Does Gender-Based Violence Increase the Risk of Unintended Pregnancy? Evidence from Thailand

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ABSTRACT

Intimate partner violence (IPV) is positively associated with a number of reproductive health problems. However there is lack of knowledge about the relationship between IPV and control over sexuality. This study aimed to examine the relationship between unintended pregnancy and IPV, and to explore the factors influencing unintended pregnancies among Thai women, using secondary data from the study "Women's Health and Domestic Violence against Women". One-third of the respondents reported that their last pregnancy was unintended. About 41 percent of the respondents reported IPV in their life course, 13 percent reported only physical, 17 percent reported only sexual and another 11 percent reported both physical and sexual violence. Results of logistic regression showed the odds of unintended pregnancy for women who experienced both sexual and non-sexual violence was 2.4 times higher, only sexual violence was 2.7 times higher, and only physical violence was 1.5 times higher, compared to non-abused women.

Key words: Thailand; Unintended pregnancy; Violence; Smoking; Alcohol; Abuse.

Acknowledgement
The present article has prepared based on my thesis work. I would like to extend deep gratitude and regards to Associate Professor, Dr. Wassana Im-em, my major advisor and Associate Professor Dr. Kritaya Archavanitkul, my co-advisor, Institute for Population and Social Research, Mahidol University, Thailand, for their valuable guidance with constructive, critical, fruitful and insightful comments, suggestions, and continuous support at various stages to enrich my thesis work. I am especially grateful to Assistant Professor, Dr. Suchada Thaweesit, my external reader, for her valuable comments and suggestions that contributed to improve the quality of my thesis work. Once again gratitude is due to my major advisor and co-advisor, Wassana Im-em and Kritaya Archavanitkul, for their generosity in permitting me to use their data set for this research.

Introduction

Each year throughout the world, approximately 210 million women become pregnant; 80 million of these pregnancies are unplanned; 130 million result in live births. Many of these pregnancies are terminated through unsafe practices. Estimates indicate that out of 46 million abortions that occur each year, roughly 20 million are unsafe and approximately 80,000 women die from complications of unsafe abortions, which accounts for at least 13 percent of global maternal mortality (Planned Parenthood, 2005). So in recent years unintended pregnancy has become an emerging issue for policy makers. All over the world, almost half a million women die each year due to pregnancy-related complications, and 99 percent of these deaths occur in developing countries (UNFPA, 1998). Unplanned pregnancy occurs for a number of reasons; the behavior of one's sexual partner is one of them. Unintended pregnancy may be mistimed, a pregnancy that occurs earlier than desired, or unwanted, which occurs when no children or no more children are desired (Jain, 1999; Santelli et al., 2003). In every society, across all religious, cultural, and economic differences, women face unintended pregnancies due to failure to negotiate the sexual relations with the partner and choosing whether and when to have children.

Violence against women (VAW) is related to the health of women and girls. A recent study conducted in Colombia shows that more than half of the women had had at least one unintended pregnancy during five years (1995-2000). Among the women who had recently given birth and experienced physical or sexual abuse 63 percent of the pregnancies were unintended (Pallito & O'Campo, 2004). There are various forms of VAW which are endemic in communities and countries around the world, irrespective of social, cultural, economic, racial, age, religious, and national boundaries. Most often the abuser is a member of her own family, usually her sexual partner. In 48 population-based surveys from around the world, 10-69 percent of women reported being physically assaulted by an intimate partner at some point in their lives (Population Report, 1999; WHO, 2002). Increasingly, gender-based violence is recognized as a major public health concern and a violation of human rights. In recent years the problem of domestic violence, its causes and consequences on health has become an emerging issue. Since violence is a leading worldwide public health problem, an international conference, The Fourth World Conference on Women in Beijing in 1995, has recommended that the problem of violence against women and girls be addressed and that its health consequences be examined (WHO, 2002). But the progress is still slow because the men's attitudes have not yet changed and effective strategies to address domestic violence are still being defined. So women worldwide are suffering from domestic violence, which is estimated to range from 20 to 50 percent from country to country (UNICEF, 2000).

In view of the importance given by the UN Fourth World Conference on Women, Governments have increasingly called for an end to violence against women, recognizing it as a violation of human rights. Evidence exists to show that one form of violence against women, domestic violence, occurs in all societies. The World Health Organization (WHO) defines violence as: "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation" (WHO, 2002). This study will focus only the violence occurred by the intimate partner.

In every society, each woman of reproductive age who is involved in a sexual act is at risk for unintended pregnancy irrespective of religious, cultural and economic differences. It affects women, their families, the society, and the nation. A complex combination of social and psychological factors put women at risk for unintended pregnancy. Abortion is a frequent consequence of unintended pregnancy and, in developing countries can result in serious long-term negative health effects including infertility and maternal death (Klima, 1998). Several studies provide evidence that the women who had experienced intimate partner violence during pregnancy were more likely than non-abused women to report that the pregnancy was unplanned or closely spaced, or that they had had unhappy feelings about it (Amaro et al., 1990).

There are many forms of intimate partner violence against women. Physical, sexual, and psychological violence committed by the intimate partner, especially rape and sexual abuse, are widely existent phenomena in the world. For example, 16 percent of Cambodian women are physically abused annually by their spouse and in the UK 30 percent of women were physically assaulted by a partner or ex-partner (WHO, 2000). Another study conducted in four states of the USA among 12,612 mothers explains that women whose pregnancy was unwanted or mistimed are four times more likely to have been physically hurt by their husband or partner (Gazmararian et al., 1995). In addition, many women are directly forced or coerced to have sex. Young girls and women are the most vulnerable groups. Available study shows that many girls reported their first sex was unwanted or forced. A study of 548 women in New Zealand aged 20-22 provides the evidence that 25 percent of women who had sexual experience before age 13 did so as a result of forced sex (Dickson et al., 1998).

Very few studies have explored the relationship between intimate partner violence and unintended pregnancy. One study conducted in Colombia found that women who had experienced intimate partner violence during pregnancy are more likely than non abused women to report that their pregnancy was unplanned. Fifty five percent of respondents had had at least one unintended pregnancy and 38 percent had been physically or sexually abused by their current or most recent partner (Pallito & O'Campo, 2004).

Domestic violence is not a new issue in Thailand. It has had a great impact on women's health. A study conducted in Pattani Hospital, Thailand shows that 16 percent of women reported experience of past physical abuse (during a prior pregnancy or during the preceding year), 4 percent reported that they had experienced physical abuse during a current pregnancy and 10 percent reported having experienced abuse both in the past and during their current pregnancy. This study also shows that prevalence rates of physical abuse were highest among women who had an unintended pregnancy (Kuning et al., 2004). Also the extent, nature, and frequency of violence against women in Thailand were explored in a WHO Multi-country Study on Women's Health and Domestic Violence against Women. The result showed 44 percent of women who had ever been married had experienced either physical or sexual violence committed by their partner. Among them 15 percent had experienced physical violence only, 16 percent sexual violence only and 13 percent both physical and sexual violence in their lifetime (Archavanitkul et al., 2001). Kuning (2004) cited that a World Bank-funded study that reported that up to 20 percent of Thai husbands had beaten their wives at least once in their lifetimes.

Domestic violence against women has come to the forefront only since the last decade, particularly after the Beijing Conference on Women in 1995. The Platform for Action adopted at the Fourth World Conference on Women encourages governments, research institutions, and non-governmental and other organizations to promote research on the prevalence of domestic violence and its causes and consequences, and to assess the effectiveness of preventive measures. Since research into domestic violence is in its early stage in Thailand, there are few studies to examine the relationship between intimate partner violence and unintended pregnancy. So to make appropriate policy to improve reproductive health, an intensive study on this issue is very important.

Study objectives

The main objective of this study was to investigate the association between intimate partner violence and unintended pregnancy. The specific objectives of the study were:

i) to examine the determining factors affecting unintended pregnancy, and
ii) to explore the risk or probability of intimate partner violence on unintended pregnancy after controlling socio-demographic factors.

Methodology

The data was obtained from the WHO Multi-country Study on Women's Health and Domestic Violence against Women, conducted in Thailand in 2000. The survey was conducted under the guidance of Institute for Population and Social Research (IPSR), Mahidol University and the Foundation for Women, Thailand. The original study was conducted to identify the prevalence of intimate partner violence against women by population-based survey and aimed to analyze the health impact of intimate partner violence on women victims (Archavanitkul et al., 2001). The study employed a multi-stage probability design. The sample was selected from villages and urban wards, and thereafter households and women were selected proportional to size. A total of 2,817 women aged 15-49 from the two sites (Bangkok & Nakornsawan) were interviewed.

Present article aimed to deal with the last pregnancy of women at the time of interview. Out of 2,817 interviewed women aged 15-49 years 531 (18.8%) had a history of a pregnancy within the five years preceding the survey and all of them had had only one partner in their life course. So the total population of the study was 531. In this study the dependent variable is pregnancy intendedness. In response to intention of last pregnancy, there were four categories of response: become pregnant then (wanted), wait until later (mistimed), children not wanted (unwanted), and not mind either way (wanted). The responses mistimed and unwanted were merged together and considered as unintended pregnancy and other responses are treated as intended pregnancy.

Apart from univariate distribution, cross tabulations and Chi-square distributions were used to obtain a preliminary idea of the relationship between the dependent and independent variables. Correlation was used to check the colinearity of the independent variables. Finally, regression model was used to examine the strength of the relationship between the dependent and independent variables in order to identify those variables that have a significant relationship with the dependent variable. The major limitations of the study are: it dealt with the last pregnancy that occurred during the five years previous to the survey while IPV data were collected for all years. Besides this limitation, recall bias and under reporting may lead to under estimates of unintended pregnancy and IPV rate.

Findings and discussions

Background characteristics of the respondents

The sample for the study comprises 531 respondents. In terms of the partnership status, all women had only one intimate partner over their life course. Among them 87.2 percent were currently married and co-residing, 8.7 percent were living together not married, and 4.1 percent were separated, widowed, or divorced. The mean age of women and their partners were 31 and 34 years respectively. As for the number of living children, it was found that on average the women had 1.8 live births.

In terms of educational attainment of respondents, only 1.7 percent had no education at the time of the interview. This indicates high literacy rate in Thailand. The completion of primary education was quite high (44.6%), followed by 30 percent who completed secondary, and about one-fifth who had completed higher education. When looking at the educational attainment of the intimate partner, it was found that the largest group of husband/partner (39.6%) was the group that had completed primary education. A third of partners had completed secondary school, and another quarter (27.6%) had attended college, university, or even higher level. Regarding the socio-economic status in the household, data revealed that a majority of women had a favorable socio-economic condition.

Concerning the use of contraceptive methods it was quite high, about 93 percent women ever used any contraceptive methods and 85.3 percent of respondents were currently using contraceptive methods and among them 95.7 percent used modern methods. Besides the regular contraceptive methods, in Thailand the post-coital contraceptive pill (Postinor) is also available, and 7.3 percent women reported

having used Postinor, 61.8 percent never having used it, and a quite large percentage (30.9%) did not know about Postinor where about one-third of women experienced unintended pregnancy.

Socio-demographic factors and pregnancy intendedness

It is evident that marital status is an important risk factor for unintended pregnancy. Several study findings revealed that single women were more likely than women in union to say their pregnancy had been unwanted or mistimed (Eggleston, 1999; Forrest, 1994; Goto et al., 2002; Gross, 2002). The following Table shows that more than half of the unmarried respondents reported that they experienced unintended pregnancy whereas about only one-third of married women reported that their pregnancy was unintended, which is lower as compared to never married women and the difference is statistically significant.

Women's age also has effects on unintended pregnancy. Older women are less likely to have experienced unintended pregnancy than younger women (Gross, 2002; Kost & Jacqueline, 1998). However, few studies also indicated that older women (aged 30-49) were more likely than younger women to say their pregnancy had been unwanted (Pallitto & O'Campo, 2004, Eggleston, 1999; Okonofua et al., 1999). The result shows that the unintended pregnancy rate is higher among young and adult women as compared to middle aged women. On the other hand, it is observed that the rate of unintended pregnancy decreases as the partner's age increases. The Chi-square test also shows the effect of partner's age group on pregnancy intendedness is statistically significant.

The potential unintended pregnancy rate tends to be low in societies where large families are desired. So when the number of children desired is decreased, women are potentially at risk to experience an unintended pregnancy. Table 1 show that unintended pregnancy increases with the increase in the number of living children. The unintended pregnancy rate is very high (60.8%) among women who have three or more living children. The Chi-square finding shows the effect of number of living children on intendednes of pregnancy is statistically significant.

Table 1 Percentage distribution of intended and unintended pregnancy by selected demographic characteristics

Characteristics	n	Pregnancy intendedness		χ^2	P Value
		Intended	Unintended		
Marital status				8.61	0.003
Ever married	485	69.1	30.9		
Never married	46	47.8	52.2		
Age of respondent (years)				27.95	0.000
Below 25	93	53.8	46.2		
25-34	297	76.8	23.2		
35 or more	141	56.0	44.0		
Age of partner (years)				11.00	0.004
Below 25	41	43.9	56.1		
25-34	244	68.9	31.1		
35 or more	246	69.5	30.5		
Number of living children				33.74	0.000
1	227	74.0	26.0		
2	225	70.2	29.8		
3 or more	79	39.2	60.8		

(n=531)

Perhaps the most significant variable for women in determining when and how many children to have (and when and whether to use contraceptives) is education. This is because educated women are better able to negotiate with their partner. The relationship between level of education and unintended pregnancy has been explored in a couple of studies. Women with lower levels of education were more likely to report experience of unintended pregnancy than more highly educated women (Eggleston, 1999; Orr, 1997; Gross, 2002). Table 2 shows that unintended pregnancy decreased with women's higher level of education. The unintended pregnancy rate was high (37.1%) among women who had completed only

secondary education, as it was for women who had completed only primary education or who were illiterate (32.5%). On the other hand, only 27.8 percent of women who experienced unintended pregnancy had a higher education. Similar evidence is observed in terms of partner education.

Many theories suggest that higher socio-economic status (SES) can change women's behavior on reproductive health issues. When socio-economic status of a household increases, then the chances of a woman having had an unintended pregnancy decrease (Pallitto & O'Campo, 2004; Forrest, 1994; Kost & Jacqueline, 1998). Similar findings were observed in the present study, the rate of unintended pregnancy increased with decrease in the level of socio-economic status and the effect of socio-economic status on unintended pregnancy is statistically significant. SES was calculated through principal component analysis where sample has been divided into quintiles from one (lowest) to five (highest) using household construction materials and assets.

Table 2 Percentage distribution of intended and unintended pregnancy by selected socio-economic characteristics

Characteristics	n	Pregnancy intendedness		χ^2	P Value
		Intended	Unintended		
Respondent's level of education				2.79	0.248
Illiterate* & primary	246	67.5	32.5		
Secondary	159	62.9	37.1		
Higher	126	72.2	27.8		
Partner's level of education**				4.95	0.084
Primary	204	68.1	31.9		
Secondary	169	62.1	37.9		
Higher	142	73.9	26.1		
Socio economic status				6.53	0.012
Lowest	103	46.4	53.6		
Second	109	50.9	49.1		
Middle	104	66.9	33.1		
Fourth	107	71.7	28.3		
Highest	109	74.8	25.2		

(*Illiterate= 9 cases; ** 16 missing cases; n=531)

Psycho-socio factors and pregnancy intendedness

There is no available study on the effect of attitudes towards sexual autonomy on unintended pregnancy. However, one study has measured women's autonomy by considering decision-making power in three domains: household, women's own lives and sexual. The result showed that living in municipalities, where women exhibit higher autonomy or status, increases one's odds of experiencing an unintended pregnancy. But the lack of control over sexual decision-making can lead to unintended pregnancy (Pallitto & O'Campo, 2005).

The women who earn money or can spend money for family activities were considered as have financial autonomy. Findings show (Table 3) that the rate of unintended pregnancy was lower (31%) among women who had financial autonomy. Similarly, from Table 3 it is clear that the unintended pregnancy rate is high (36.9%) among women who showed lower positive attitude toward sexual autonomy as compared to women who showed strong attitude on sexual autonomy (30.5%). Sexual autonomy was considered as woman had control over her sexuality.

Table 3 Psycho-socio characteristics of respondents by pregnancy intendedness

Characteristics	n	Pregnancy intendedness		χ^2	P Value
		Intended	Unintended		
Financial autonomy of women				2.35	0.125
Have autonomy	406	69.0	31.0		
Don't have autonomy	125	61.6	38.4		
Attitude toward sexual autonomy				2.24	0.135
Lower/negative attitude	187	63.1	36.9		
Higher/positive attitude	344	69.5	30.5		

Relationship between risk behavior factors and pregnancy intendedness

It is clear that engaging in deleterious health behaviors, such as smoking and alcohol use, is harmful to women. Women with unintended pregnancies are more likely to use alcohol and cigarettes during pregnancy than the women with intended pregnancies (Weller et al., 1987). Data from the North Carolina Pregnancy Risk Assessment System (PRAMS) show that women who reported a drinking habit during the last three months of pregnancy were less likely to report that their pregnancy was unintended, though this difference was not statistically significant (Gross, 2002). The results showed that unintended pregnancy rate was higher among women who were using alcohol during the pregnancy, which was 58 percent. On the other hand, only 31 percent unintended pregnancies occurred among women who were not using alcohol during pregnancy, the Chi-square test shows that there is significant association among alcohol consumption and pregnancy intendedness.

Women who become pregnant unintentionally may engage in risky behaviors before realizing their conception. Whenever they are sure about their conception, they may try to cease or even compensate for past behaviors. Research shows the proportion of heavy smokers among women with unwanted pregnancies is 5.9 percentage points greater than among mothers with intended pregnancies (Joyce, 2000). Another study shows women with unintended pregnancies are more likely to use cigarettes during pregnancy than are women with intended pregnancies (Weller et al., 1987). Again, data from the North Carolina shows that women who smoked during last three months of pregnancy were much more likely to have had an unintended pregnancy (Gross, 2002). From Table 4, it is found that unintended pregnancy rate was higher (59%) among women who were using tobacco during their pregnancy, whereas among women who were not using tobacco, only 31.6 percent experienced unintended pregnancy. The effect of tobacco use during pregnancy on intendedness of pregnancy is statistically significant through Chi-square test.

Table 4 Percentage distribution of intended and unintended pregnancy by the risk behaviors

Characteristics	n	Pregnancy intendedness		χ^2	P Value
		Intended	Unintended		
Women's use of alcohol				9.56	0.002
Yes	31	41.9	58.1		
No	500	68.8	31.2		
Women's use of tobacco				7.22	0.007
Yes	22	40.9	59.1		
No	509	68.4	31.6		
Partner's use of alcohol				1.83	0.176
Yes	386	65.5	34.5		
No	145	71.7	28.3		
Partner's outside sexual relations				22.43	0.000
Yes	103	47.6	52.4		
No	365	72.1	27.9		
Not sure	63	71.4	28.6		

There is no available study to profile the relationship between partner's drinking habits and unintended pregnancy. However, an important risk marker for partner violence that appears especially consistent across different settings is alcohol use by men (Kyriacou et al., 1998). Findings showed that the rate of unintended pregnancy decreased if women's partner didn't have habit of alcohol consumption. Women whose partner never drank alcohol among them 28.3 percent had experienced unintended pregnancy. On the other hand, 34.5 percent of women whose partner had habit of alcohol consumption reported experience of unintended pregnancy.

Little information was obtained about the effect of partner's extramural relations on unintended pregnancy. But a male's having multiple partners may be a marker for increased risk of unintended pregnancy as such a man may not care about contraception use. Study findings showed that the rate of unintended pregnancy was high when partners had sexual relations with other women. The results

showed that more than fifty percent unintended pregnancies occurred among women whose partner had sexual relations outside their relationship, whereas the rate was quite low among women whose partner's didn't have such kind of relations with other woman and when women were not sure about such kind of relationship. Chi-square test shows that there is significant association among women whose partner had sexual relations outside their relationship on pregnancy intendedness ($p<0.001$).

Relationship between abuse factors and pregnancy intendedness

Violence against women, especially by intimate partners, is a serious public health problem that is associated with physical, reproductive and mental health consequences (Campbell et al., 2002). Some coercive or non-consensual intercourse deprives women of the right to negotiate contraceptive choices, and sexually abused women are more likely to engage in risky sexual behavior than other women. So, unintended pregnancy results directly from sexual abuse (Moore, 1999). Another study provides the evidence that the women who had experienced intimate partner violence during pregnancy were more likely than non-abused women to report that the pregnancy was unplanned or closely spaced (Amaro et al., 1990). Again Gazmararian assessed the effect of covariates on the association between pregnancy intendedness and physical violence. For every level of all covariates, the prevalence of physical violence was highest among women with unwanted pregnancy, lowest among women with intended pregnancies; women having mistimed pregnancies were in the middle (Gazmararian et al., 1995).

Table 5 showed the effect of intimate partner violence on intendedness of pregnancies. The results showed that the rate of intended pregnancy among sampled women who never experienced violence was highest (77.2%), whereas unintended pregnancy rate was higher among women who previously had experienced sexual (44.3%), physical (43.5%) or both types of violence (56.9%) than women who had never experienced any types of violence (22.8%). It is clear from the Table that the rate of unintended pregnancy is higher among the women who experienced both types of violence than the women who experienced only physical or only sexual violence. The Chi-square test in this study shows the effect of intimate partner violence on pregnancy intendedness is statistically significant ($p<0.001$). Similarly the effect of intimate partner violence which occurred within previous 12 months has an effect on unintended pregnancy ($p<0.001$).

Table 5 Percentage distribution of women who experienced intended and unintended pregnancy by abuse

Characteristics	n	Pregnancy intendedness		χ^2	P Value
		Intended	Unintended		
IPV (ever)				38.54	0.000
No violence	316	77.2	22.8		
Both physical and sexual	58	43.1	56.9		
Only physical	69	56.5	43.5		
Only sexual	88	55.7	44.3		
IPV (last 12 months)				23.86	0.000
No violence	405	72.3	27.7		
Both physical and sexual	28	42.9	57.1		
Only physical	35	42.9	57.1		
Only sexual	63	58.7	41.3		

Results of multivariate analysis

The logistic regression analysis examined all independent variables at the multivariate level. The variables that are significant at the bivariate level are reexamined, controlling for other variables in the multivariate analysis to have a clearer identification of the significant factors. In the multivariate analysis, two models were used to see the effect of independent variables. So the first model includes all independent variables except the intervening variable. But second model includes all independent variables as well as an intervening variable to see the influence of intervening variable on the dependent variable.

Table 6 presents the binary logistic regression coefficient in relation to unintended pregnancy. In the bivariate analysis most of the independent variables are significant but when it has been included in the logistic regression model many of these variables do not show any significant effect on dependent variable. The dependent variable was whether the pregnancy was intended or unintended.

The findings in Table 6 show that marital status has an influence on unintended pregnancy (Model 1). The odds of unintended pregnancy for women who were never married are 2.6 times higher as compared with the previous married women after controlling for all the independent variables in this study. It means that women who are not married but have the sexual partner are more vulnerable to experience unintended pregnancy. Also the coefficient (B) shows the significant positive association between marital status and unintended pregnancy. This finding is consistent with the previous studies that unmarried women are more likely to experience unintended pregnancy as compared with married women (Goto et al., 2002; Gross, 2002; Eggleston, 1999).

The findings of logistic regression analysis indicate that age of women has an influence on unintended pregnancy. The women who are aged between 25-34 years are 69 percent less likely to experience unintended pregnancy than those who are aged below 25 years and the coefficient shows significant negative association. Again findings show that older women are 1.1 times more likely to experience unintended pregnancy than women who are aged below 25 years. Though similar findings are also found from other studies by Pallitto & O'Campo (2004), Okonofua et al. (1999), Goto et al. (2002), and Williams (1991) that older women are more likely to experience unintended pregnancy and the coefficient shows a positive effect on unintended pregnancy, the possible reason may be that older women have lack of correct knowledge on family planning methods, which results unintended pregnancy.

It is found that the number of living children is statistically associated with unintended pregnancy in bivariate analysis. Here in the multivariate analysis it is found that the women with 3 or more children have higher odds of unintended pregnancy than those who have one child and the coefficient shows positive effect on unintended pregnancy. Again it is found that for two children the effect is also significant and they are more likely to experience unintended pregnancy than who have one child. After controlling all the independent variables in this study, the odds of unintended pregnancy for women with 3 or more children is 14 times higher and with two children is 3 times higher compared to women who have one child. From the findings it reveals that women with two children are less likely (3.1) to experience unintended pregnancy than those women who have three or more children (14.2). The reason may be women in Thailand do not expect more than two children and their third child was not intended in this case. Because when the desired number of children is decreased then women are potentially at risk to experience an unintended pregnancy. The result B coefficient shows the positive association between number of living children and unintended pregnancy among the women. This finding is consistent with the previous studies that unintended pregnancy rate increases with the increase of number of children (Pallitto & O'Campo, 2004; Kuning et al., 2004; Eggleston, 1999).

The findings of the logistic regression (Model 1) also indicate that the level of respondent's education has an effect on unintended pregnancy and the coefficient shows that respondent's education has negative effect on unintended pregnancy. From the Table, it is found that the women who were illiterate or who had completed only primary school are 52 percent less likely to experience unintended pregnancy than the women who have completed higher education. Also women who have completed secondary education are 7 percent less likely to experience unintended pregnancy than women who have completed higher education. This finding contradicts with the previous studies that women with primary education are more likely to experience unintended pregnancy as compared with secondary or higher educated women (Goto et al., 2002; Gross, 2002; Eggleston, 1999). The possible answer may be that educated women do not pay much attention to their fertility.

Table 6 Logistic regression coefficient of pregnancy intendedness by socio-demographic, psycho-socio, contraceptive use, risk behavior and abuse factors

Variables	Model 1		Model 2	
	B	Exp(B)	B	Exp(B)
Marital status				
Never married	0.968**	2.634	0.965**	2.624
Ever married **(Ref.)**				
Age of respondents (years)				
35 or more	0.098	1.103	0.083	1.086
25-34	-1.167**	0.311	-1.123**	0.325
Below 25 **(Ref.)**				
Age of partner (years)				
35 or more	-1.419**	0.242	-1.486**	0.226
25-34	-0.453	0.636	-0.513	0.599
Below 25 **(Ref.)**				
No. of living children				
2 children	1.140***	3.126	1.202***	3.327
3 or more	2.650***	14.157	2.708***	14.999
1 child **(Ref.)**				
Respondent's education				
None & primary	-0.715*	0.489	-0.778*	0.459
Secondary	-0.069	0.933	-0.079	0.924
Higher**(Ref.)**				
Partner's education				
Primary	-0.055	0.946	0.043	1.044
Secondary	0.516	1.675	0.536	1.709
Higher **(Ref.)**				
Socio-economic status				
Lowest	1.215*	2.730	0.835*	2.292
Second	0.825*	2.582	0.589	2.027
Middle	0.716*	2.046	0.597	1.817
Fourth	0.486*	1.626	0.393	1.481
Highest **(Ref.)**				
Contraceptive use				
Never	-0.447	0.639	-0.374	0.688
Ever **(Ref.)**				
Financial autonomy				
Don't have	0.337	1.400	0.331	1.393
Have **(Ref.)**				
Attitude toward sexual autonomy				
Weaker	0.340	1.405	0.315	1.370
Stronger **(Ref.)**				
Use of alcohol by respondents				
Yes	0.369	1.446	0.512	1.668
No **(Ref.)**				
Use of tobacco by respondents				
Yes	1.052*	2.862	0.842	2.320
No **(Ref.)**				
Use of alcohol by partners				
Yes	0.327	1.387	0.300	1.350
No **(Ref.)**				
Partners outside sexual relations				
Yes	1.031***	2.803	0.866**	2.377
No **(Ref.)**				
Ever abused by partner				
Physical only			0.540	1.716
Sexual only			1.034***	2.812
Both physical and sexual			0.886**	2.425
Never abused **(Ref.)**				
Constant	-2.482***	0.084	-2.790***	0.271

***p<0.001; **p<0.05; * p<0.10

Many theories suggest that higher socio-economic status can change women's behavior on reproductive health issues. The hypothesis is that when the household socio-economic status increases, then chances of unintended pregnancy will decrease. This study finding through logistic regression analysis indicates that the socio-economic status has an influence on unintended pregnancy. Women with lowest socio-economic status are 2.7 times more likely to experience unintended pregnancy and it shows positive significant association. On the other hand, women with second lowest socio-economic status are 2.5 times more likely to experience unintended pregnancy than the women with higher socio-economic status and the coefficient shows significant positive effect on unintended pregnancy. Women with lower socio-economic status are more likely to experience unintended pregnancy as compared to women with higher socio-economic status. This finding is consistent with the previous studies that unintended pregnancy rate decreases with the increase of household status (Pallitto & O'Campo, 2004; Eggleston, 1999; Kost & Jacqueline, 1998). The possible explanation may be that women who exhibit higher socio-economic status develop higher sense of independence to decide about the number of children.

The women's habit of smoking during pregnancy has an influence on unintended pregnancy. It is found that the odds of unintended pregnancy for women who had habit of smoking during pregnancy are 2.8 times higher as compared to women who didn't habit of smoking during the pregnancy. The coefficient B shows the positive association between women's habit of smoking during pregnancy and unintended pregnancy. Weller (1987) found that women with unintended pregnancies were more likely to use alcohol and cigarettes during pregnancy than women with intended pregnancies. It is clear that engaging in deleterious health behaviors, such as smoking, is harmful to women as they may not care about their sexual activity and pregnancy. Similarly, partner's sexual relations outside the relationship have a strong influence on unintended pregnancy. The odds of unintended pregnancy for women whose partner had sexual relations outside their relationship are 2.8 times higher as compared to women whose partner doesn't have such sexual relations. The coefficient B shows the positive association between partner's sexual relations outside the relationship and unintended pregnancy and the findings also confirmed the hypothesis. Possible explanation may be that partner's sexual relations with other women may be a marker for increased risk of unintended pregnancy as they may not care their original sexual partner. According to this study and previous studies, partner's sexual relations with other women are viewed as one of the most egregious forms of VAW by women's eyes.

As mentioned earlier, model 2 has been developed to see the effect of all independent variables, including the intervening variable. From model 2, it is clear that after including the intervening variable in the analysis the effects of other independent variables on the dependent variable change significantly. In the first model socio-economic status and respondents use of tobacco was significant but in the second model these variables don't show higher significant effect on unintended pregnancy. The effect of other variables remains almost same in both the models. The findings derived from the previous bivariate analysis between previously abuse by partner and unintended pregnancy is again found significant in multivariate analysis after controlling all other independent variables. Here in multivariate analysis it is found that women who experienced both physical and sexual abuse have higher odds of unintended pregnancy than who never experienced any abuse and the relationship is highly significant. It is found that the effect of only physical abuse is not statistically significant with unintended pregnancy though women who experienced only physical violence are 1.7 times more likely to experience unintended pregnancy than women who never experienced any form of violence. But the effect of only sexual violence on unintended pregnancy is statistically significant and they are more likely to experience unintended pregnancy than those who never experienced any types of abuse. The odds of unintended pregnancy for women who experienced both types of abuse is 2.4 times higher, only with sexual abuse is 2.8 times higher and only physical abuse is 1.7 times higher compared to women who never experienced any forms of abuse in their life course. From the findings it reveals that women who experienced only physical violence have less likelihood (1.7) of experiencing unintended pregnancy than those women who have experienced only sexual (2.8) and both physical and sexual violence together (2.4). The possible reason

may be that sexual violence is related to reproduction but physical violence doesn't have the direct relationship with reproduction or pregnancy. The coefficient, B shows a positive association between intimate partner violence and unintended pregnancy and the findings also confirmed the hypothesis. A couple of studies provides the evidence that women who had experienced intimate partner violence during pregnancy were more likely than non-abused women to report that pregnancy was unplanned or closely spaced (Amaro et al., 1990; Pallitto & O'Campo, 2004; Kuning et al., 2004; Gazmararian et al., 1995).

Conclusion

Results of the analysis confirm the effect of marital status on the unintended pregnancy of women in Thailand. The analysis demonstrates the critical role of women's marital status in shaping unintended pregnancy. Greater attention needs to be paid to ensuring the legal marital status of women. Married women can share their reproductive health issues with their husband as they are responsible for caring their family. On the other hand, partner's other sexual relations engenders imbalanced power relations in the family and thereby fails to maintain a sense of harmony in the family. This relation is very important for the well being of women in their reproductive and sexual health issues. In this context, Government need to initiate more campaigns to discourage co-habiting and the resultant dangers of having multiple partners, which can improve the status of women both within the household and in society in general.

Number of living children is an important predictor factor to determine the effect of unintended pregnancy. Age of respondent's and age of their partner is also an important factor on unintended pregnancy. Therefore it is imperative that service providers can play an important role among this target group through proper counseling on reproductive health issues including family planning services to reduce the rate of unintended pregnancy. It has been found that better socio-economic status of women balance the rate of unintended pregnancy. So we need to make special efforts to educate men regarding the need to improve the status of women at all levels in terms of socio-economic status and reproductive and sexual rights.

From the analysis of the study, findings show that a small number of women used alcohol and tobacco during their pregnancy and a large percentage of partners used alcohol. But multivariate analysis shows only the significant positive effect of women's use of tobacco during pregnancy on unintended pregnancy. The reason may be that women who use tobacco, they are from well to do family and don't care about their sexuality and reproduction. Government and NGOs need to intervene in effective ways in order to conduct more campaigns through mass media about the dangers of alcohol and smoking among women and men.

Study shows that partner's sexual relations outside the relationship is one of the important factors on unintended pregnancy. According to respondent's understanding study claims that about one-fifth of women's partners had sexual relations with other women. And the multivariate analysis reveals that whose partners had sexual relations with other women shows significant effect on unintended pregnancy. This confirms that the efforts need to control sexual relations outside their relationship to gain better interaction, understanding and environment with partner for enjoying better reproductive and sexual health.

The study shows that the prevalence of physical and sexual violence by intimate partners is quite alarming among women and at the same time unintended pregnancy is also high among them. So preventing intimate partner violence is also crucial to ensuring women's status in the house. Therefore, it is important that society as a whole play an important role in putting an end to violence against women. Thus communities and institutions need to share this responsibility to combat against violence. Appropriate agencies should introduce effective programs to stop violence against women by integrating anti-IPV programs with other health services for more effective policies and more consistent and effective implementation of laws to protect women.

In general, the problem of unintended pregnancy is not one for women only. To combat and overcome this problem, a holistic approach needs to be adopted, with the involvement of partners, service providers, community leaders, policy makers, lawmakers, and women themselves in the design and implementation of programs addressing the reproductive and sexual health and the problem of violence against women. In addition, we need to conduct more studies especially qualitative studies to explore the issue of IPV and unintended pregnancy.

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