Kasetsart Journal of Social Sciences 45 (2024) 991–1000

Kasetsart Journal of Social Sciences

journal homepage: http://kjss.kasetsart.org

Unintended pregnancy in a low fertility context: Insights from the national survey of Thailand

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Article Info

Article history:
Received 18 April 2023
Revised 16 October 2023
Accepted 8 November 2023
Available online 30 August 2024

Keywords:
mistimed pregnancy,
reproductive health behavior,
spouse's characteristics,
Thailand unwanted pregnancy

Abstract

Unintended pregnancy has remained a global public health issue for many decades. The evidence indicates that unintended pregnancy is prevalent not only in resource-limited, high fertility contexts, but also in countries with greater resources accompanied by low fertility. This study analyzed empirical evidence to gain a better understanding of what factors determine unintended pregnancy in the presence of low fertility. Using nationally representative survey data from Thailand, the study separated unintended pregnancies into mistimed pregnancies and unwanted pregnancies to identify any differences in terms of risk factors. The findings showed that approximately one in three women of reproductive age had experienced an unplanned pregnancy. We found similarities and differences in the risk factors that were significantly correlated with mistimed pregnancies and unwanted pregnancies. Our evidence highlights the significant impact of gender equality within a household on pregnancy unintendedness. While most attention has been given to pregnancies occurring among female adolescents, our findings show that reproductive women in older age groups also experience unintended pregnancy, indicating the need to pay specific attention to these women to help them address their reproductive and fertility challenges.

Introduction

The theme of making every pregnancy wanted has long attracted significant attention from researchers and policy makers and will likely remain a major concern for at least another decade. Recent worldwide statistics show that nearly half of all pregnancies occurring every year are still unintended (United Nations Population Fund, 2022), and the prevalence of such pregnancies is not uniform across contexts. While unintended pregnancies are typically more prevalent in poor resource settings (Eaton, 2020), several countries with more resources or higher incomes have experienced a similar problem (Bearak et al., 2020).

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https://doi.org/10.34044/j.kjss.2024.45.3.28
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Unintended pregnancy is also not uncommon in countries with low fertility. Despite the significant contribution to fertility decline of effective family planning practices (Miller & Babiarz, 2016), which may have led to a collective reduction in unintended childbearing, a recent study by Bongaarts and Casterline (2018) has revealed that the progression of fertility decline in several countries has been accompanied by an increase in the incidence of unintended fertility. This suggests that while governments are struggling to promote women's childbearing in order to reduce the economic and social impacts of population aging, they also need to help women avoid unintended pregnancy and, if such a pregnancy has already occurred, cope with its adverse and long-lasting consequences. These point to the importance of reassessing possible factors that can put women at risk of unintended pregnancies in the current context.

This study aims to provide empirical evidence to better understand what factors determine unintended pregnancy in the presence of low fertility and to what extent. More specifically, we compare whether these factors differ from those cited in earlier studies conducted in a similar demographic context, such as the US, European countries, and China. In these studies, women's individual characteristics, including age, education, union and cohabitation status, economic status (Finer & Henshaw, 2006; Finer & Zolna, 2016; Wang et al., 2023), voluntary first sexual intercourse (Aztlan-James et al., 2017), contraceptive type and use (Aztlan-James et al., 2017; Finer & Zolna, 2011), availability and accessibility of contraception services, including safe and legal abortion services (Klima, 1998), have been identified as risk factors for unintended pregnancies.

Our study relies on data from Thailand, which is a compelling case study for two key reasons. First, Thailand represents a developing context characterized by a combination of declining fertility rates and a relatively high prevalence of unintended pregnancies and abortions compared to other countries in East and Southeast Asia with similar levels of fertility, such as Japan, South Korea, and Singapore (Bearak et al., 2020). According to available estimates compiled by the Guttmacher Institute (2022), when the total fertility rate in Thailand approached the replacement level of 2.1 between 1990 and 1994, the unintended pregnancy rate stood at around 44 per 1,000 reproductive women, the same proportion as in the US in 2011. This means that approximately 4.4 in 100 Thai women of reproductive age experienced an unintended pregnancy. Subsequently, as fertility rates continued to decrease to around 1.5 during the 2000–2014 period, the corresponding prevalence of unintended pregnancies dropped by about 16–22 percent. By contrast, the abortion rate significantly increased by 30.4 percent, from 1.6 percent to 2.3 percent of reproductive women.

In the more recent 2015–2019 period, during which Thailand's fertility rate reached a remarkably low level of around 1.3 (United Nations, 2022), a slight increase occurred in the unintended pregnancy and abortion rates, to 3.8 percent and 2.5 percent, respectively (Guttmacher Institute, 2022). When compared to other low-fertility countries in the Southeast Asian region, Thailand ranks second to Vietnam, which has the highest rates of both unintended pregnancies and abortions at 8.6 percent and 6.4 percent, respectively. In contrast, Singapore stands at the opposite end of the scale, having the lowest rates of unintended pregnancies at 1.9 percent and abortions at a mere 0.5 percent (Bearak et al., 2020).

Second, Thailand has a paucity of evidence on pregnancy intentions among middle and older reproductive-age women (namely, those aged 25–34 and 35–49 years). Research and policy attention over the past two decades has largely focused on adolescent women, for whom unintended pregnancy is portrayed as teen pregnancy. Since women in older reproductive age groups are also exposed to the risk of unintended pregnancy, ignoring them may result in misleading information and thus ineffective policies. Among the limited available studies covering Thai women in all reproductive age groups, almost all have been carried out based on small-scale surveys in clinics or hospitals, and most view unintended pregnancy merely as one of the risk factors barring the uptake of maternal services (Masmalai et al., 2010).

In this study, we seek to fill this research gap by examining pregnancy intentions through a large, population-based sample survey, which permits us to explore a greater number of socio-demographic and behavioral risk factors than those examined in previous studies. We also investigate the extent of the partnership role, which the recent literature has indicated may affect women's pregnancy intention in a low fertility society (Sayahi et al., 2017). Rather than using a dichotomous measure of pregnancy intention, we classify unintended pregnancy into mistimed and unwanted pregnancies to account for the differences in their meanings and implications for pregnancy-related health behaviors, as suggested in literature (D'Angelo et al., 2004). Our findings provide a guideline for the formulation of future policies to properly address unintended pregnancy while simultaneously dealing with low fertility.

Methodology

Data

We analyzed data from the 2016 nationally representative, cross-sectional survey Population Change and Well-Being in the Context of Aging Societies

(PCWAS) conducted by the College of Population Studies at Chulalongkorn University in Thailand. Aiming to gain a better understanding of Thailand's current situation related to low fertility in the context of an aging society, the PCWAS explored fertility and the reproductive preferences and behaviors of Thai women who were of reproductive age (15–49 years) at the time of the survey (College of Population Studies, 2018). Utilizing a two-stage stratified random sampling approach and face-to-face interviews, the sample consisted of 9,457 female respondents living in 15,225 sampled households located in 21 provinces representative of Thailand's five regions, including Bangkok. Ethical approval to carry out the survey was granted by the Institutional Review Board of Chulalongkorn University (COA No.095/2559).

The sample included in the current study was confined to 1,698 female respondents who reported having given at least one live birth within the five years preceding the survey. The five-year period was imposed, as suggested in literature (Ameyaw, 2018), to minimize potential recall bias in reporting retrospective pregnancy intention. Due to our interest in examining the role of partners on women's pregnancy intention, the sample was further restricted to those who provided complete information on variables regarding their spouse (N = 1,549, 91.2%). As a result of these restrictions, women who were never-married, widowed, or divorced were excluded from the analysis. Finally, respondents with missing or invalid information on any variables used in the analysis were excluded, resulting in a final analytic sample size of 1,476. Missing data accounted for 5 percent of the sample with complete spouse information.

Variable Measurement

Pregnancy intention was constructed based on the respondents' answers to two separate questions regarding their own and their partner's intendedness during their last pregnancy. The first question asked if the respondent and her partner had planned/intended the pregnancy at the time of her last pregnancy. Those who reported that the last pregnancy was unintentional on the part of either or both partners, or that any outcome was fine, were probed further to determine whether they did not want to have a baby at that time, or whether they did not want any (additional) children. These unintentional pregnancies were further categorized into mistimed pregnancies (if the respondent reported that she and/or her spouse had wanted the pregnancy to occur either sooner or later) and unwanted pregnancies (if the respondent reported that she and/or her spouse had not wanted the pregnancy at all).

Socio-demographic characteristics of women. Age was incorporated as a continuous variable. Educational attainment was measured as a categorical variable indicating whether the respondent had some primary, primary, secondary, or beyond secondary education. Place of residence and region were included following the country's official administrative definition.

Fertility and reproductive health behaviors. There are several variables regarding the fertility and reproductive health behaviors indicated in the literature to be potentially associated with pregnancy intendedness. Age at first marriage was incorporated as a dichotomous variable indicating whether the respondent was married or in union before reaching the age of 20. Parity was referred to the previous number of children the respondent had, measured as a categorical variable indicating whether the respondent had zero, one, or two or more live born children prior to their last pregnancy. Contraceptive use was assessed through the respondent's experience using contraceptives at least once in her lifetime and was incorporated as a dichotomous variable. Abortion experience was measured through two questions regarding experience with induced abortion and spontaneous abortion (miscarriage). Respondents who reported having experienced either induced or spontaneous abortion were considered to have had an abortion experience. Family planning counselling was derived from a question asking whether the respondent or her spouse had ever consulted any medical personnel about family planning before getting married. Notably, this question left the definition of family planning up to the respondents, who likely thought of it either in a narrow, generic sense (i.e., contraceptive use) or a broader sense (e.g., planning for the number of children, the age at which the couple wished to have children, contraceptive use, and treatment of infertility). Perceived infertility was constructed based on the respondent's self-assessment regarding whether she and/or her spouse thought that they had had difficulty conceiving or were infertile. Couples who thought there had been difficulty in achieving pregnancy were regarded as having perceived infertility.

Background characteristics and influence of spouse. The role of the spouse in pregnancy intention was measured in two dimensions. The first dimension—background characteristics—was assessed through spousal age difference and educational attainment. Spousal age difference indicated the difference between the husband's age and the wife's age and was incorporated into the analysis as a categorical variable. Similar to that of women, education was measured as a categorical variable indicating whether the spouse had some primary, primary, secondary, or beyond secondary education. The influence of the husband was measured based on household spending decision-making and discussions between spouses about the preferred number of children.

The first measure was derived from a question asking who in the respondent's family made decisions on household spending; this was incorporated as a categorical variable indicating whether decisions on household spending were made jointly by the respondent and her spouse, by the respondent only, by the spouse only, or by another family member. The discussion between husband and wife regarding the number of children was measured as a dichotomous variable indicating whether the respondent had ever discussed this with her husband.

Statistical Analysis

The study employed both descriptive and multivariate analyses. The descriptive analyses were used to examine the distributions of the outcome variable and possible correlates disaggregated by the status of pregnancy intention—that is, intended, mistimed, and unwanted. Pearson's Chi-square and t-tests were used to test the bivariate association between the outcome variable and each covariate. For the multivariate analyses, three sequential multinomial regressions were used to fit the models. Multinomial regressions were employed because the outcome variable had more than two discrete categories. The first model considered pregnancy intendedness as a function of women's socio-demographic characteristics; the second model added fertility and reproductive health behaviors, and the last model incorporated the husbands' influence. In each model, intended pregnancy was treated as the reference category due to the study's aim of identifying the likelihood of mistimed and unwanted pregnancies and because it constituted the highest proportion for this variable.

Prior to the multivariate analyses, the variance inflation factor (VIF) was applied to detect the potential for multi-collinearity among the independent variables. None of these variables demonstrated VIFs of greater than three, suggesting that the multi-collinearity issue in the present study was negligible (James et al., 2013). To adjust for the differential probabilities of sample selection, the results were weighted to be nationally representative using the sample weights provided in the dataset.

Results

Descriptive Results

Table 1 presents a description of the characteristics of the sampled women who had given birth at least once in the five years prior to the survey according to the intendedness of their pregnancy—that is, intended, mistimed, or unwanted.

Table 1 Description of analytic variables according to pregnancy intention status

Variable	All	Intended	Unintended		*p* value[a]
			Mistimed	Unwanted	
Pregnancy intention status	100.0	70.5	19.2	10.3	
Socio-demographic characteristics of women					
Mean age (years)	29.6	29.9	25.98	34.04	.00
Education (%)					.00
Some primary	2.5	1.8	1.5	9.2	
Primary	12.4	9.8	14.9	25.5	
Secondary	56.1	54.3	64.0	54.2	
Post-secondary	29.0	34.1	19.6	11.1	
Worked last year (%)	78.2	79.8	73.8	76.0	.08
Urban (%)	42.0	41.2	45.6	40.9	.40
Region (%)					.00
Bangkok	12.0	11.8	12.0	13.8	
Central	32.8	32.1	37.5	29.6	
North	13.9	11.5	18.5	21.7	
Northeast	26.0	28.9	17.8	21.1	
South	15.3	15.7	14.2	13.8	
Fertility and reproductive health behaviors					
Parity (%)					.00
0	46.0	48.0	59.3	8.4	
1	37.5	41.0	29.5	27.9	
2+	16.5	10.9	11.3	63.6	
Married before age 20 (%)	50.1	44.0	62.5	69.5	.00
Had abortion experience (%)	15.0	15.6	10.6	18.8	.04

Table 1 Continued

Variable	All	Intended	Unintended		*p* value[a]
			Mistimed	Unwanted	
Ever used contraceptive (%)	98.2	97.6	99.6	100.0	.02
Perceived infertility (%)	11.7	12.9	11.3	4.5	.01
Sought family planning counselling (%)	10.6	10.5	10.9	11.0	.96
Background characteristics and influence of spouse					
Age difference between women and spouse (%)					.00
< 1 year	20.7	19.4	28.1	16.3	
1–4 years	43.2	46.3	37.2	33.3	
5–9 years	24.5	23.1	20.8	40.5	
10 years and over	11.6	11.2	13.9	9.8	
Husband's education (%)					.00
Some primary	4.3	3.1	6.5	9.1	
Primary	17.7	15.8	18.9	27.9	
Secondary	51.8	51.6	52.4	52.6	
Post-secondary	26.2	29.5	22.2	10.4	
Ever discussed with husband (%)	71.8	76.9	57.1	63.6	.00
Household spending decision (%)					.00
Jointly between women and husband	44.2	47.7	36.1	34.6	
Women only	35.5	34.8	36.1	38.6	
Husband only	10.6	9.9	11.7	13.7	
Other	9.7	7.6	16.1	13.1	
Unweighted number of observations	1,476	1,041	283	152	

Note: A Chi-square test and a T-test were used to compare differences between the three pregnancy intention statuses for categorical and continuous variables, respectively.
Source: College of Population Studies (2018).

Approximately 30 percent of Thai women reported that their last pregnancy was unintended, and two-thirds of these were indicated as mistimed pregnancies. The average age of the women in each of these three groups ranged between 26 and 34 years. Women with an unwanted pregnancy were significantly older than those in the other two groups. The vast majority of the mothers had at least a secondary education. There were fewer mothers in the intended pregnancy group who had some primary education or who had completed primary education (11.6%) than in the mistimed (16.4%) and unwanted (34.7%) pregnancy groups. In all three groups, more than 70 percent worked during the year prior to the survey, but the proportion was higher for the intended group than for the mistimed and unwanted groups. Fewer than half of the women in each group were urban residents. The largest proportions of women in all three groups resided in the Central region, accounting for around one-third of the total sample, whereas the smallest proportion was located in Bangkok (12%). The regional distributions of intended and mistimed pregnancies were coherent with that of the total sample of women, while for the unwanted pregnancy groups, the proportions were distinctively higher in the North region but lower in the Northeast region.

Regarding fertility and reproductive health behaviors, women with mistimed and unwanted pregnancies were noticeably more likely than their counterparts in the intended group to get married before the age of 20. Almost half of the women with intended pregnancies and more than half of those with mistimed pregnancies were first-time mothers. Women with at least two children constituted the largest proportion in the unwanted pregnancy group. The experience of having an abortion was most prevalent in the unwanted pregnancy group and least prevalent in the mistimed pregnancy group, with the intended pregnancy group falling in between. Contraceptive use was virtually universal in all three groups. Around 12–13 percent of women with intended pregnancies or mistimed pregnancies had perceived themselves or their spouses to be infertile. The proportion holding this perception was three times lower for those with unwanted pregnancies. In addition, seeking premarital counselling for family planning was uncommon across all of these groups of women.

In terms of the background characteristics of the women's spouses, almost half of the women in the intended pregnancy group and around one third of those in both unintended pregnancy groups had an age gap between themselves and their spouse of 1–5 years.

Couples with an age difference of 5–10 years constituted the largest proportion of the unwanted pregnancy group. Similar to the educational pattern for the women, the majority of their spouses had also attained at least a secondary education. Note, however, that even though spouses with only some primary education made up the smallest proportion in all three groups, these proportions were at least two times greater for both of the unintended pregnancy groups compared to the intended pregnancy group. The majority of women in all three groups indicated that they had discussed at least once with their spouse the number of children they wished to have. Almost half of the women in the intended pregnancy group resided in a household in which decision-making on household spending was bilateral (jointly managed by the woman and her spouse); around one third of the women in the intended pregnancy group said they made these decisions by themselves. In both of the unintended pregnancy groups, the proportions of households making joint decisions and households with women making the decisions were relatively equally distributed. Only around 10–14 percent in each group reported living in a household in which the husband had sole authority over household spending.

Multivariate Results

The study focused on describing the correlates of experiencing mistimed and unwanted pregnancies as opposed to an intended pregnancy, and the extent to which these correlates changed when fertility and reproductive health behaviors and spouse's characteristics and influence were considered in the model. The multinomial logistic regression results are expressed as odd ratios showing the likelihood of having a mistimed or unwanted pregnancy as opposed to an intended pregnancy—the omitted reference. A statistically significant odds ratio greater than 1 indicates a higher chance that the pregnancy was unintended, associated with a particular category relative to the reference category, while an odds ratio less than 1 suggests the contrary.

As shown in Table 2, Model 1 showed a significant, yet inconsistent, *association between age and unintended pregnancy*. Being older appeared to reduce the risk of a mistimed pregnancy while significantly increasing the risk of an unwanted pregnancy. In terms of educational attainment, while being better educated—particularly having at least a secondary education—tended to decrease the likelihood of having an unintended pregnancy, this was only statistically significant for women with an unwanted pregnancy. Model 1 further revealed mixed results related to geographical location of residence. Urban residence appeared to be positively associated with the likelihood of an unintended pregnancy, but this was only statistically significant for mistimed pregnancies. The relationship between region of residence and unintended pregnancy was also inconsistent. While women living in the Northeast region seemed to have a lower risk of unintended pregnancy than women living in Bangkok, this association was only true for women with a mistimed pregnancy. Women from the Northeast region had a 47 percent less chance of a mistimed pregnancy than their counterparts in Bangkok.

In Model 2, all of the statistically significant odds in Model 1 remained almost unchanged, except for educational attainment. When accounting for fertility and reproductive health behavior, the results demonstrated no significant difference in pregnancy intention across women with different educational levels. Parity exhibited the strongest correlation with unintended pregnancy. With all else being equal in Model 2, parity, particularly having had two or more children, significantly increased the likelihood of an unintended pregnancy. Age at first union showed mixed results. The odds of an unwanted pregnancy increased significantly if women had been first married after age 20. An opposite association was apparent among women with mistimed pregnancies, but it had no statistical significance. Also noteworthy, living in the Northeast region was shown to significantly correlated with the odds of having an unwanted pregnancy after controlling for fertility and reproductive health behaviors. In terms of reproductive health behaviors, in contrast to our expectations, the multivariate results indicated no significant difference in women's pregnancy intentions both among those who had and those who had not experienced an abortion, difficulty in conceiving or sought family planning counselling.

In Model 3, in which the spouse's characteristics and roles were taken further into account, all statistically significant covariates in Model 2 remained statistically associated with women's pregnancy intention. Furthermore, the results showed a positive association between a woman's age difference from her spouse and the spouse's education and having a mistimed pregnancy. The odds of having a mistimed pregnancy decreased significantly for an age gap of five years or more and when the spouse had completed primary or secondary education. The results also showed a significant and consistent correlation between household spending decision-making and pregnancy unintendedness. Women who resided in a household in which decisions on household spending were jointly managed by the woman and her spouse or made solely by the woman were significantly less likely to experience a mistimed or unwanted pregnancy compared to those living in a household in which spending was controlled by others.

Table 2 Odds ratios from multinomial logistic regression predicting likelihood of unintended pregnancy, Thai women aged 15–49 who gave birth within the previous five years, 2016

Variable	Model 1				Model 2				Model 3			
	Mistimed		Unwanted		Mistimed		Unwanted		Mistimed		Unwanted	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Age (Continuous)	0.91***	[0.89,0.93]	1.10***	[1.07,1.14]	0.90***	[0.87,0.93]	1.05*	[1.01,1.10]	0.90***	[0.87,0.93]	1.05*	[1.01,1.10]
Education (Some primary=ref)												
Primary	1.88	[0.56,6.26]	0.68	[0.30,1.55]	2.06	[0.60,7.02]	1.05	[0.42,2.63]	2.35	[0.65,8.53]	0.69	[0.26,1.84]
Secondary	0.98	[0.31,3.13]	0.42*	[0.19,0.91]	1.12	[0.34,3.66]	0.86	[0.36,2.08]	1.45	[0.41,5.11]	0.62	[0.24,1.62]
Post-secondary	0.70	[0.22,2.27]	0.10***	[0.04,0.23]	0.82	[0.24,2.76]	0.37	[0.13,1.01]	0.94	[0.25,3.52]	0.33	[0.11,1.03]
Worked last year (No=ref)	0.93	[0.67,1.30]	0.85	[0.55,1.32]	0.94	[0.67,1.32]	1.01	[0.62,1.62]	1.08	[0.75,1.55]	0.97	[0.59,1.60]
Urban (Rural=ref)	1.46*	[1.07,2.00]	1.06	[0.69,1.63]	1.47*	[0.17,2.02]	1.34	[0.84,2.13]	1.43*	[1.03,1.99]	1.39	[0.86,2.25]
Region (Bangkok=ref)												
Central	1.11	[0.68,1.81]	0.9	[0.48,1.70]	1.10	[0.67,1.80]	0.82	[0.41,1.65]	1.05	[0.63,1.75]	0.92	[0.44,1.93]
North	1.58	[0.89,2.83]	1.65	[0.79,3.42]	1.58	[0.88,2.84]	1.84	[0.82,4.13]	1.73	[0.94,3.17]	2.02	[0.86,4.77]
Northeast	0.53*	[0.30,0.91]	0.58	[0.29,1.52]	0.51*	[0.29,0.89]	0.41*	[0.19,0.87]	0.57	[0.32,1.01]	0.43*	[0.19,0.97]
South	0.98	[0.55,1.76]	0.75	[0.36,1.59]	0.94	[0.52,1.69]	0.61	[0.27,1.37]	0.84	[0.46,1.53]	0.59	[0.25,1.37]
Parity (0=ref)												
1					1.00	[0.70,1.43]	2.57**	[1.29,5.10]	1.00	[0.68,1.46]	2.72**	[1.34,5.51]
2+					2.01*	[1.15,3.53]	16.91***	[8.11,35.29]	1.86*	[1.04,3.33]	18.41***	[8.51,39.83]
Age at first marriage (<20=ref)					0.93	[0.63,1.36]	1.90**	[1.16,3.10]	0.98	[0.66,1.45]	1.82*	[1.10,3.01]
% with abortion experience (No=ref)					0.89	[0.57,1.39]	0.95	[0.56,1.61]	0.83	[0.52,1.34]	0.95	[0.55,1.63]
% Perceived infertility (No=ref)					1.06	[0.68,1.66]	0.42	[0.18,1.01]	1.10	[0.70,1.75]	0.42	[0.17,1.02]
% Sought family counselling (No=ref)					0.98	[0.62,1.54]	1.09	[0.57,2.07]	0.76	[0.46,1.24]	1.47	[0.76,2.83]
Age difference (<1 year=ref)												
1–4 years									0.58	[0.40,0.84]	0.79	[0.44,1.44]
5–9 years									0.53**	[0.34,0.82]	1.75	[0.95,3.25]
10 years and over									0.64**	[0.38,1.07]	0.43	[0.19,1.01]
Husband's education (Some primary=ref)												
Primary									0.38*	[0.18,0.81]	1.85	[0.71,4.82]
Secondary									0.34**	[0.16,0.68]	1.53	[0.60,3.90]
Post-secondary									0.50	[0.23,1.09]	0.84	[0.28,2.56]
% ever discussed with husband (No=ref)									0.45	[0.33,0.62]	0.72	[0.46,1.12]
Household spending decision (Other=ref)												
Joint decision									0.42***		0.27***	[0.13,0.55]
Solely by women									0.56*		0.38**	[0.18,0.79]
Solely by spouse									0.60		0.43	[0.18,1.03]
–2 Log likelihood	1,583,63				1,807.63				1,819.76			
Nagelkerke R-square	0.21				0.31				0.36			
Unweighted number of observations	283		152		283		152		283		152	

Note: Intended pregnancy = reference category;
*$p < .05$. **$p < .01$. ***$p < .001$.
Source: College of Population Studies (2018).

Discussion

Using nationally representative survey data from Thailand, this study sought to identify factors associated with unintended pregnancy. Our findings reveal that unintended pregnancies are quite common among Thai women of reproductive age, with around one in three reporting that their last pregnancy had been unintended. This survey-based result is consistent with the model-based result produced by the Guttmacher Institute (2022). In addition, among unintended pregnancies, mistimed pregnancies are more common than unwanted pregnancies for women overall (Adams, 2009) and particularly for those in younger age groups, as evident in previous research (Beguy et al., 2014; Dutta et al., 2015; Omani-Samani et al., 2018).

The study's multivariate regressions identified several socio-demographic factors associated with mistimed and unwanted pregnancies, including age, age at first marriage, parity, and region. We found that the older the women when the pregnancy occurred, the lower their odds of experiencing a mistimed pregnancy. In the case of an unwanted pregnancy, we observed an inverse association, with older women having a greater chance of reporting an unwanted pregnancy. This finding is in line with findings from other studies focusing on both high fertility (Wasswa et al., 2020) and low fertility countries (Omani-Samani et al., 2018). The inconsistent results between mistimed and unwanted pregnancies in terms of age can be partially explained by desired family size, with older women being more likely to have already achieved their desired number of children and wanting to control their family size.

Earlier studies in high fertility contexts and low fertility contexts, such as Japan (Goto et al., 2002) and Nepal (Adhikari et al., 2009), have consistently shown a negative association between age at first marriage and unintended pregnancy, particularly mistimed pregnancies. Our results partially support these earlier findings. Our multinomial regression results indicate that the association is only true for women with an unwanted pregnancy. We found no statistical difference in the likelihood of a mistimed pregnancy between women who married earlier or later the age of 20. As expected, and in line with previous studies (Bekele et al., 2020; Mohamed et al., 2019), women with a higher number of previous children, particularly two, were significantly more likely to experience both mistimed and unwanted pregnancies. The findings further indicate that women living in the Northeast region were significantly less likely to experience an unwanted pregnancy as compared to Bangkok. One possible reason could be that the Northeast region, known as Isan, once had the highest total fertility rate in Thailand, so it became a government target for family planning programs in order to reduce the high birth rate, thereby addressing poverty (Whittaker, 1998). This likely facilitated residents' access to family planning services and promoted the consistent and correct use of contraceptives. Nevertheless, the reason for the cross-regional differences remains an open question and warrants further investigation.

Our study contributes to the existing body of knowledge regarding the favorable influence of spousal characteristics and household decision-making role on unintended pregnancy risk. Our findings reveal that an age difference of at least 5 years between a woman and her spouse significantly lowered the likelihood of a mistimed pregnancy. In previous studies, age asymmetries between married or sexual partners have been found to make the relationship unequal, often limiting the women's decision-making, especially in terms of risky sexual behaviors, including contraceptive uses (Darroch et al., 1999; Luke, 2005). However, the results from our study suggest the contrary. The positive effect of an age gap could be explained through differences in maturity and life experiences (Ibisomi & Mudege, 2014), which may in turn enhance the ability of the couple, particularly the woman, to more effectively make and implement a childbearing plan. The present study also reveals the benefit of the spouse's education on preventing a mistimed pregnancy. This result is broadly consistent with other studies, which have found that women with a better-educated spouse were less likely to experience an unintended pregnancy (Dixit et al., 2012; Hall et al., 2016). In African regions in which women's education is limited, spouse's education has been shown to promote the wife's reproductive health-related decisions (Seifu et al., 2020). In the Thai context, our study points to the salient effect of spouse's education, which moderated the association between women's lower education level and pregnancy unintendedness. These findings suggest that the indirect effect of the spouse's education may be more important to pregnancy intendedness than the direct effect of women's formal education.

Finally, our study lends support to previous studies' findings that women's lower status in the household is associated with unintended pregnancy (Ram et al., 2022). Our findings reveal that women's participation in decision-making on household spending, regardless of degree of participation (i.e., full or partial), significantly reduces the likelihood of mistimed and unwanted pregnancies compared to those living in a household with different decision-making arrangements. The literature has shown that women are more likely to have financial anxiety and to be more risk averse than men (Wagner & Walstad, 2022).

Given the high costs of childbearing and childrearing, women with full or partial responsibility for household resources may be more likely to prepare for childbearing and parenthood both financially and emotionally, thereby avoiding a pregnancy that they do not want.

While our study sought to add the demographic nuance of a low fertility context to the existing empirical studies on unintended pregnancy, we found that in Thailand several important determinants of unintended pregnancy, either mistimed or unwanted, are by and large similar to those for overall unplanned pregnancy in several high fertility contexts, such as India and various African countries. Two remarkable exceptions highlighted by our study include the strong effects of parity, namely, more than two children, a characteristics of low fertility contexts, and women's involvement in household financial decisions.

Nonetheless, because this study utilized secondary cross-sectional survey data, the results are subject to certain limitations. Firstly, due to the nature of cross-sectional data, no causal relationship could be drawn between unintended pregnancy and the explanatory variables. Secondly, the information related to spouses and sexual and reproductive health behavior relied entirely on the women's accounts. Several variables—such as pregnancy intention, abortion experience, and infertility—carry a stigma towards the women themselves, the spouse, and the baby. As such, a possibility exists that some of the women did not report their true experiences, as they might have wanted to be viewed favorably by the interviewers. In Thailand, the demographic, socio-economic, as well as legal contexts surrounding women's pregnancy and childbearing decisions have evolved significantly over the past few years. Notable changes include the relaxation of early abortion within 20 weeks of gestation in 2021. While this measure is likely to reduce the number of children born due to unintended pregnancies, it is uncertain whether it will reduce unintended pregnancies or promote them as abortion becomes viewed as a contraceptive method. In light of this significant challenge, further research must continue tracking these trends and re-assessing the factors associated with unintended pregnancies in this changing context.

Conclusion

Unintended pregnancy has remained commonplace in Thailand despite the country's persistently low fertility level. The issue, in contrast to general social conceptions conjured by the image of adolescent pregnancy, is common among young adult and middle adult women, as evident in our study. Based on large-scale population survey data, multiple risk factors were identified for mistimed and unwanted pregnancies. Our findings highlight the importance of the spouse or partner's characteristics and women's involvement in household financial decisions on unplanned pregnancy, emphasizing the need for policies to empower women and promote gender equality within households. The prevalence of unintended pregnancy speaks to the need for greater attention from policymakers and public health practitioners to address the issue more effectively. While various policy options can contribute directly to reducing unintended pregnancies among women in the middle and older reproductive ages, such as expanding sex education and reproductive health services to address their specific needs, we strongly advocate for efforts to enhance equality between spouses within families, such as promoting shared decision-making. We propose that gender equality should serve as the foundational element of these initiatives.

Conflict of Interest

The authors declare that there is no conflict of interest.

Acknowledgments

This research was partially supported by Chulalongkorn University Graduate School through the 72nd Anniversary of His Majesty King Bhumibhol Aduyadej Scholarship Program. WP is supported by Thailand Science research and Innovation Fund Chulalongkorn University (SOC66510013).

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