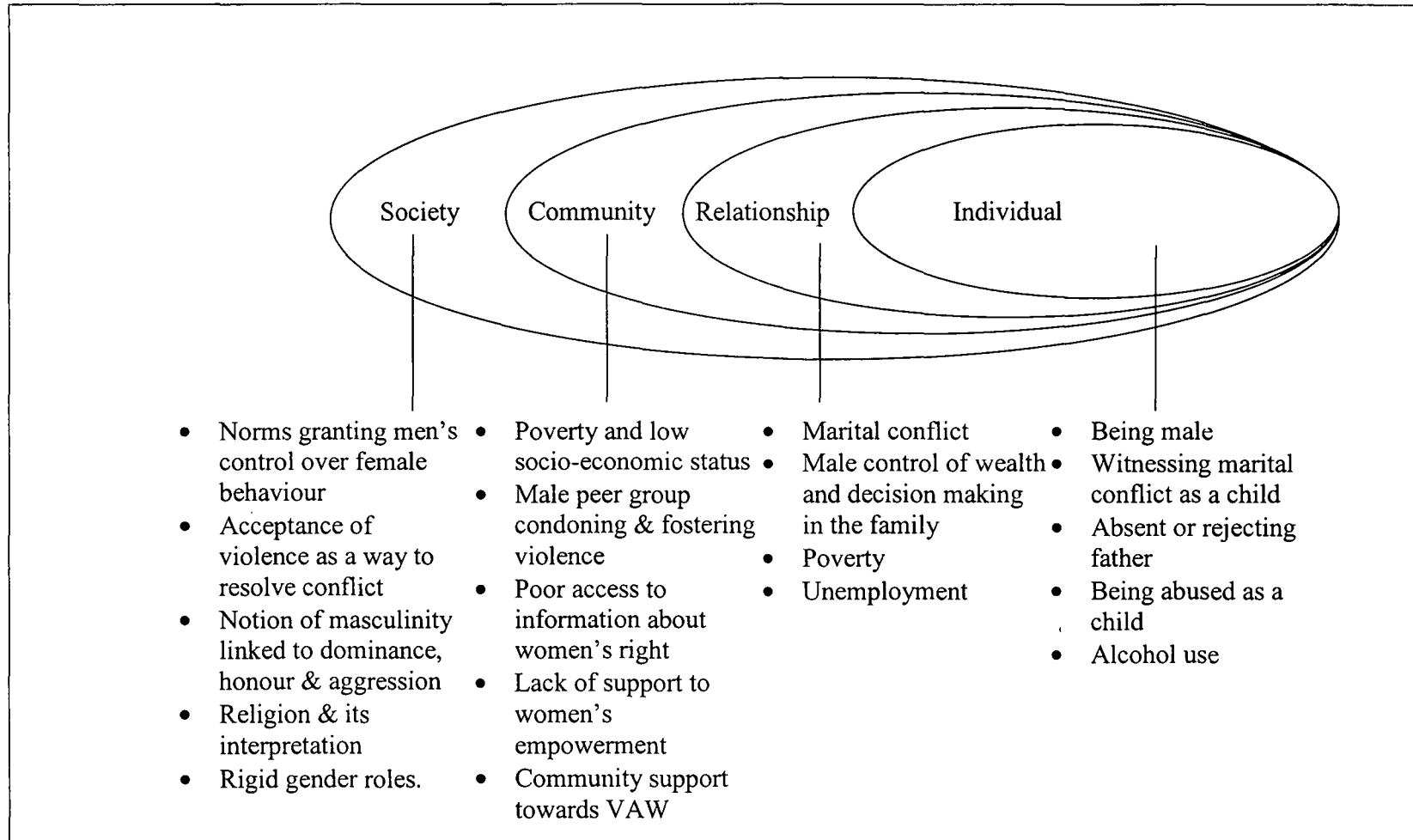
Different forms of violence according to the nature of violent acts

Physical abuse	Psychological/ Emotional	Sexual Coercion	Controlling behaviour/ Deprivation
Physical assaults and threats used to control another person	Mistreatment and undermining self worth of another person results in making that person more dependent and frightened by the abuser	Physical force or non-physical coercion to compel women to have sex against their will	Results from the power relationship and discrimination especially due to patriarchal norms
<ul style="list-style-type: none"> • Punching • Hitting • Choking • Burns • Beating • Throwing objects at the person • Kicking and pushing • Using weapons such as knife, sickle and rod to hurt 	<ul style="list-style-type: none"> • Criticism • Threats • Insults • Passing belittling comments 	<ul style="list-style-type: none"> • Forced penetration-rape • Sexual assaults-forced sexual contact • Sexual molestation • Intimidation to force women for sexual act • Forced marriage 	<ul style="list-style-type: none"> • Refusing a person to work outside home • Financial control • Isolating the person • Monitoring their movements • Restricting access to information

Source: National Commission for Women in Violence against women: A Health System Response

Appendix 1.3

Ecological model of factors associated with domestic violence



Source: Adapted from Heise 1998, OXFAM, 2004

Appendix 1.4
Percentage of ever-married women of age 15-49 experiencing physical violence
by current or the most recent husband, India, 2005-2006

State/Country	Experienced any physical violence		No of Women (Unweighted)
	No	Yes	
Jammu and Kashmir	88.5	11.5	1443
Himachal Pradesh	94.0	6.0	1704
Punjab	75.6	24.4	1918
Uttaranchal	72.7	27.3	1604
Haryana	74.5	25.5	1578
Delhi	83.8	16.2	1892
Rajasthan	59.7	40.3	2242
Uttar Pradesh	58.8	41.2	6504
Bihar	44.0	56.0	2086
Sikkim	86.1	13.9	1119
Arunachal Pradesh	62.9	37.1	944
Nagaland	85.5	14.5	2041
Manipur	59.5	40.5	2170
Mizoram	77.1	22.9	937
Tripura	59.1	40.9	1099
Meghalaya	87.6	12.4	1039
Assam	63.3	36.7	2260
West Bengal	67.3	32.7	4026
Jharkhand	65.3	34.7	1720
Orissa	66.6	33.4	2579
Chhattisgarh	70.8	29.2	2093
Madhya Pradesh	55.9	44.1	3802
Gujarat	74.3	25.7	2227
Maharashtra	69.4	30.6	5128
Andhra Pradesh	65.0	35.0	4277
Karnataka	80.4	19.6	3451
Goa	83.1	16.9	1691
Kerala	84.9	15.1	1983
Tamil Nadu	58.1	41.9	3836
India	64.9	35.1	69393

Source: National Family Health Survey (NFHS) – 3

Note: The percentages are computed by applying sample weight.

Appendix 1.5

Percentage of ever-married women of age 15-49 experiencing sexual violence by current or the most recent husband, India, 2005-2006

State/Country	Experienced any sexual violence		No of Women (Unweighted)
	No	Yes	
Jammu and Kashmir	96.1	3.9	1442
Himachal Pradesh	98.1	1.9	1705
Punjab	92.8	7.2	1918
Uttaranchal	94.1	5.9	1607
Haryana	93.0	7.0	1578
Delhi	97.9	2.1	1893
Rajasthan	79.8	20.2	2242
Uttar Pradesh	90.7	9.3	6505
Bihar	80.7	19.3	2093
Sikkim	94.4	5.6	1119
Arunachal Pradesh	90.3	9.7	944
Nagaland	97.1	2.9	2041
Manipur	86.2	13.8	2175
Mizoram	97.9	2.1	937
Tripura	81.1	18.9	1102
Meghalaya	98.6	1.4	1039
Assam	85.4	14.6	2261
West Bengal	78.8	21.2	4026
Jharkhand	87.6	12.4	1721
Orissa	85.3	14.7	2582
Chhattisgarh	93.0	7.0	2093
Madhya Pradesh	89.0	11.0	3802
Gujarat	92.6	7.4	2228
Maharashtra	98.0	2.0	5134
Andhra Pradesh	96.0	4.0	4279
Karnataka	96.0	4.0	3452
Goa	97.6	2.4	1693
Kerala	95.2	4.8	1985
Tamil Nadu	96.8	3.2	3836
India	90.0	10.0	69432

Source: National Family Health Survey (NFHS) – 3

Note: The percentages are computed by applying sample weight.

Appendix 1.6
Percentage of ever-married women of age 15-49 experiencing emotional violence
by current or the most recent husbands, India, 2005-2006

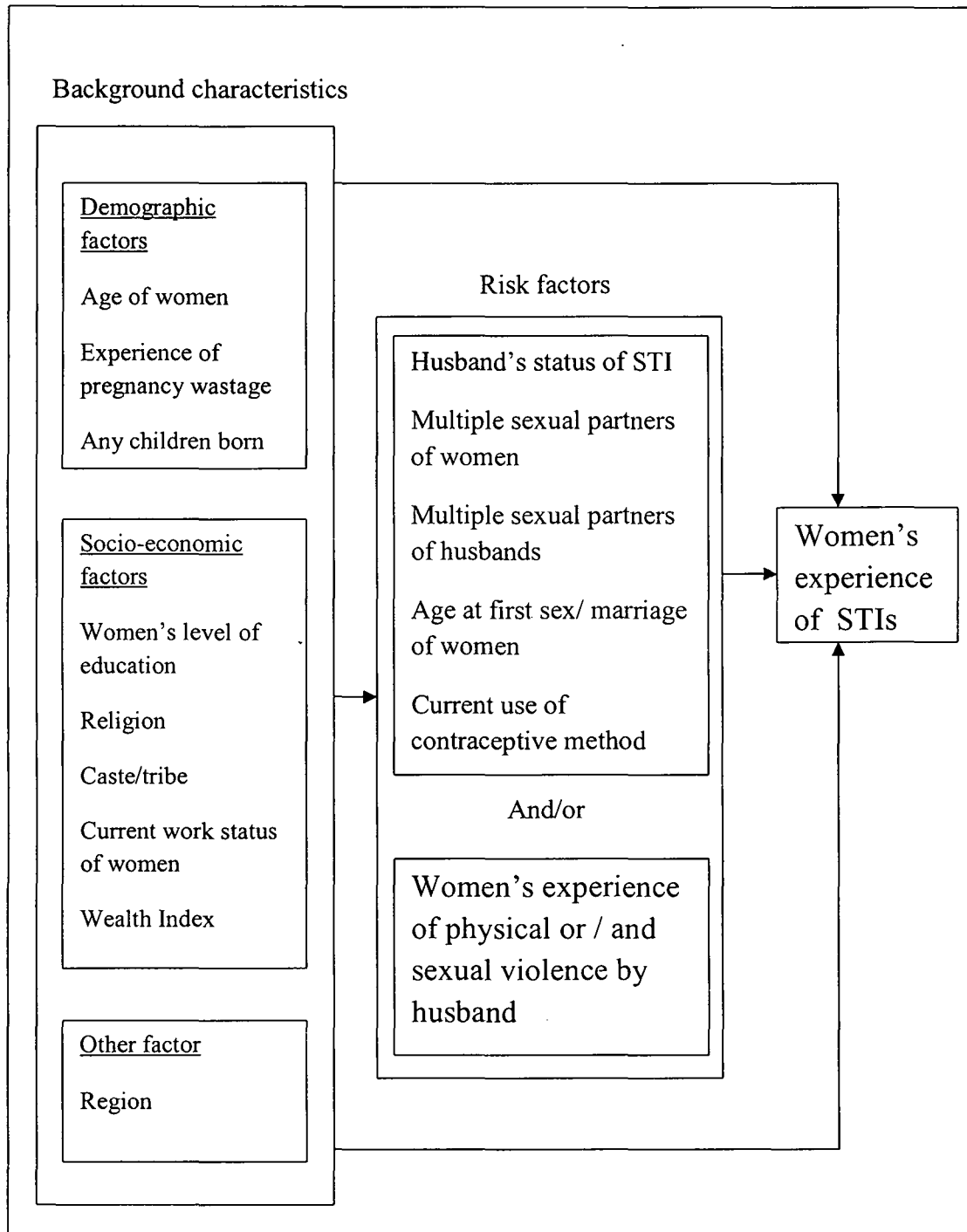
State/Country	Experienced any emotional violence		No of Women (Unweighted)
	No	Yes	
Jammu and Kashmir	91.1	8.9	1443
Himachal Pradesh	96.2	3.8	1705
Punjab	89.3	10.7	1918
Uttaranchal	91.2	8.8	1607
Haryana	91.3	8.7	1578
Delhi	95.2	4.8	1892
Rajasthan	77.1	22.9	2242
Uttar Pradesh	83.9	16.1	6505
Bihar	80.2	19.8	2095
Sikkim	88.9	11.1	1119
Arunachal Pradesh	83.9	16.1	942
Nagaland	87.0	13.0	2041
Manipur	86.2	13.8	2175
Mizoram	89.6	10.4	937
Tripura	77.4	22.6	1102
Meghalaya	92.8	7.2	1039
Assam	84.4	15.6	2261
West Bengal	87.7	12.3	4026
Jharkhand	82.0	18.0	1721
Orissa	80.2	19.8	2582
Chhattisgarh	87.3	12.7	2093
Madhya Pradesh	77.5	22.5	3802
Gujarat	81.5	18.5	2228
Maharashtra	82.5	17.5	5134
Andhra Pradesh	86.7	13.3	4279
Karnataka	91.9	8.1	3452
Goa	88.0	12.0	1693
Kerala	89.9	10.1	1985
Tamil Nadu	83.1	16.9	3836
India	84.2	15.8	69432

Source: National Family Health Survey (NFHS) – 3

Note: The percentages are computed by applying sample weight.

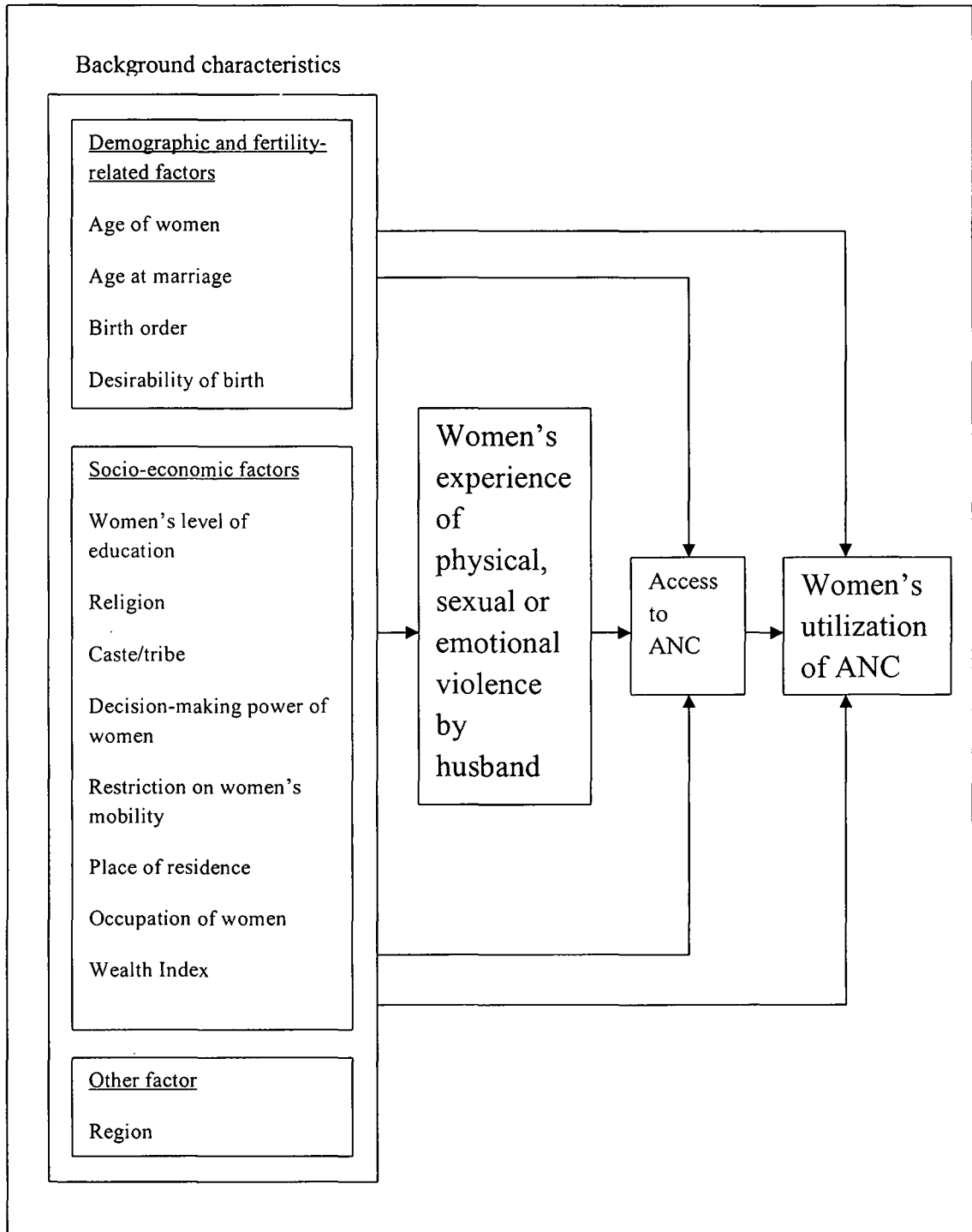
Appendix 1.7

A conceptual framework showing the factors associated with married women's experience of STIs



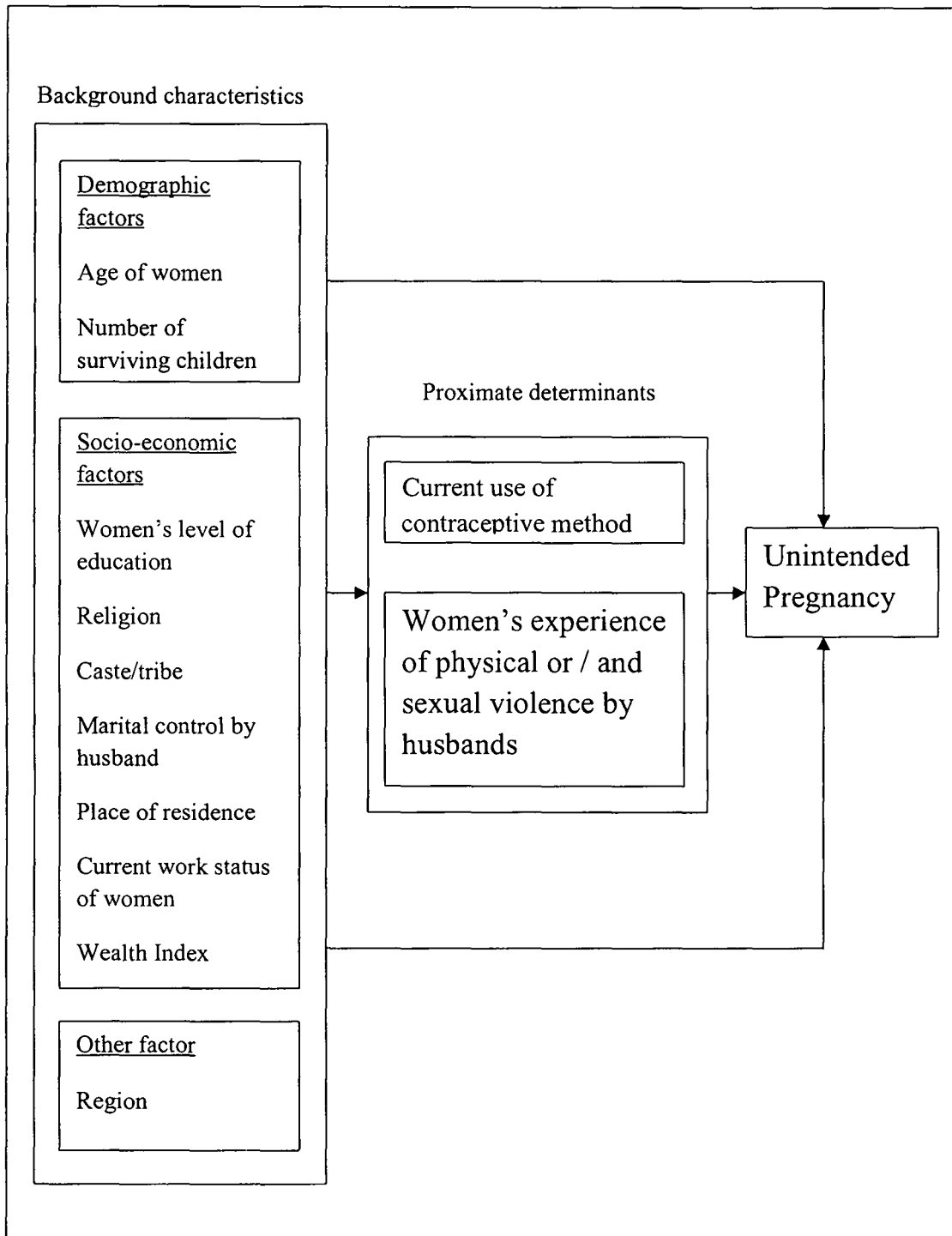
Appendix 1.8

A conceptual framework showing the factors affecting utilization of ANC



Appendix 1.9

A conceptual framework showing the factors associated with unintended pregnancy



Appendix – 3.1

Among women and men age 15-49 who ever had sexual intercourse, percentage reporting having an STI and/or symptoms of an STI in the past 12 months, by state, India, 2005-06

State/Country	% of women who reported that in the past 12 months they had a STI/genital discharge/sore or ulcer	% of men who reported that in the past 12 months they had a STI/genital discharge/sore or ulcer
Jammu and Kashmir	9.4	4.3
Himachal Pradesh	4.3	4.6
Punjab	9.1	3.0
Uttaranchal	10.7	4.7
Haryana	8.4	1.6
Delhi	8.2	4.5
Rajasthan	15.1	7.0
Uttar Pradesh	14.6	4.1
Bihar	16.9	4.7
Sikkim	9.0	3.8
Arunachal Pradesh	9.0	4.7
Nagaland	3.5	1.8
Manipur	7.8	6.7
Mizoram	11.2	0.9
Tripura	15.9	9.8
Meghalaya	3.7	3.9
Assam	24.7	7.2
West Bengal	13.4	11.3
Jharkhand	13.8	6.2
Orissa	5.2	8.7
Chhattisgarh	10.4	2.7
Madhya Pradesh	23.2	6.1
Gujarat	12.2	6.3
Maharashtra	4.6	2.6
Andhra Pradesh	3.1	1.7
Karnataka	2.9	0.5
Goa	2.3	2.1
Kerala	10.9	3.5
Tamil Nadu	4.0	1.1
India	11.1	4.7

Source: NFHS-3, India: Volume I, pp.357

Appendix 3.2: Description of the women and their husbands included in the analysis

Characteristics	Figures in %	No of couples (unweighted)
Women having STI/STI symptom in past 12 months		39045
No	90.4	
Yes	9.6	
Women's lifetime experience of spousal violence		30398
No	63.7	
Only physical	28.6	
Only sexual	1.4	
Both physical and sexual	6.2	
Physical or sexual violence	36.3	
Women's experience of violence in last 12 months by husband		30398
No	76.7	
Only physical	17.4	
Only sexual	1.9	
Both physical and sexual	3.9	
Physical or sexual violence	23.3	
Husbands having STI/STI symptom in past 12 months		38769
No	96.7	
Yes	3.3	
Number of lifetime sexual partner of women		38956
1	98.7	
More than 1	1.3	
Number of lifetime sexual partner of husbands		38942
1	81.2	
More than 1	18.8	
Women's age at first marriage (excludes married gauna not performed)		39045
<18 years	59.2	
18 years and above	40.8	
Current use of contraceptive method		39045
Not using any method	38.9	
Condom	5.7	
Female sterilization	41.9	
Other methods	13.6	
Age of women		39045
15-24 years	23.7	
25-34 years	40.5	
35-49 years	35.8	

Contd.

Appendix 3.2 contd.

Experience of pregnancy wastage		39042
No	81.8	
Yes	18.2	
Any children born		39045
No	8.8	
Yes	91.2	
Highest level of education of women		39044
No education	46.7	
Primary	15.2	
Secondary & above	38.1	
Religion		39030
Hindu	83.5	
Muslim	11.3	
Other	5.1	
Caste/Tribe		38043
SC/ST	27.6	
Other	72.4	
Type of place of residence		39045
Urban	33.2	
Rural	66.8	
Current work status of the women		38974
Not working	60.1	
Working	39.9	
Wealth Index		39045
Poorest	17.2	
Poorer	19.7	
Middle	21.7	
Richer	20.9	
Richest	20.5	
Regions in India		39045
Northern	33.4	
Eastern	14.7	
Northeastern	2.5	
Western	17.4	
Southern	32.0	

Source: Computed from unit level data of NFHS-3

Note: The percentages are computed by applying sample weight

Appendix 3.3
Percentage of currently married women age 15-49 who reported an STI or symptoms of an STI in 12 months preceding the survey according to background characteristics and Pearson's Chi square results

Background characteristics	Sample size (Unweighted)	% women with STI	χ^2	Sig.
Husband having STI/STI symptom in last 12 months				
No	37598	9.4	45.63	.000
Yes	1171	16.1		
No of lifetime sexual partner of women				
1	38273	9.5	55.91	.000
More than 1	683	21.0		
No of lifetime sexual partner of husband s				
1	32247	9.5	4.28	.039
More than 1	6695	10.4		
Women's age at first marriage (excludes married gauna not performed)				
<18 years	19584	10.3	23.92	.000
18 years and above	19461	8.6		
Current use of contraceptive method				
Not using any method	15435	9.5	141.99	.000
Condom	2719	13.1		
Female sterilization	14708	7.9		
Other methods	6183	13.8		
Age of women				
15-24 years	8340	10.1	21.45	.000
25-34 years	16109	10.3		
35-49 years	14596	8.6		
Experience of pregnancy wastage				
No	31763	8.7	123.05	.000
Yes	7279	13.7		
Any children born				
No	3538	8.9	1.76	.185
Yes	35507	9.7		
Women's highest level of education				
No education	14793	11.7	167.85	.000
Primary	5990	10.2		
Secondary & above	18261	6.8		

Contd.

Appendix 3.3 contd.

Religion				
Hindu	29325	9.0	168.02	.000
Muslim	4671	15.8		
Other	5034	6.9		
Caste/Tribe				
SC/ST	11456	10.3	8.47	.004
Other	26587	9.2		
Current work status of women				
Not working	24412	9.9	3.01	.083
Working	14562	9.3		
Wealth Index				
Poorest	4491	13.4	185.17	.000
Poorer	6069	11.4		
Middle	7898	9.8		
Richer	9521	7.3		
Richest	11066	7.0		
Regions in India				
Northern	11866	14.9	878.56	.000
Eastern	4460	13.3		
Northeastern	6266	18.0		
Western	5750	6.5		
Southern	10703	3.5		

Source: Computed from unit level data of NFHS-3

Note: The percentages are calculated using sample weight

Appendix 3.4
Logistic regression results for currently married women* experiencing
STI/STI symptoms in last 12 months, India, 2005-06

Background Characteristic	B	S.E.	Wald	df	Sig	Exp (B)
Women's lifetime experience of spousal violence						
No ®			295.858	3	.000	
Only physical	.662	.049	181.873	1	.000	1.938
Only sexual	.476	.165	8.368	1	.004	1.610
Both physical and sexual	1.054	.073	209.510	1	.000	2.869
Husbands having STI symptom in past 12 months						
No ®						
Yes	.231	.105	4.842	1	.028	1.260
Number of lifetime sexual partner of women						
1 ®						
More than 1	.457	.127	12.962	1	.000	1.579
Number of lifetime sexual partner of husbands						
1 ®						
More than 1	.094	.056	2.842	1	.092	1.099
Women's age at first marriage (excludes married gauna not performed)						
<18 years ®						
18 years and above	-.015	.049	.095	1	.758	.985
Current use of contraceptive method						
Not using ®			42.676	3	.000	
Condom	.389	.087	19.974	1	.000	1.475
Female sterilization	.291	.059	24.371	1	.000	1.337
Other methods	.337	.064	27.377	1	.000	1.401
Age of the woman						
15-24 years ®			17.191	2	.000	
25-34 years	-.054	.061	.787	1	.375	.947
35-49 years	-.242	.069	12.461	1	.000	.785
Experience of pregnancy wastage						
No ®						
Yes	.370	.050	53.974	1	.000	1.447
Any children born						
No ®						
Yes	-.087	.091	.913	1	.339	.916

Contd.

Appendix 3.4 contd.

Women's highest level of education						
No education ®			1.367	2	.505	
Primary	.067	.066	1.029	1	.310	1.069
Secondary & above	-.007	.063	.011	1	.916	.993
Religion						
Hindu ®			24.475	2	.000	
Muslim	.305	.067	20.740	1	.000	1.357
Other	-.139	.083	2.810	1	.094	.870
Caste/Tribe						
SC/ST ®						
Other	.019	.052	.131	1	.718	1.019
Type of place of residence						
Urban ®						
Rural	.100	.054	3.377	1	.066	1.105
Current work status of women						
Not working ®						
Working	.004	.047	.008	1	.930	1.004
Wealth index						
Poorest ®			12.911	4	.012	
Poorer	-.078	.073	1.128	1	.288	.925
Middle	-.125	.076	2.692	1	.101	.883
Richer	-.235	.084	7.774	1	.005	.791
Richest	-.338	.099	11.570	1	.001	.713
Regions in India						
Northern			262.763	4	.000	
Eastern	-.172	.067	6.483	1	.011	.842
Northeastern	-.300	.074	16.429	1	.000	.741
Western	-.637	.077	68.828	1	.000	.529
Southern	-1.071	.068	244.773	1	.000	.343
Constant	-2.359	.122	372.370	1	.000	.094

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

*Women who have ever experienced violence are considered for this analysis

Appendix 3.5
Logistic regression results for currently married women experiencing
STI/STI symptoms in last 12 months, India, 2005-06
(Model 1 – Full model)

Background Characteristic	B	S.E.	Wald	df	Sig	Exp (B)
Women's experience of spousal violence in last 12 months						
No ®			496.461	3	.000	
Only physical	.718	.050	209.941	1	.000	2.050
Only sexual	.888	.125	50.698	1	.000	2.430
Both physical and sexual	1.418	.076	343.995	1	.000	4.127
Constant	-2.626	.026	10329.925	1	.000	.072

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 3.6
Logistic regression results for currently married women experiencing
STI/STI symptoms in last 12 months, India, 2005-06
(Model 2 – Full model)

Background Characteristic	B	S.E.	Wald	df	Sig	Exp (B)
Women's experience of spousal violence in last 12 months						
No ®			441.109	3	.000	
Only physical	.710	.050	199.427	1	.000	2.034
Only sexual	.819	.126	42.476	1	.000	2.267
Both physical and sexual	1.348	.078	300.117	1	.000	3.848
Husbands having STI/ STI symptoms in past 12 months						
No ®						
Yes	.390	.102	14.671	1	.000	1.477
Number of lifetime sexual partner of women						
1 ®						
More than 1	.528	.122	18.651	1	.000	1.696
Number of lifetime sexual partner of the husbands						
1 ®						
More than 1	.093	.054	3.011	1	.083	1.098
Women's age at first marriage (excludes married gauna not performed)						
<18 years ®						
18 years and above	-.261	.043	36.657	1	.000	.770
Current use of contraceptive method						
Not using ®			77.827	3	.000	
Condom	.425	.080	27.927	1	.000	1.530
Female sterilization	-.065	.050	1.693	1	.193	.937
Other methods	.361	.058	38.152	1	.000	1.434
Constant	-2.612	.045	3368.843	1	.000	.073

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 3.7
Logistic regression results for currently married women experiencing
STI/STI symptoms in last 12 months, India, 2005-06
(Model 3 – Full model)

Background Characteristic	B	S.E.	Wald	df	Sig	Exp (B)
Women's experience of spousal violence in last 12 months						
No ®			317.439	3	.000	
Only physical	.644	.052	152.773	1	.000	1.903
Only sexual	.652	.134	23.779	1	.000	1.919
Both physical and sexual	1.204	.081	219.093	1	.000	3.333
Husbands having STI/STI symptoms in past 12 months						
No ®						
Yes	.342	.105	10.655	1	.001	1.408
Number of lifetime sexual partner of women						
1 ®						
More than 1	.523	.126	17.141	1	.000	1.687
Number of lifetime sexual partner of husbands						
1 ®						
More than 1	.065	.055	1.387	1	.239	1.067
Women's age at first marriage (excludes married gauna not performed)						
<18 years ®						
18 years and above	-.075	.048	2.398	1	.121	.928
Current use of contraceptive method						
Not using ®			75.216	3	.000	
Condom	.565	.086	43.273	1	.000	1.760
Female sterilization	.050	.056	.786	1	.375	1.051
Other methods	.405	.064	40.394	1	.000	1.499
Age of women						
15-24 years ®			6.248	2	.044	
25-34 years	.035	.060	.338	1	.561	1.036
35-49 years	-.092	.068	1.835	1	.176	.912
Experience of pregnancy wastage						
No ®						
Yes	.453	.050	82.986	1	.000	1.574

Contd.

Any children born						
No ®						
Yes	-.002	.091	.000	1	.983	.998
Women's highest level of education						
No education ®			10.800	2	.005	
Primary	-.063	.064	.958	1	.328	.939
Secondary & above	-.199	.061	10.679	1	.001	.819
Religion						
Hindu ®			29.158	2	.000	
Muslim	.317	.066	22.952	1	.000	1.373
Other	-.171	.076	5.041	1	.025	.843
Caste/Tribe						
SC/ST ®						
Other	-.034	.051	.435	1	.509	.967
Type of place of residence						
Urban ®						
Rural	.138	.054	6.580	1	.010	1.148
Current work status of women						
Not working ®						
Working	-.084	.047	3.216	1	.073	.920
Wealth Index						
Poorest ®			17.690	4	.001	
Poorer	-.130	.072	3.244	1	.072	.878
Middle	-.224	.074	9.212	1	.002	.799
Richer	-.311	.082	14.210	1	.000	.733
Richest	-.373	.097	14.733	1	.000	.689
Constant	-2.545	.117	475.087	1	.000	.078

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 3.8
Logistic regression results for currently married women experiencing
STI/STI symptoms in last 12 months, India, 2005-06
(Model 4 – Full model)

Background Characteristic	B	S.E.	Wald	df	Sig	Exp (B)
Women's experience of spousal violence in last 12 months						
No ®			310.372	3	.000	
Only physical	.689	.053	171.638	1	.000	1.992
Only sexual	.512	.135	14.484	1	.000	1.669
Both physical and sexual	1.156	.082	198.235	1	.000	3.177
Husbands having STI/STI symptoms in past 12 months						
No ®						
Yes	.225	.105	4.546	1	.033	1.252
Number of lifetime sexual partner of women						
1 ®						
More than 1	.433	.127	11.607	1	.001	1.542
Number of lifetime sexual partner of husbands						
1 ®						
More than 1	.098	.056	3.082	1	.079	1.103
Women's age at first marriage (excludes married gauna not performed)						
<18 years ®						
18 years and above	-.042	.049	.731	1	.392	.959
Current use of contraceptive method						
Not using ®			41.599	3	.000	
Condom	.386	.087	19.673	1	.000	1.471
Female sterilization	.286	.059	23.639	1	.000	1.332
Other methods	.333	.064	26.590	1	.000	1.394
Age of women						
15-24 years ®			9.288	2	.010	
25-34 years	-.013	.061	.047	1	.829	.987
35-49 years	-.161	.069	5.461	1	.019	.852
Experience of pregnancy wastage						
No ®						
Yes	-.061	.091	.444	1	.505	.941

Contd.

Any children born						
No ®						
Yes	.411	.050	67.156	1	.000	1.508
Women's highest level of education						
No education ®			1.391	2	.499	
Primary	.059	.066	.800	1	.371	1.060
Secondary & above	-.020	.063	.107	1	.744	.980
Religion						
Hindu ®			26.837	2	.000	
Muslim	.311	.067	21.566	1	.000	1.365
Other	-.169	.083	4.133	1	.042	.844
Caste/Tribe						
SC/ST ®						
Other	.005	.052	.008	1	.927	1.005
Type of place of residence						
Urban ®						
Rural	.089	.054	2.672	1	.102	1.093
Current work status of women						
Not working ®						
Working	.022	.047	.224	1	.636	1.023
Wealth quintile						
Poorest ®			15.031	4	.005	
Poorer	-.075	.073	1.053	1	.305	.927
Middle	-.123	.076	2.624	1	.105	.884
Richer	-.232	.084	7.573	1	.006	.793
Richest	-.367	.099	13.650	1	.000	.693
Regions in India						
Northern			294.871	4	.000	
Eastern	-.218	.068	10.428	1	.001	.804
Northeastern	-.351	.074	22.481	1	.000	.704
Western	-.687	.077	80.380	1	.000	.503
Southern	-1.136	.069	274.945	1	.000	.321
Constant	-2.276	.121	351.149	1	.000	.103

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 4.1

Among ever-married women age 15-49 who had given birth in last 3 years, percentage who received any ANC and at least 3 ANC for their most recent child birth, by state, India, 2005-06

State/Country	% of women having any ANC	% of women having at least 3 ANC	No of Women (Unweighted)
Jammu and Kashmir	84.5	74.5	616
Himachal Pradesh	91.0	66.7	482
Punjab	90.9	73.4	640
Uttaranchal	73.7	46.7	619
Haryana	89.2	58.0	629
Delhi	92.2	76.0	626
Rajasthan	75.5	41.1	1021
Uttar Pradesh	66.8	25.7	3495
Bihar	33.0	16.7	1171
Sikkim	88.9	66.7	355
Arunachal Pradesh	54.5	38.1	404
Nagaland	56.7	32.3	1041
Manipur	86.7	71.1	1066
Mizoram	76.5	58.8	419
Tripura	77.6	56.9	350
Meghalaya	65.0	51.7	556
Assam	69.8	36.1	807
West Bengal	93.1	62.3	1224
Jharkhand	60.6	35.6	837
Orissa	88.7	61.0	943
Chhattisgarh	88.7	55.4	816
Madhya Pradesh	80.3	41.5	1495
Gujarat	87.5	68.9	775
Maharashtra	93.3	78.3	1614
Andhra Pradesh	95.9	87.4	1147
Karnataka	91.2	79.9	1118
Goa	100.0	95.0	547
Kerala	100.0	99.7	541
Tamil Nadu	99.2	96.9	902
India	76.7	51.1	26256

Source: National Family Health Survey (NFHS) – 3

Note: The percentages are computed by applying sample weight.

Appendix 4.2

Among ever-married women age 15-49 who had given birth in last 3 years, percentage who received ANC in the first trimester for their most recent child birth, by state, India, 2005-06

State/Country	% of women who received ANC in their first trimester	No of Women (Unweighted)
Jammu and Kashmir	67.4	522
Himachal Pradesh	62.0	433
Punjab	64.9	581
Uttaranchal	61.6	452
Haryana	56.5	556
Delhi	68.5	566
Rajasthan	47.7	780
Uttar Pradesh	40.1	2389
Bihar	51.8	442
Sikkim	62.5	326
Arunachal Pradesh	41.7	233
Nagaland	50.0	662
Manipur	74.4	944
Mizoram	53.8	309
Tripura	53.3	279
Meghalaya	46.2	400
Assam	52.8	578
West Bengal	39.7	1144
Jharkhand	57.0	529
Orissa	55.1	825
Chhattisgarh	54.7	727
Madhya Pradesh	50.5	1269
Gujarat	61.7	670
Maharashtra	67.3	1527
Andhra Pradesh	73.3	1095
Karnataka	78.8	1013
Goa	89.5	538
Kerala	92.8	538
Tamil Nadu	77.2	895
India	56.8	21222

Source: National Family Health Survey (NFHS) – 3

Note: The percentages are computed by applying sample weight.

Appendix 4.3
Among ever-married women age 15-49 who had given birth in last 3 years,
percentage who experienced different types of violence, by state, India, 2005-06

State/Country	% of women experiencing physical violence	% of women experiencing sexual violence	% of women experiencing emotional violence	% of women experiencing physical, sexual or emotional violence
Jammu and Kashmir	9.9	3.8	8.1	13.8
Himachal Pradesh	5.2	1.3	2.6	6.5
Punjab	24.3	8.6	10.7	26.6
Uttaranchal	24.1	6.6	8.0	26.3
Haryana	21.7	6.5	6.3	24.8
Delhi	16.8	2.8	5.6	17.8
Rajasthan	39.3	20.7	21.7	50.7
Uttar Pradesh	44.2	10.7	18.1	48.0
Bihar	61.0	21.4	20.9	66.5
Sikkim	11.1	0.0	11.1	22.2
Arunachal Pradesh	40.9	9.1	14.3	45.5
Nagaland	13.3	3.2	13.3	22.6
Manipur	37.8	15.6	13.3	44.4
Mizoram	23.5	0.0	11.8	23.5
Tripura	41.4	22.0	25.9	49.2
Meghalaya	13.3	1.7	6.7	15.0
Assam	41.2	17.1	17.3	47.0
West Bengal	32.9	13.4	9.8	43.0
Jharkhand	38.7	14.4	18.9	44.6
Orissa	32.9	17.1	21.4	42.0
Chhattisgarh	26.9	6.7	10.1	29.2
Madhya Pradesh	46.3	12.0	22.8	51.8
Gujarat	24.1	7.7	18.7	32.9
Maharashtra	28.9	1.4	16.5	32.1
Andhra Pradesh	32.7	4.0	12.7	33.4
Karnataka	15.1	3.2	5.8	16.9
Goa	10.5	0.0	10.0	15.0
Kerala	10.5	3.7	7.0	15.8
Tamil Nadu	36.1	2.1	12.2	38.7
India	37.0	11.6	16.1	42.2

Source: National Family Health Survey (NFHS) – 3

Note: The percentages are computed by applying sample weight.

Appendix 4.4

Formulation of the variable 'exposure to mass media'

The variable exposure to mass media has been formulated by combining three media related variables – (1) Frequency of reading newspaper or magazine, (2) Frequency of listening to radio and (3) Frequency of watching television. For all three variables if the answer of the respondent is 'not at all' or 'less than once a week' then it is assigned the score '0' and if the answer is 'at least once a week' or 'almost every day' then it is assigned the score '1'. Thus we get the following scores:

Exposure to mass media	Score
Exposure to newspaper or magazine	0 – No, 1 - Yes
Exposure to radio	0 – No, 1 - Yes
Exposure to television	0 – No, 1 - Yes

Now the score ranges from 0 to 3.

Score value 1 or less = No or lower media exposure

Score value 2 or more = Higher media exposure

Appendix 4.5

Formulation of the variable 'decision making power of women'

The variable women's decision making power has been formulated by combining 4 variables. In each case if the respondent decides alone, then it is scored 1 and for all other answers, the score is assigned as 0.

The 4 variables and their corresponding scores have been shown below:

Variables	Scores
Final say on own health care	Respondent alone – 1, Other response - 0
Final say on making large household purchases	Respondent alone – 1, Other response - 0
Final say on making household purchases for daily needs	Respondent alone – 1, Others response - 0
Final say on visits to family or relatives	Respondent alone – 1, Others response - 0

The score ranges from 0 to 4

Decision making power of women	Score
Low	1 or less
Medium	2
High	3 or more

Appendix 4.6

Formulation of the variable 'restriction on women's mobility'

The variable restriction on women's mobility has been formulated using three variables. In each case if the respondent is allowed to go alone, then it is scored 1 and otherwise the score is assigned as 0.

The three variables and their corresponding scores have been shown below:

Variables	Scores
Allowed to go to market	Alone – 1, Other response - 0
Allowed to go to health facility	Alone – 1, Other response - 0
Allowed to go to places outside the village/community	Alone – 1, Others response - 0

The score ranges from 0 to 3

Restriction on women's mobility	Score
High restriction/low mobility	0
Partial restriction/average mobility	1-2
No restriction/high mobility	3

Appendix 4.7
Percentage of ever married women age 15-49 who had given birth in last three years preceding the survey according to demographic and socioeconomic characteristics

Background characteristics	% of women	Sample size (unweighted)
Age of women		
15 - 19	9.7	26258
20 - 29	69.9	
30 - 49	20.5	
Women's age at marriage		
Less than 18 years	58.6	26258
18 years and above	41.4	
Birth order of the last child		
1	29.2	26258
2 to 3	44.7	
4 and above	26.1	
Desirability of the last birth		
Wanted then	72.7	26256
Wanted later	10.7	
Wanted no more	11.6	
Women's highest level of education		
No education	47.9	26257
Primary	13.7	
Secondary and above	38.4	
Religion		
Hindu	78.5	26229
Muslim	16.6	
Other	4.9	
Caste/tribe		
SC/ST	31.0	25223
Other	69.0	
Exposure to mass media		
No/lower exposure	76.7	26221
Higher exposure	23.3	
Decision making power of women		
Low	84.7	25888
Medium	10.3	
High	5.0	

Contd.

Appendix 4.7 contd.

Restriction on women's mobility		
High restriction	52.0	26244
Partial restriction	22.6	
No restriction	25.4	
Type of place of residence		
Urban	25.5	26258
Rural	74.5	
Occupation of women		
Not working	65.4	26238
Primary sector	24.0	
Other sector mainly service sector	10.6	
Wealth index		
Poorest	25.2	26258
Poorer	21.9	
Middle	19.5	
Richer	18.4	
Richest	15.1	
Regions in India		
Northern	40.1	26258
Eastern	27.7	
North-eastern	3.9	
Western	12.4	
Southern	15.9	

Source: Computed from unit level data of NFHS-3

Note: The percentages are calculated using sample weight

Appendix 4.8
Logistic regression results for women's utilization of at least three ANC, India, 2005-06
Full Model – Model 1

Background characteristics	B	S.E.	Wald	df	Sig.	Exp(B)
Experience of spousal violence (physical, sexual or emotional)						
No (R)						
Yes	-.669	.030	509.258	1	.000	.512
Constant	.581	.018	999.398	1	.000	1.789

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 4.9
Logistic regression results for women's utilization of at least three ANC, India, 2005-06
Full Model – Model 2

Background characteristics	B	S.E.	Wald	df	Sig.	Exp(B)
Experience of spousal violence (physical, sexual or emotional)						
No (R)						
Yes	-.403	.032	158.741	1	.000	0.668
Age of women						
15 - 19 (R)			96.958	2	.000	
20 - 29	.529	.065	66.710	1	.000	1.697
30 - 49	.764	.078	96.897	1	.000	2.146
Women's age at marriage (excludes married gauna not performed)						
Less than 18years (R)						
18 years and above	.655	.034	372.672	1	.000	1.925
Birth order of the last child						
1	1.673	.054	975.392	1	.000	5.325
2 to 3	1.141	.042	725.165	1	.000	3.131
4 and above (R)			1048.194	2	.000	
Desirability of the last birth						
Wanted then	.175	.052	11.345	1	.001	1.191
Wanted later	.176	.068	6.791	1	.009	1.193
Wanted no more (R)			11.508	2	.003	
Constant	-1.525	.085	325.395	1	.000	.218

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 4.10
Logistic regression results for women's utilization of at least three ANC, India, 2005-06
Full Model – Model 3

Background characteristics	B	S.E.	Wald	df	Sig.	Exp(B)
Experience of spousal violence (physical or sexual or emotional)						
No (R)						
Yes	-.202	.036	30.630	1	.000	.817
Age of women						
15 - 19 (R)			15.337	2	.000	
20 - 29	.197	.072	7.407	1	.006	1.217
30 - 49	.336	.088	14.607	1	.000	1.399
Age at marriage (excludes married gauna not performed)						
Less than 18years (R)						
18 years and above	.162	.040	16.673	1	.000	1.175
Birth order of the last child						
1	.994	.061	262.592	1	.000	2.701
2 to 3	.599	.048	153.051	1	.000	1.821
4 and above (R)		267.323	2	.000		
Desirability of the last birth						
Wanted then			22.718	2	.000	
Wanted later	.264	.058	20.598	1	.000	1.302
Wanted no more (R)	.153	.076	4.077	1	.043	1.165
Women's highest level of education						
No education (R)			350.928	2	.000	
Primary	.528	.050	111.320	1	.000	1.696
Secondary and above	.847	.046	336.755	1	.000	2.333
Religion						
Hindu (R)			127.026	2	.000	
Muslim	-.217	.052	17.418	1	.000	.805
Other	-.586	.055	115.123	1	.000	.556
Caste/tribe						
SC/ST (R)						
Other	.068	.040	2.896	1	.089	1.071
Exposure to mass media						
No/low exposure(R)						
Higher exposure	.485	.047	107.759	1	.000	1.624
Decision making power of women						
Low (R)			7.712	2	.021	
Medium	.025	.055	.214	1	.644	1.026
High	.206	.074	7.696	1	.006	1.228

Contd.

Appendix 4.10 contd.

Restriction on women's mobility						
High restriction (R)			79.672	2	.000	
Partial restriction	.292	.044	44.869	1	.000	1.340
No restriction	.360	.044	67.483	1	.000	1.433
Type of place of residence						
Urban	.369	.043	73.221	1	.000	1.446
Rural(R)						
Occupation of women						
Not working (R)			10.660	2	.005	
Primary sector	-.059	.046	1.655	1	.198	.943
Other sector (mainly service sector)	.146	.055	7.020	1	.008	1.157
Wealth index						
Poorest (R)			426.362	4	.000	
Poorer	.247	.054	20.802	1	.000	1.280
Middle	.585	.056	110.910	1	.000	1.796
Richer	.993	.063	249.111	1	.000	2.700
Richest	1.548	.083	346.799	1	.000	4.704
Constant	-2.100	.106	394.098	1	.000	.122

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 4.11
Logistic regression results for women's utilization of at least three ANC, India, 2005-06
Full Model – Model 4

Background characteristics	B	S.E.	Wald	df	Sig.	Exp(B)
Ever experienced spousal violence (physical or sexual or emotional)						
No (R)						
Yes	-.144	.038	14.465	1	.000	0.866
Age of women						
15 - 19 (R)			22.770	2	.000	
20 - 29	.255	.075	11.495	1	.001	1.291
30 - 49	.427	.091	21.858	1	.000	1.533
Age at marriage (excludes married gauna not performed)						
Less than 18years (R)						
18 years and above	.177	.041	18.636	1	.000	1.194
Birth order of the last child						
1	.911	.064	205.299	1	.000	2.486
2 to 3	.481	.050	91.956	1	.000	1.618
4 and above (R)			205.320	2	.000	
Desirability of the last birth						
Wanted then	.245	.060	16.507	1	.000	1.277
Wanted later	.166	.079	4.464	1	.035	1.180
Wanted no more (R)			17.309	2	.000	
Women's highest level of education						
No education (R)			216.158	2	.000	
Primary	.453	.052	75.217	1	.000	1.573
Secondary and above	.694	.048	205.431	1	.000	2.001
Religion						
Hindu (R)			47.670	2	.000	
Muslim	-.164	.055	8.966	1	.003	.849
Other	-.412	.064	41.603	1	.000	.662
Caste/tribe						
SC/ST (R)						
Other	.010	.042	.055	1	.814	1.010
Exposure to mass media						
No/low exposure(R)						
Higher exposure	.449	.048	86.047	1	.000	1.567

Contd.

Appendix 4.11 contd.

Decision making power of women						
Low (R)			.402	2	.818	
Medium	.012	.057	.041	1	.839	1.012
High	.048	.077	.385	1	.535	1.049
Restriction on women's mobility						
High restriction (R)			64.219	2	.000	
Partial restriction	.287	.046	39.486	1	.000	1.333
No restriction	.331	.046	52.628	1	.000	1.393
Type of place of residence						
Urban	.265	.045	34.849	1	.000	1.304
Rural(R)						
Occupation of women						
Not working (R)			14.131	2	.001	
Primary sector	-.133	.048	7.868	1	.005	.875
Other sector (mainly service sector)	.105	.057	3.362	1	.067	1.110
Wealth index						
Poorest (R)			485.924	4	.000	
Poorer	.248	.057	19.125	1	.000	1.281
Middle	.624	.059	111.497	1	.000	1.867
Richer	1.091	.067	266.414	1	.000	2.976
Richest	1.773	.088	405.431	1	.000	5.886
Regions in India						
Northern (R)			966.085	4	.000	
Eastern	.569	.050	128.336	1	.000	1.767
North-eastern	.263	.058	20.684	1	.000	1.301
Western	1.083	.067	257.636	1	.000	2.954
Southern	2.067	.072	822.037	1	.000	7.901
Constant	-2.500	.113	490.096	1	.000	.082

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 4.12
Logistic regression results for women's utilization of ANC, India, 2005-06

Background characteristics	B	S.E.	Wald	df	Sig.	Exp(B)
Ever experienced spousal violence (physical or sexual or emotional)						
No (R)						
Yes	-.167	.042	15.525	1	.000	0.85
Age of women						
15 - 19 (R)			7.236	2	.027	
20 - 29	.219	.088	6.139	1	.013	1.244
30 - 49	.277	.104	7.090	1	.008	1.319
Age at marriage (excludes married gauna not performed)						
Less than 18years (R)						
18 years and above	.210	.048	19.339	1	.000	1.234
Birth order of the last child						
1	.924	.075	151.974	1	.000	2.519
2 to 3	.501	.053	89.739	1	.000	1.650
4 and above (R)			163.529	2	.000	
Desirability of the last birth						
Wanted then	.211	.060	12.220	1	.000	1.235
Wanted later	.268	.086	9.679	1	.002	1.307
Wanted no more (R)			13.849	2	.001	
Women's highest level of education						
No education (R)			246.785	2	.000	
Primary	.616	.061	101.191	1	.000	1.851
Secondary and above	.902	.062	209.787	1	.000	2.464
Religion						
Hindu (R)			101.525	2	.000	
Muslim	-.274	.060	20.825	1	.000	.760
Other	-.695	.074	88.319	1	.000	.499
Caste/tribe						
SC/ST (R)						
Other	-.085	.047	3.199	1	.074	.919
Exposure to mass media						
No/low exposure(R)						
Higher exposure	.502	.069	52.900	1	.000	1.652
Decision making power of women						
Low (R)			1.354	2	.508	
Medium	.004	.065	.004	1	.952	1.004
High	-.098	.086	1.313	1	.252	.906

Contd.

Appendix 4.12 contd.

Restriction on women's mobility						
High restriction (R)			12.495	2	.002	
Partial restriction	.182	.052	12.287	1	.000	1.200
No restriction	.099	.053	3.532	1	.060	1.104
Type of place of residence						
Urban	.132	.057	5.415	1	.020	1.141
Rural(R)						
Occupation of women						
Not working (R)			16.137	2	.000	
Primary sector	-.109	.050	4.877	1	.027	.896
Other sector (mainly service sector)	.181	.067	7.240	1	.007	1.199
Wealth index						
Poorest (R)			237.728	4	.000	
Poorer	.242	.055	19.581	1	.000	1.274
Middle	.528	.062	71.698	1	.000	1.695
Richer	.975	.079	150.907	1	.000	2.650
Richest	1.685	.128	172.499	1	.000	5.392
Regions in India						
Northern (R)			272.090	4	.000	
Eastern	.007	.053	.016	1	.900	1.007
North-eastern	-.258	.067	14.644	1	.000	.773
Western	.867	.099	76.807	1	.000	2.380
Southern	1.254	.100	157.109	1	.000	3.504
Constant	-.440	.121	13.277	1	.000	.644

N = 19198; -2 Log likelihood = 14948.14; Nagelkerke R Square = .313

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 4.13

Logistic regression results for women's utilization of ANC in the first trimester, India, 2005-06

Background characteristics	B	S.E.	Wald	df	Sig.	Exp(B)
Experience of spousal violence (physical, sexual or emotional)						
No (R)						
Yes	-.108	.039	7.711	1	.005	.898
Age of the women						
15 - 19 (R)			7.583	2	.023	
20 - 29	.137	.077	3.122	1	.077	1.146
30 - 49	.245	.093	6.887	1	.009	1.278
Age at marriage (excludes married gauna not performed)						
Less than 18years (R)						
18 years and above	.169	.042	16.451	1	.000	1.185
Birth order of the last child						
1	.544	.065	69.946	1	.000	1.722
2 to 3	.227	.053	18.095	1	.000	1.255
4 and above (R)			76.520	2	.000	
Desirability of the last birth						
Wanted then	.125	.064	3.785	1	.052	1.133
Wanted later	.015	.081	.035	1	.851	1.015
Wanted no more (R)			6.719	2	.035	
Women's highest level of education						
No education (R)			50.753	2	.000	
Primary	.069	.055	1.558	1	.212	1.071
Secondary and above	.342	.050	46.505	1	.000	1.407
Religion						
Hindu (R)			22.436	2	.000	
Muslim	-.076	.056	1.857	1	.173	.927
Other	-.295	.064	21.463	1	.000	.744
Caste/tribe						
SC/ST (R)						
Other	.154	.042	13.316	1	.000	1.166
Exposure to mass media						
No/low exposure(R)						
Higher exposure	.273	.045	37.323	1	.000	1.314
Decision making power of women						
Low (R)			2.674	2	.263	
Medium	-.064	.056	1.311	1	.252	.938
High	-.100	.077	1.685	1	.194	.905

Contd.

Appendix 4.13 contd.

Restriction on women's mobility						
High restriction (R)			16.339	2	.000	
Partial restriction	.086	.046	3.545	1	.060	1.090
No restriction	.184	.046	16.339	1	.000	1.202
Type of place of residence						
Urban	.135	.044	9.441	1	.002	1.144
Rural(R)						
Occupation of women						
Not working (R)			.804	2	.669	
Primary sector	-.026	.051	.266	1	.606	.974
Other sector (mainly service sector)	.034	.055	.383	1	.536	1.035
Wealth index						
Poorest (R)			198.742	4	.000	
Poorer	-.118	.063	3.472	1	.062	.889
Middle	.153	.064	5.664	1	.017	1.166
Richer	.349	.070	24.735	1	.000	1.417
Richest	.929	.085	119.526	1	.000	2.533
Regions in India						
Northern (R)			289.713	4	.000	
Eastern	.204	.053	14.675	1	.000	1.226
North-eastern	.348	.059	34.488	1	.000	1.416
Western	.398	.061	43.082	1	.000	1.489
Southern	.973	.058	282.220	1	.000	2.647
Constant	-1.176	.117	101.645	1	.000	.308

N = 15301; -2 Log likelihood = 18172.635; Nagelkerke R Square = .191

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 5.1
Among ever-married women of age 15-49 who were currently pregnant or who had given birth in five years preceding the survey, percentage who reported their most recent pregnancy as unintended, by state, India, 2005-2006

State/Country	% of women experiencing most recent pregnancy as unintended		No of Women (Unweighted)
	No	Yes	
Jammu and Kashmir	72.7	27.3	933
Himachal Pradesh	83.8	16.2	803
Punjab	84.4	15.6	978
Uttaranchal	73.5	26.5	936
Haryana	87.1	12.9	941
Delhi	87.8	12.2	968
Rajasthan	79.0	21.0	1446
Uttar Pradesh	63.2	36.8	4907
Bihar	74.7	25.3	1648
Sikkim	71.4	28.6	574
Arunachal Pradesh	79.4	20.6	629
Nagaland	72.5	27.5	1400
Manipur	87.5	12.5	1546
Mizoram	45.8	54.2	613
Tripura	68.8	31.3	566
Meghalaya	55.3	44.7	783
Assam	83.0	17.0	1276
West Bengal	69.7	30.3	1958
Jharkhand	71.1	28.9	1232
Orissa	80.3	19.7	1404
Chhattisgarh	83.2	16.8	1242
Madhya Pradesh	82.0	18.0	2194
Gujarat	79.2	20.8	1175
Maharashtra	87.5	12.5	2449
Andhra Pradesh	84.5	15.5	1818
Karnataka	76.1	23.9	1710
Goa	90.0	10.0	857
Kerala	83.0	17.0	921
Tamil Nadu	85.8	14.2	1448
India	76.3	23.7	39355

Source: Computed from NFHS-3 women's file.

Note: The percentages are calculated using sample weight.

Appendix 5.2
Percentage of ever-married women of age 15-49 experiencing different types of violence by their current or the most recent husband, by state, India, 2005-2006

State/Country	% of women experiencing different types of violence				No of Women (Unweighted)
	Only physical	Only sexual	Both Physical & sexual	Physical or sexual	
Jammu and Kashmir	7.0	1.2	2.9	11.1	683
Himachal Pradesh	3.9	0.8	0.8	5.5	614
Punjab	15.6	0.9	7.4	23.9	721
Uttaranchal	20.0	0.5	6.2	26.7	732
Haryana	18.5	2.6	4.7	25.8	699
Delhi	15.7	0.0	2.1	17.8	792
Rajasthan	27.4	7.0	13.8	48.2	1074
Uttar Pradesh	34.3	1.2	9.2	44.7	3620
Bihar	41.2	3.5	17.4	62.1	1154
Sikkim	7.7	0.0	0.0	7.7	454
Arunachal Pradesh	33.3	0.0	6.1	39.4	522
Nagaland	12.2	2.4	2.4	17.0	1207
Manipur	26.6	4.7	10.9	42.2	1226
Mizoram	20.8	0.0	0.0	20.8	506
Tripura	25.3	3.2	14.7	43.2	459
Meghalaya	10.7	0.0	1.2	11.9	644
Assam	27.1	2.7	13.5	43.3	1079
West Bengal	19.4	8.8	13.6	41.8	1521
Jharkhand	27.1	2.3	11.8	41.2	907
Orissa	21.0	5.5	10.0	36.5	1112
Chhattisgarh	20.6	0.8	6.1	27.5	920
Madhya Pradesh	35.9	1.7	10.3	47.9	1706
Gujarat	18.5	2.2	4.9	25.6	934
Maharashtra	26.3	0.1	1.2	27.6	1901
Andhra Pradesh	28.9	0.1	3.9	32.9	1462
Karnataka	12.9	0.3	2.4	15.6	1295
Goa	10.0	0.0	0.0	10.0	645
Kerala	8.9	1.6	1.6	12.1	665
Tamil Nadu	33.2	0.0	2.0	35.2	1289
India	27.4	2.5	8.6	38.5	30543

Source: Computed from NFHS-3 women's file.

Note: The percentages are calculated using sample weight.

Only the women who were currently pregnant or who had given birth in five years preceding the survey are included in the analysis

Appendix 5.3
Among ever-married women age 15-49, percentage who reported
spousal violence by the act of violence

Act of violence	% of women	No of observation
Pushed/ threw something	13.6	30552
Slapped	35.0	30560
Pulled hair or twisted arm	15.0	30553
Punched	10.8	30560
Kicked, dragged or beat	11.0	30560
Tried to choke or burn	2.0	30560
Threatened with knife/gun	1.0	30558
Forced to sexual intercourse	10.5	30560
Forced to any sexual act	5.0	30560

Source: Computed from NFHS-3 women's file.

Note: The percentages are calculated using sample weight

Only the women who were currently pregnant or who had given birth in five years preceding the survey are included in the analysis

Appendix 5.4
Percentage distribution of ever-married women age 15-49 who had given birth in last five years or were currently pregnant by background characteristics

Characteristics	% of women	No of observation
Pregnancy intention of the most recent pregnancy		
Intended	76.3	39355
Unintended	23.7	
Experience of spousal violence		
No	61.6	30543
Only physical	27.4	
Only sexual	2.5	
Both physical & sexual	8.6	
Age of women		
15-19 years	9.1	39355
20-29 years	65.6	
30-49 years	25.3	
Number of surviving children		
No surviving child	6.4	39355
Only 1 son	14.0	
Only 1 daughter	13.0	
At least 2 children	66.6	
Use of contraceptive methods		
Never used	43.7	39355
Used only traditional/ folkloric method	10.7	
Used modern method	45.6	
Women's highest level of education		
No education	46.6	39354
Primary	13.8	
Secondary or higher	39.7	
Religion		
Hindu	79.0	39308
Muslim	16.2	
Other	4.8	

Contd.

Appendix 5.4 contd.

Type of caste/tribe		
SC/ST	30.5	37771
Other	69.5	
Marital control by husband		
No control	54.9	30570
Lower control	32.5	
Highly controlled	12.6	
Type of place of residence		
Urban	26.9	39355
Rural	73.1	
Current work status of women		
Not working	70.3	39270
Working	29.7	
Wealth index		
Poorest	24.0	39355
Poorer	21.3	
Middle	19.4	
Richer	18.7	
Richest	16.6	
Regions in India		
Northern	38.7	39355
Eastern	27.3	
North-eastern	4.0	
Western	12.8	
Southern	17.2	

Source: Computed from NFHS-3 women's file.

Note: The percentages are calculated using sample weight.

Appendix 5.5

Formulation of the variable 'Marital control index'

The variable marital control by husband has been formulated by combining 6 variables. A woman is asked about the behaviour of her current or the most recent husband in the following situations –

- a. He (is/was) jealous or angry if she talk/talked to other men.
- b. He frequently accuse/accused her of being unfaithful.
- c. He does/did not permit her to meet her female friends.
- d. He tries/tried to limit her contact with her family.
- e. He insists/insisted on knowing where she is/was at all times.
- f. He does/did not trust her with any money.

If the answer of each question is 'yes', then we can say husband controls/controlled the behaviour of the woman. Combining all these variables, NFHS-3 provides a single variable which gives the number of control issues (ranges from 0 to 6) faced by a women. On the basis of that information marital control index has been created.

Marital control index

Marital control by husband	Control issues
No	0
Lower control	1-2
Higher control	3 or more

Appendix 5.6
Logistic regression results for women's reporting of their
most recent pregnancy as unintended, India, 2005-06
Full model – Model 1

Background characteristics	B	S.E.	Wald	df	Sig	Exp(B)
Experience of spousal violence						
No ®			236.751	3	.000	
Only physical	0.361	.031	132.914	1	.000	1.435
Only sexual	0.413	.095	18.679	1	.000	1.511
Both physical and sexual	0.586	.049	140.693	1	.000	1.797
Constant	-1.349	.017	6072.668	1	.000	0.260

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 5.7
Logistic regression results for women's reporting of their
most recent pregnancy as unintended, India, 2005-06
Full model – model 2

Background characteristics	B	S.E.	Wald	df	Sig	Exp(B)
Experience of spousal violence						
No ®			144.255	3	.000	
Only physical	0.264	.032	68.712	1	.000	1.302
Only sexual	0.454	.097	21.779	1	.000	1.575
Both physical and sexual	0.474	.050	89.217	1	.000	1.606
Age of women						
15-19 years ®			33.150	2	.000	
20-29 years	-.310	.068	21.008	1	.000	.734
30-49 years	-.192	.071	7.237	1	.007	.825
Number of surviving children						
No surviving child ®			551.042	3	.000	
Only 1 son	.175	.092	3.648	1	.056	1.192
Only 1 daughter	.183	.092	3.920	1	.048	1.201
At least 2 children	1.032	.084	149.694	1	.000	2.806
Use of contraceptive methods						
Never used ®			29.731	2	.000	
Used only traditional/ folkloric method	-.166	.031	29.269	1	.000	.847
Used modern method	-.097	.048	4.103	1	.043	.907
Constant	-1.791	.094	360.327	1	.000	.167

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 5.8
Logistic regression results for women's reporting of their
most recent pregnancy as unintended, India, 2005-06
Full model – model 3

Background characteristics	B	S.E.	Wald	df	Sig	Exp(B)
Experienced of spousal violence						
No ®			71.454	3	.000	
Only physical	.210	.034	37.187	1	.000	1.233
Only sexual	.372	.102	13.396	1	.000	1.451
Both physical and sexual	.367	.055	44.605	1	.000	1.444
Age of women						
15-19 years ®			31.744	2	.000	
20-29 years	-.187	.070	7.057	1	.008	.829
30-49 years	-.023	.075	.098	1	.755	.977
Number of surviving children						
No surviving child ®			402.850	3	.000	
Only 1 son	.143	.094	2.276	1	.131	1.153
Only 1 daughter	.165	.095	3.003	1	.083	1.179
At least 2 children	.929	.087	112.744	1	.000	2.532
Use of contraceptive methods						
Never used ®			55.415	2	.000	
Used only traditional/ folkloric method	.150	.052	8.379	1	.004	1.162
Used modern method	.249	.034	55.387	1	.000	1.283
Women's highest level of education						
No education ®			25.991	2	.000	
Primary	.186	.044	17.959	1	.000	1.205
Secondary or higher	.172	.040	18.940	1	.000	1.188
Religion						
Hindu ®			85.402	2	.000	
Muslim	.268	.042	40.093	1	.000	1.307
Other	.312	.044	50.826	1	.000	1.366
Type of caste/tribe						
SC/ST ®						
Other	-.076	.034	5.083	1	.024	.927

Contd.

Appendix 5.8 contd.

Marital control by husband						
No control ®			45.716	2	.000	
Lower control	.171	.032	28.025	1	.000	1.187
Higher control	.265	.047	31.466	1	.000	1.304
Type of place of residence						
Urban ®						
Rural	-.085	.035	5.972	1	.015	.918
Current work status of women						
Not working ®						
Working	-.202	.032	38.895	1	.000	.817
Wealth index						
Poorest ®			101.290	4	.000	
Poorer	.082	.047	3.072	1	.080	1.085
Middle	-.002	.049	.002	1	.963	.998
Richer	-.198	.054	13.424	1	.000	.820
Richest	-.472	.064	53.919	1	.000	.624
Constant	-2.027	.106	368.748	1	.000	.132

Source: Computed from unit level data of NFHS-3

Note: (R) = reference category

Appendix 5.9
Logistic regression results for women's reporting of their
most recent pregnancy as unintended, India, 2005-06
Full model – model 4

Background characteristics	B	S.E.	Wald	df	Sig	Exp(B)
Experience of spousal violence						
No ®			58.801	3	.000	
Only physical	.203	.035	34.685	1	.000	1.225
Only sexual	.317	.102	9.621	1	.002	1.373
Both physical and sexual	.323	.055	34.202	1	.000	1.381
Age of women						
15-19 years ®			26.412	2	.000	
20-29 years	-.195	.071	7.652	1	.006	.823
30-49 years	-.051	.075	.453	1	.501	.951
Number of surviving children						
No surviving child ®			402.325	3	.000	
Only 1 son	.148	.095	2.440	1	.118	1.159
Only 1 daughter	.163	.095	2.928	1	.087	1.177
At least 2 children	.932	.088	113.183	1	.000	2.540
Use of contraceptive methods						
Never used ®			58.349	2	.000	
Used only traditional / folkloric method	.108	.052	4.283	1	.038	1.114
Used modern method	.256	.034	57.773	1	.000	1.291
Constant						
Women's highest level of education						
No education ®			34.885	2	.000	
Primary	.202	.044	20.732	1	.000	1.224
Secondary or higher	.217	.041	28.757	1	.000	1.243
Religion						
Hindu ®			53.475	2	.000	
Muslim	.255	.042	36.205	1	.000	1.291
Other	.230	.050	21.364	1	.000	1.259

Contd.

Appendix 5.9 contd.

Type of caste/tribe						
SC/ST ®						
Other	-.053	.034	2.413	1	.120	.949
Marital control by husband						
No control ®			43.537	2	.000	
Lower control	.162	.033	24.440	1	.000	1.175
Highly controlled	.271	.048	32.361	1	.000	1.312
Type of place of residence						
Urban ®						
Rural	-.113	.035	10.274	1	.001	.893
Current work status of women						
Not working ®						
Working	-.177	.033	29.300	1	.000	.838
Wealth index						
Poorest ®			94.392	4	.000	
Poorer	.082	.047	3.056	1	.080	1.086
Middle	.003	.049	.003	1	.954	1.003
Richer	-.185	.055	11.191	1	.001	.831
Richest	-.462	.066	49.292	1	.000	.630
Regions in India						
Northern ®			122.752	4	.000	
Eastern	-.065	.041	2.482	1	.115	.937
North-eastern	.038	.046	.675	1	.411	1.038
Western	-.535	.056	92.071	1	.000	.586
Southern	-.267	.047	32.581	1	.000	.766
Constant	-1.932	.108	319.188	1	.000	.145

Source: Computed from unit level data of NFHS-3.

Note: (R) = reference category

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