The Effect of Unwanted Pregnancy on Prenatal Care Practice in Thailand

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Introduction

The use of contraception has been steadily increasing worldwide, and it is estimated that 68 percent of couples residing in the less developed world used contraception in 2009, compared with only 10 percent in the 1960s (Population Reference Bureau, 2009; United Nations, 2003:47). This is clear evidence that couples are trying to control their reproductive lives. Unfortunately these attempts are far from perfect, as unwanted fertility remains widespread in many developing countries. (Bongaarts, 1997:266). Of the 208 million pregnancies occurring worldwide in 2008, an estimated 33 million resulted in an unintended birth – either mistimed or never wanted (Singh et al., 2009).

While contraceptive prevalence is extremely high (79.2% in 2000), Thailand is still faced with the problem of unwanted fertility. Findings from the Thailand Demographic and Health Survey indicated that 30 per cent of all pregnancies resulting in a live birth during the last five years preceding the survey were unintended pregnancies at the time of conception, 14 percent unwanted and 16 percent mistimed (Chayovan, Kamnuansilpa and Knodel, 1988:85). A hospital-based survey conducted in 1999 by Ministry of Public Health (MOPH) revealed that a total of 45,990 women were admitted for treatment of complications from spontaneous abortions and induced abortions. Among the women admitted, 29 percent were due to outcomes resulting from induced abortions. The incidence of abortion, while illegal in Thailand, appears to be particularly high for young women, who are becoming sexually active before marriage

in increasing numbers. In the 1999 MOPH survey, 33% of those seeking abortions were below 24 years of age, and a more recent study in 2000 found that 46% were below age 25 (United Nations Population Fund, 2005:28).

While abortion can be seen as one of the primary consequences of unintended pregnancy, many of these pregnancies are not resolved by abortion but are carried to term. The consequences for such a pregnancy on the mother and baby may be serious. A recent literature review found considerable evidence of the link between unintended pregnancy and detrimental effects on maternal and child health (Gipson, Koenig and Hindin, 2008). A study in Northern Thailand found higher odds of infant mortality among children who were unwanted (Frenzen and Hogan, 1982), and the same results were found nationally using the Thai DHS data (Montgomery et al., 1997).

Pregnancy is not an illness; however, it is accepted that prenatal care is a way to prevent the risk of complications during pregnancy. Prenatal care is essential for every pregnant woman since it helps reduce the rates of maternal and child morbidity and mortality (World Health Organization [WHO], 2003:2). Prenatal care offers early detection of any deformity during the first period of pregnancy, allowing immediate prevention and treatment. Unwanted pregnancy is listed as a risk factor of maternal and child health care that requires more attention because it is associated with adverse prenatal care behaviors, such as no prenatal care, late initiation of prenatal care, no follow-up of prenatal care and an inadequate number of prenatal visits (Brown and Eisenberg, 1995:68; Kost, Laundry and Forest, 1998:83). It can be viewed as a health risk that leads to acute and long-term physical, psychological and social consequences for not only the women and their children but also their families and the society as a whole (Brown and Eisenberg, 1995:1).

While prenatal care visits are essential for pregnant women, the quality of care should also be considered. Two key factors help determine the quality of prenatal care. The timing of the first prenatal visit is crucial. It allows initial assessment of the health status of both the women and the fetus, which is important for planning proper care. The earlier the initiation of prenatal care, the earlier that the detection of deformities can

be made and immediate attention and treatment are possible. Every pregnant woman is therefore encouraged to seek prenatal care soon after recognizing that she is pregnant, or should at least attend the first prenatal care session within the first trimester of gestation. Secondly, the frequency of prenatal care visits can be used to measure the quality of care. An adequate number of prenatal care visits is defined as comprising at least four prenatal care visits, which is based on recommendations from the WHO (1994:2).

As a result of these factors, the question remains: Are women's pregnancy-related behaviors and the health of their newborns directly linked to the planning status of their pregnancies? There has been limited research in Thailand relating the planning status of a pregnancy to maternal behaviors during pregnancy. The objective of this study is to analyze the relationship of unwanted pregnancy with prenatal care. We hypothesize that women with an unwanted pregnancy are less likely to have sufficient prenatal care than women with a wanted pregnancy.

Methodology

The study used data from the Maternal and Child Health Survey (MCH) 2003. The MCH was conducted by the Institute for Population and Social Research, Mahidol University, Thailand in 100 villages /census blocks of Kanchanaburi province. Structured interviews were conducted with women who had a pregnancy ending in a live birth, stillbirth or abortion within the two years prior to the time of interview. This resulted in a sample of 1,256 women. Women who were not asked about their pregnancy intention status were excluded from the analysis, resulting in a sample of 1,061 observations.

The dependent variable examined is prenatal care practice, measured in three ways: whether the woman had a prenatal care visit, the initiation of prenatal care visit(s), and the adequacy of prenatal care visit(s). Variables are defined as follows.

1) Prenatal care visit: Whether a woman saw a professional attendant (doctor, nurse, or midwife) for prenatal care.

2) Initiation of prenatal care visit(s): Whether a prenatal care visit occurred within the first trimester of pregnancy.

3) Adequacy of prenatal care visit(s): The total number of prenatal care visits throughout the pregnancy. Normally, the total number of prenatal care visits depends on the duration of the pregnancy and the timing of the initial visit. Based on WHO's recommendations, four prenatal care visits is considered the minimum adequate number for full-term pregnancies (WHO, 1994:2).

The key independent variable examined is pregnancy intention status. Pregnancy intention refers to the wantedness and timing of the pregnancy at the time of conception, as follows:

1) Wanted pregnancy: If the woman's answer is "I wanted to be pregnant" then, the pregnancy is classified as a wanted pregnancy.

2) Mistimed pregnancy: If the woman's answer is "I wanted to wait a bit"or "not yet ready", the pregnancy is classified as a mistimed pregnancy.

3) Unwanted pregnancy: If the woman's answer is "I did not want any more children", the pregnancy is classified as an unwanted pregnancy.

Multivariate logistic regression analysis is used to analyze the relationship of unwanted pregnancy with prenatal care practice after the parity of the pregnancy and the women's sociodemographic characteristics (age, education, occupation and residence) are held constant.

Limitations

The questions asked about pregnancy status are based on the women's retrospective report of their reproductive desires. Each woman is asked to think back to the time she became pregnant, which may make the answers provided subject to distortion and recall error. The woman's attitude at the time of conception may have changed since the time of birth because she may not wish to report a conception as unwanted or mistimed as the child has already been born. So, if the woman reported an unwanted pregnancy or mistimed pregnancy as wanted or planned pregnancy, the

proportion of unwanted pregnancy was underestimated. This measurement error is likely to bias the analysis in a conservative direction.

Results

Overall, among the 1,061 women respondents, the mean age was 26 years and more than half belonged to the 20-29 age group (54 percent). Their parity varied with 33 percent at first parity, 32 percent having two children, and 35 percent having 3 or more children. The vast majority (90 percent) had less than a secondary and higher level of education. Over one-half (55 percent) were housewives. Those who currently worked were engaged in agricultural and non-agricultural sectors at more or less the same proportion (22-23 percent). Most of the women (94 percent) resided in a rural area.

A large proportion of the pregnancies were not intended (Table 1). Only 70 percent reported that their last pregnancy was wanted at the time of conception, with the remaining 30 percent being unintended. However the majority of unintended pregnancies were mistimed (18.5 percent) rather than unwanted (11.5 percent).

Table 1: Percentage distribution of women by pregnancy intention status, parity of last pregancy and sociodemographic characteristics

Characteristics	Pregnancy intention status			Total (Number)
	Wanted	Mistimed	Unwanted	
All women	70.0	18.5	11.5	1,061
Age *				
15-19	61.2	34.1	4.7	170
20-24	69.0	24.1	6.9	303
25-29	80.7	13.8	5.6	269
30-34	70.4	10.2	19.4	196
35-39	61.0	6.0	33.0	100
40-49	60.9	8.7	30.4	23
Mean=26.14 years				

Table 1: (Continued)

Characteristics	Pregnancy intention status			Total (Number)
	Wanted	Mistimed	Unwanted	
Parity *				
1	73.5	24.8	1.7	351
2	72.8	19.8	7.4	338
3 and over	64.2	11.3	24.5	372
Education *				
No education	76.4	7.9	15.7	191
Lower primary	65.1	17.0	18.0	289
Complete primary	71.5	19.3	9.2	337
Lower secondary	63.4	33.8	2.8	142
Secondary and higher	76.5	18.6	4.9	102
Occupation *				
Non agriculture	72.6	20.0	7.4	230
Agriculture	73.8	11.7	14.5	248
Housewife	67.4	20.8	11.8	583
Residence *				
Urban	71.0	22.6	6.5	62
Rural	70.0	18.2	11.8	999

Note : * $p < 0.05$

Table 1 demonstrates that wanted pregnancies are more likely to occur between the ages of 25-29 (81 percent) and are lowest for the youngest and oldest age groups (15-19 and 35-49), with a similar proportion of 61 percent. Most women appear to prefer to have a pregnancy when they are aged 25-29 years. Since the singulate mean age at marriage (SMAM) of Thai women is 25 years (Chayovan, et al, 2003:103), this reflects the social norm that the mid-20s are most suitable period for establishing a family, allowing for adjustment to marriage and adulthood and enabling financial security. First and second parity pregnancies were about equally likely to be wanted (73-74%). Correspondingly, most of the mistimed pregnancies occurred during the early reproductive years (15-24 years), with the peak occurring below 20 years of age (34 percent) and among the first parity women (25 percent). Most of the unwanted

pregnancies occurred during the late reproductive years, 35-39 years of age (33 percent) and 40–49 years of age (30 percent) and were third parity or higher, indicating that these women had already reached their desired family size. Unwanted pregnancies may also occur because women at later reproductive ages (35-49 years) think that they are unable to conceive and failed to use contraception.

With respect to sociodemographic characteristics (Table 1), mistimed pregnancies were found to be more likely among the more highly educated women and among women in non-agricultural employment. This reflects the fact that women working at jobs in the formal economy often prefer to delay pregnancy, as they find it difficult to combine child care with working. Moreover, large numbers of unwanted pregnancies occurred among those with low education and working in agriculture, who may be less likely to obtain effective contraception (Otoid, Oronsaye and Okonofau, 2010:79). While an equal proportion of rural and urban women had a wanted pregnancy, (70-71 percent), rural women were less likely to have a mistimed pregnancy (18 vs. 23 percent) and more likely to have an unwanted pregnancy (12 vs. 7 percent).

Results for the dependent variable in Table 2 reveal that the vast majority of pregnant women (87 percent) had a prenatal care visit, while only 13 percent did not attend prenatal care at all. Owing to outreach health care services and the successful campaign of prenatal care among Thai women, this confirms the finding of other studies during the 1990s showing a high rate of 86 percent prenatal care visits attended by doctors, nurses, and midwives (WHO, 2003:6). The rate of prenatal care visits was lowest (77 percent) among women whose pregnancy was unwanted, indicating that intendedness also effects the tendancy to attend prenatal care. However, the rate was higher for the mistimed pregnancies than wanted pregnancies. This result can be explained by the fact that most mistimed pregnancies were also first pregnancies, with a high percentage of those aged 15-19 having a pregnancy described as being wanted but coming too early. Anxiety about their pregnancy and giving birth, because they had never experienced this condition, leads to higher rates of prenatal visits.

Table 2: Percentage distribution of women by prenatal care and pregnancy intention status

Prenatal care	Pregnancy intention status			Total	(N)
	Wanted	Mistimed	Unwanted		
Prenatal care visit	86.8	92.3	77.0	86.7	(1,061)
Initiation of visit	67.9	50.0	39.4	61.4	(913)*
Adequacy of visits	89.0	83.1	69.9	85.9	(905)+

* Women who could not remember the month that they had their first prenatal visit were excluded (N=7).

\+ Women who could not remember the number of visits were excluded (N=15).

While the study found that the percentage obtaining prenatal care was high, only 61 percent of those women having at least one visit initiated prenatal care in the first trimester. Women with unwanted (39 percent) and mistimed (50 percent) pregnancies were more likely to delay prenatal care during the first trimester. This result confirms the previous studies' findings that the timing of women's entry into prenatal care depends on the wantedness of a woman's pregnancy, which had by far the largest and most consistent effects on the timing of prenatal care (Pagnini and Reichman, 2000:62).

Analysis of whether the number of prenatal visits was adequate was analyzed for those women who received at least one prenatal care visit. The results show that an extremely high percentage of those who had any visits—86 percent—had four or more prenatal care visits. The proportion was much lower (70 percent) among those with an unwanted pregnancy and slightly lower (83 percent) for those with a mistimed pregnancy compared with 89 percent for women with a wanted pregnancy.

Multivariate results

Table 3 shows the results of the three logistic regression models predicting the odds of prenatal care practice: whether there was a prenatal care visit, initiation of

prenatal care visit(s) and adequacy of the visit(s). The analysis was used to assess the effect of pregnancy intention status on women's use of prenatal care services when other characteristics were controlled.

In the first model, all of the variables combined are able to explain 37 percent of the variation in the likelihood of a prenatal care visit. There is no significant relationship between pregnancy intention status and obtaining prenatal care. When other variables were controlled, women with a first parity pregnancy are 6.5 times more likely to seek prenatal care than those with third parity or more (OR=6.499), while women of second parity are 1.9 times more likely than those at third parity or higher (OR=1.895) to engage in such visits. The odds of attending prenatal care are 14.5 times higher among the women that completed primary education than among uneducated women (OR=14.537). And those with a lower primary school level of education were more likely to attend prenatal care than those without education by 2.2 times (OR = 2.180). Age, occupation and residence were not significantly associated with the likelihood of obtaining prenatal care when these factors are taken into account.

Table 3: Odds ratios and significance levels of independent variables on prenatal care visit, initiated time and adequate visit

Independent	Odds Ratios		
	Prenatal care visit	**Initiate time**	**Adequate visit**
Pregnancy intention status (ref: wanted)			
Mistimed	1.305	0.492**	0.417**
Unwanted	0.808	0.340**	0.535*
Age (ref: 40-49)			
15-19	0.348	0.542	0.245
20-24	0.552	0.735	0.304
25-29	0.875	1.021	0.689
30-34	1.749	1.147	0.962
35-39	1.356	1.380	1.265
Parity (ref: 3 or more)			
1	6.499**	1.882**	4.733**
2	1.895*	1.579*	4.187**

Table 3: (Continued)

Independent	Odds Ratios		
	Prenatal care visit	**Initiate time**	**Adequate visit**
Education(ref : no education)			
Lower primary	2.180**	2.185**	1.750*
Complete primary	14.537**	1.895**	3.573**
Lower secondary	0.080	2.039*	3.326**
Secondary and higher	0.013	3.811**	28.859**
Occupation (ref : nonagriculture)			
Agriculture	0.795	0.883	0.649
Housewife	0.514	0.685	0.839
Residence (ref : urban)			
Rural	1.541	1.061	1.147
R^2	0.368	0.127	0.209
N	1,061	913	905

* $p < .05$ ** $p < .01$

In the second model, all of the variables combined can explain 13 percent of the variation in the initiated time of prenatal care visit. Unwanted pregnancy and mistimed pregnancy have significant (at $p<0.001$) relationships with the timing of initiation of prenatal care visits. When controlling for parity and sociodemographic factors, women with an unwanted pregnancy or a mistimed pregnancy had odds of initiating a prenatal care visit in the first trimester that were 66 percent and 51 percent lower respectively than women with a wanted pregnancy (OR=0.340 and OR=0.492). The other factors significantly influencing the initiated time of prenatal care visit are parity and education. Women with a pregnancy of first and second parity had odds of initiating a prenatal visit in the first trimester that were 1.9 and 1.6 times higher than women with a pregnancy of third or higher parity (OR=1.882 and OR=1.579 respectively). Also, an early prenatal care visit was more likely for highly educated women than for women with no education. Women with lower primary, completed primary, lower secondary, and secondary education or higher had odds of seeking a prenatal visit in the first trimester that were between 1.9 to 3.8 times higher than those with no education (OR= 2.185, 1.895, 2.039 and 3.811 respectively).

In the third model, all variables combined explain 21 percent of the variation in the adequacy of prenatal visits. Both unwanted pregnancy and mistimed pregnancy had a significant relationship with the adequacy of visits after controlling for other variables. Women with an unwanted pregnancy or mistimed pregnancy had odds of having adequate prenatal visits that were 58 percent and 47 percent less than those for women with a wanted pregnancy (OR = 0.417 and OR = 0.535 respectively). Parity and education were also related to the adequacy of prenatal visits. Women with pregnancies of first or second parity are more likely to have adequate prenatal visits than those of third or higher parity (OR= 4.733 and 4.187 respectively). Odds were also higher among women at every level of education when compared with those without education. This is probably because women who had already given birth to a number of children were experienced at child bearing and giving birth and did not feel the need for a high number of prenatal care visits. Women who were more educated would have an opportunity to learn and understand about the need for pregnancy care, and were also more likely to be able to afford such care.

Discussion

The important factors found to affect whether the woman sought prenatal care were parity and education. Parity has a negative relationship with prenatal care visit behavior. This is because those women with a first pregnancy were less likely to be familiar with the process of childbirth and were likely to be anxious about their first pregnancies, while women with pregnancy experience were somewhat familiar with changes during the pregnancy; hence, they were less likely to pay attention to practicing healthy behavior (Swangtook, 1996:33). And more highly educated women may have had contact with the health care system, which would encourage them to seek prenatal care in greater proportions than lower educated women. They also are more likely to have been exposed to information regarding the benefits of prenatal care.

The situation of whether the pregnancy was planned or not affects woman's recognition of pregnancy symptoms, which is a strong predictor of early entry into prenatal care (Kost, Laundry and Forest, 1998:83). Women who intend to become

pregnant are most likely to recognize a pregnancy early because they are eagerly awaiting telltale symptoms, while women with an unintended pregnancy may remain unaware or may ignore the signs of pregnancy. For this reason most unwanted pregnancies are known later than the wanted ones. Once the pregnancy is perceived, women need to take time to think about whether to accept it, what to do next, to have it aborted or carry to term. Those deciding to terminate their pregnancies have to seek information and sources, since induced abortion is illegal in Thailand. Some of them are unable to do so or the procedure fails, so they give up and continue their pregnancies. The time spent for these decisions helps to explain the delay in initiating prenatal care visits (Brown and Eisenberg, 1995:66; Ratchukul, 1998:178).

Women having subsequent pregnancies are experienced in what happens during a pregnancy, have some knowledge about the normal and abnormal symptoms of pregnancy, and feel confident about taking care of themselves during the early period of pregnancy. This resulted in the delay of prenatal care visits (Pitakthepsombat and Wongboonsin, 1989:89). Education is a fundamental factor associated with self-health care ability and offers women an opportunity to learn and understand how to practice proper self care.

Summary and Conclusions

The respondents in this analysis were 1,061 women who experienced a pregnancy in the past two years. Women were asked about the intention of their pregnancies, and whether the pregnancy was wanted. The result showed that 30 percent of all pregnancies were unintended pregnancies, either mistimed or unwanted. One tenth of the pregnancies, or one third of unintended pregnancies, were unwanted. Unwanted pregnancies occur mostly during the late reproductive ages when women have had three or more children, and for women with lower levels of education, while mistimed pregnancies mostly occur in the early reproductive years, for the first child, and among women that have a higher level of education.

Overall, 87 percent of pregnant women obtained prenatal care, but only 61 percent of these women began prenatal care in the first trimester and 86 percent of these women obtained care at least four times through their pregnancy. This indicates that the majority of women have prenatal care but that their prenatal care is likely to be inadequate.

Looking at the effect of unwanted pregnancy on prenatal care visits, both unwanted pregnancies and mistimed pregnancies had no effect on prenatal care visits. This reflects the success of Thailand's health care services and the prenatal care campaign; most of the pregnant women seek prenatal care regardless of wanting or not wanting the pregnancy. However, those prenatal care visits differed in quality. That is, delayed prenatal care and fewer than recommended prenatal care visits occurred more often with unwanted and mistimed pregnancies. This is likely because women with unplanned or unintended pregnancies usually perceive their conception later than women who wanted to become pregnant.

The study indicates that even women with unwanted pregnancies will seek prenatal care, but they often have late initiation of prenatal care visits and an inadequate number of visits. The findings of this study have implications for practice and policy. Psychosocial assessment about pregnancy intendedness should be identified by nurses and other health care personnel at the time of the first prenatal care visit. Special interventions should be designed for these women in order to have an effective way to improve women's prenatal care.

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