Original Article

JHAS 2021; 11(2): 87-93
DOI: https://doi.org/10.37107/jhas.268

An Analysis of Contraceptive Method Choice among Married Women of Kanchanaburi Demographic Surveillance site in Thailand

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ABSTRACT

Introduction: The Fertility of Thailand declined to 1.6 in 2014 compared to 6.5 in the early sixties. This fertility revolution was accompanied by a concurrent revolution of contraceptive behavior among Thai people. This study examined the role of individual and geospatial factors to explain the variation in contraceptive method choice among married in two selected districts of Kanchanaburi Province, Thailand.

Methods: The sample size in this study was 1468. The study population was currently married women of reproductive age (15-49 years) who were residing in two selected districts of Kanchanaburi province, Sai Yok and Muang districts, collected under the Kanchanaburi Demographic Surveillance Site (KDSS) project from 2004 to 2006. The study performed multinomial logistic regression for statistical analysis and Arc view GIS for spatial analysis to identify the factors associated with contraceptive method choice.

Results: The women in the middle age group and urban women were more likely to use permanent methods over non-use and temporary methods compared to young and rural women respectively. Women having higher than secondary education used both temporary and permanent contraceptive methods 2.5 times more than uneducated women (AOR 2.43; 95% CI 1.33– 4.46 for temporary versus none and AOR 2.54; 95% CI 1.29 – 5.01 for permanent versus none respectively). If women have no children, they were significantly less likely to use permanent method over non-use as well as over temporary methods. Geo-spatial analysis results showed transportation facilities determine the contraceptive choice.

Conclusion: The better transportation network facilitated women to use a permanent contraceptive method rather than the temporary method. It is necessary to establish a better transportation system and education system in the areas, especially in the mountainous regions to improve accessibility and to realize reproductive health services. Further, investments in increasing women's access to various contraceptive options are urgently needed.

Keywords: *Contraceptive method, Fertility, Married women*

INTRODUCTION

Fertility has been declining steadily over the past few decades around the world and Thailand is not an exception.[1,2] In the early sixties, the total fertility rate of Thailand was 6.5 children per woman. Partly as the result of a National Family Planning Program (NFPP), fertility had declined to 4.9 children per woman in 1975. By the early 1980s, it had declined to below.[3] A survey of fertility in Thailand for 1996 shows an average number of children per woman of 2.14.3 Thailand had a fertility rate of 1.60 children born per woman in 2014 and will be declining in the coming years.[4]

This fertility revolution was accompanied by a concurrent revolution of contraceptive behavior. Major components behind the extraordinary change in the fertility behavior of the Thai population are; economic boost, religiously positive attitude towards family planning, successful national family planning awareness program and availability of modern contraceptives methods.[5] Contraceptive prevalence among reproductive age women (% of women ages 15-49) in Thailand rose dramatically from 15 to 75 % in 1970 to 2000 and slightly increased up to 79.6% in 2012. Its highest value over the past 40 years was 79.60 in 2012, while its lowest value was 14.80 in 1970. Considering all these aspects, it can be regarded that the

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family planning program in Thailand is successful and is in the stage of self-sustained growth.

Fertility and contraceptive behavior is a complex demographic phenomenon. There are numerous studies on whether or not contraception is used, there has been little attention focused on determinants of contraceptive method choice and how it is distributed spatially. Thailand provides an especially interesting context in which to examine the issue of method-choice as the country has a very successful family planning program with a variety of methods available for clients. Contraceptive method choice is the choice among variety of contraceptive methods, including options of not using any method.[6] The objective of this study is to examine the role of individual factors and geo-spatial factors to explain the variation in contraceptive method choice in two selected districts of Kanchanaburi Province Thailand. The specific objectives were to analyze the individual factors affecting contraceptive method choice in study areas and to examine the spatial variation in contraceptive method choice.

METHODS

The data collected under the Kanchanaburi Demographic Surveillance Site (KDSS) was used for this study. KDSS was a five-year-long project that collected data in the period of 2000 to 2004. The project is conducted in selected areas of Kanchanaburi province, Thailand by the Institute for Population and Social Research (IPSR), Mahidol University and, supported by the Welcome Trust, United Kingdom.

Two districts, namely Sai Yok and Muang districts were selected to answer research questions for this study. The Sample size in this study was 1468. The study population was currently married women of reproductive age (15-49 years) who were residing in two selected districts of Kanchanaburi province, Sai Yok and Muang districts, in KDSS.

The independent variables included in the study were socio-economic characteristics such as age, residence, level of education, employment status and, reproductive health characteristics such as the number of living children and gender composition of children. The dependent variable was the contraceptive method choice. Contraceptive method-choice in the present study refers to women's current methods only. The temporary method included all traditional or modern contraceptive methods which are reversible. Permanent method was meant to be male or female sterilization; 1 = none, 2 = Temporary method, 3 = Permanent method.

This study recoded family planning methods in two methods temporary methods and permanent methods because family planning methods evolve over the life-course both at the individual and population level depending on circumstances such as on the number of children, the timing and spacing of birth, childbearing desires, fertility trends and the age structure of women of reproductive age.

The analysis included descriptive, bivariate and multinomial logistic regression and spatial techniques were used to generate maps through ArcView GIS 3.3. As a bivariate analysis, chi-square statistics were used to describe the distribution of individual socio-demographic characteristics and their contraceptive method choice. Multinomial logistic regression was used to identify associated determinants of modern contraceptive method choice. Spatial techniques were used to map the distribution of different contraceptive method choice in the Kanchanaburi area.

RESULTS

It can be seen from the Table 1 that the average age of women included in the study was 34.2 with standard deviation 8.3. Approximately (15%) of women were in the youngest age group (15-24 years) and around half of women were in the age group of 35-49 years. Most of the women involved in the study (65%) were residing in rural area and about one-third of them were living in an urban area. More than two-thirds of the respondents were employed. In terms of education level, (90%) of the respondents were completed at least primary level education and among them, approximately (20%) had higher than secondary level education whereas only (10%) were illiterate.

Regarding reproductive health characteristics, nearly (40%) of respondents had no child. More than half of women had two or three children and (10%) of women had at least four children. The average number of children women had was 1.94 with standard deviation of 1.26, ranging from 0 to 9 children, (40.3%) of respondents had already had children of both genders, (25%) had only son/s, (25%) had only daughter/s, and the rest did not have either son or daughter.

The percentage of respondents who were currently not using any contraceptive method was 22%. Among those who were using some contraceptive method, more than half (60%) were using temporary methods such as pills, injections, IUD, Norplant, condom, withdrawal or safe period while 40% were using a permanent method such as male or female sterilization.

Table 1 also shows that chi square test apart from employment status, socioeconomic characteristics such as age, residential area, and education level were significant factors of contraceptive method choice among married women of reproductive age. Reproductive factors such as the number of living children and gender composition of children were found to be significantly associated with contraceptive method choice.

Table 1: Bivariate analysis of individual characteristics of married women of reproductive age and contraceptive method-choice

	Non-use		Temporary		Permanent		
Variable	Number (n)	Percent (%)	Number (n)	Percent (%)	Number (n)	Percent (%)	p value
Age Group							
15-24	56	26.7	145	69	9	4.3	
25-34	107	19.3	326	59	120	21.7	<0.001
35-49	160	22.7	216	30.6	329	46.7	
Mean (SD)	34.22 (9.33)		31.04 (7.37)		38.76 (6.59)		
Residence							
Rural	205	21.5	477	50.1	270	28.4	0.001
Urban	118	22.9	210	40.7	188	36.4	
Employment Status							
Unemployed	73	22	157	47.3	102	30.7	0.974
Employed	250	22	530	46.7	356	31.3	
Education Level							
No Education	40	27.2	55	37.4	52	35.4	
Primary	183	21	408	46.8	281	32.2	0.004
Secondary	37	22.7	95	58.3	31	19	
Higher Secondary	63	22	129	45.1	94	32.9	
No. of Children							
2 or Less	272	25.3	571	53.1	233	21.7	
3 to 4	43	12.6	104	30.6	193	56.8	<0.001
5 or More	8	15.4	12	23.1	32	61.5	
Mean (SD)	1.32 (1.34)		1.71 (1.08)		2.74 (1.05)		
Gender composition of Children							
No son nor daughter	103	65.2	54	34.2	1	0.6	
Only son	73	19.8	209	56.6	87	23.6	<0.001
Only daughter	70	20	209	59.7	71	20.3	
Both	77	13	215	36.4	299	50.6	

Multinomial logistic regression

It can be seen from Table 2 that compared with the youngest age group (15-24 year), the women in the middle age group (25-34 year) were approximately three times more likely to use permanent method over non-use and temporary method (AOR 3.01; 95% CI 1.344 - 6.755 and AOR 3.93; 95% CI 1.899 - 8.148 respectively. Urban women were more likely to use permanent method over non-use (AOR 1.159; 95% CI 1.060 -2.294) and over temporary method (AOR 1.918; 95% CI 1.387 - 2.653) compared with rural women.

Compared with uneducated women, women having higher education level were not significantly more likely to use permanent method over temporary method. However, women having higher than secondary education used both temporary and

permanent contraceptive methods 2.5 times more than uneducated women (AOR 2.43; 95% CI 1.33–4.46 for temporary versus none and AOR 2.54; 95% CI 1.29 – 5.01 for permanent versus none respectively). If women did not have any son or daughter, they were significantly less likely to use permanent method over nonuse as well as over temporary method compared with women who had both son and daughter (AOR 0.003; 95% CI 0.00 – 0.026 for permanent versus none and AOR 0.033; 95% CI 0.004 – 0.245 for permanent versus temporary respectively). Similarly, women having only son or daughter were less likely to use permanent method than those who had both son and daughter.

Table 2: Factors associated with contraceptive method choice among women in study districts using multinomial logistic regression

Variables	Temporary vs None		Permanent vs None		Permanent vs Temporary	
	Adjusted odds ratio	95% Confidence interval	Adjusted odds ratio	95% Confidence interval	Adjusted odds ratio	95% Confidence interval
Age Group (yr)						
15-24 (RC)						
25-34	0.776	0.495 - 1.186	3.013**	1.344 - 6.755	3.933***	1.899 - 8.148
35-49	0.289***	0.182 - 0.458	3.149**	1.407 - 7.047	10.897***	5.254 - 22.601
Residence						
Rural (RC)						
Urban	0.813	0.578 - 1.143	1.159*	1.060 -2.294	1.918***	1.387 - 2.653
Education Level						
No Education (RC)						
Primary	1.317	0.815 - 2.129	1.261	0.749 - 2.125	0.958	0.604 - 1.518
Secondary	1.902*	1.010 - 3.585	0.421	0.603 - 2.771	0.68	0.355 - 1.301
Higher Secondary	2.434**	1.328 - 4.459	2.54**	1.287 - 5.011	1.044	0.587 - 1.857
No. of Children						
2 or Less	1.16	0.443 - 3.035	0.454	0.192 - 1.075	0.392*	0.188 - 0.817
3 to 4	1.273	0.478 - 3.385	1.142	0.483 - 2.703	0.898	0.433 - 1.862
5 or more (RC)						
Gender Composition of Children						
No. son nor daughter	0.104***	0.063 - 0.174	0.003***	0.000 - 0.026	0.033**	0.004 - 0.245
Only son	0.775	0.512 - 1.173	0.421***	0.270 - 0.656	0.543**	0.381 - 0.774
Only daughter	0.765	0.506 - 1.156	0.337***	0.215 - 0.528	0.44***	0.306 - 0.634
Both (RC)						

* p<0.05; ** p<0.01; *** p<0.001
RC – Reference Category

Geo-spatial factors with contraceptive method choice

It can be seen in Figure 1 which showed that the transportation network in Muang district was better than Sai Yok district and there was found more elevated areas in Sai Yok district. Moreover, there was no hospital or clinic in high land areas of Sai Yok district.

Contraceptive method choice in the study districts

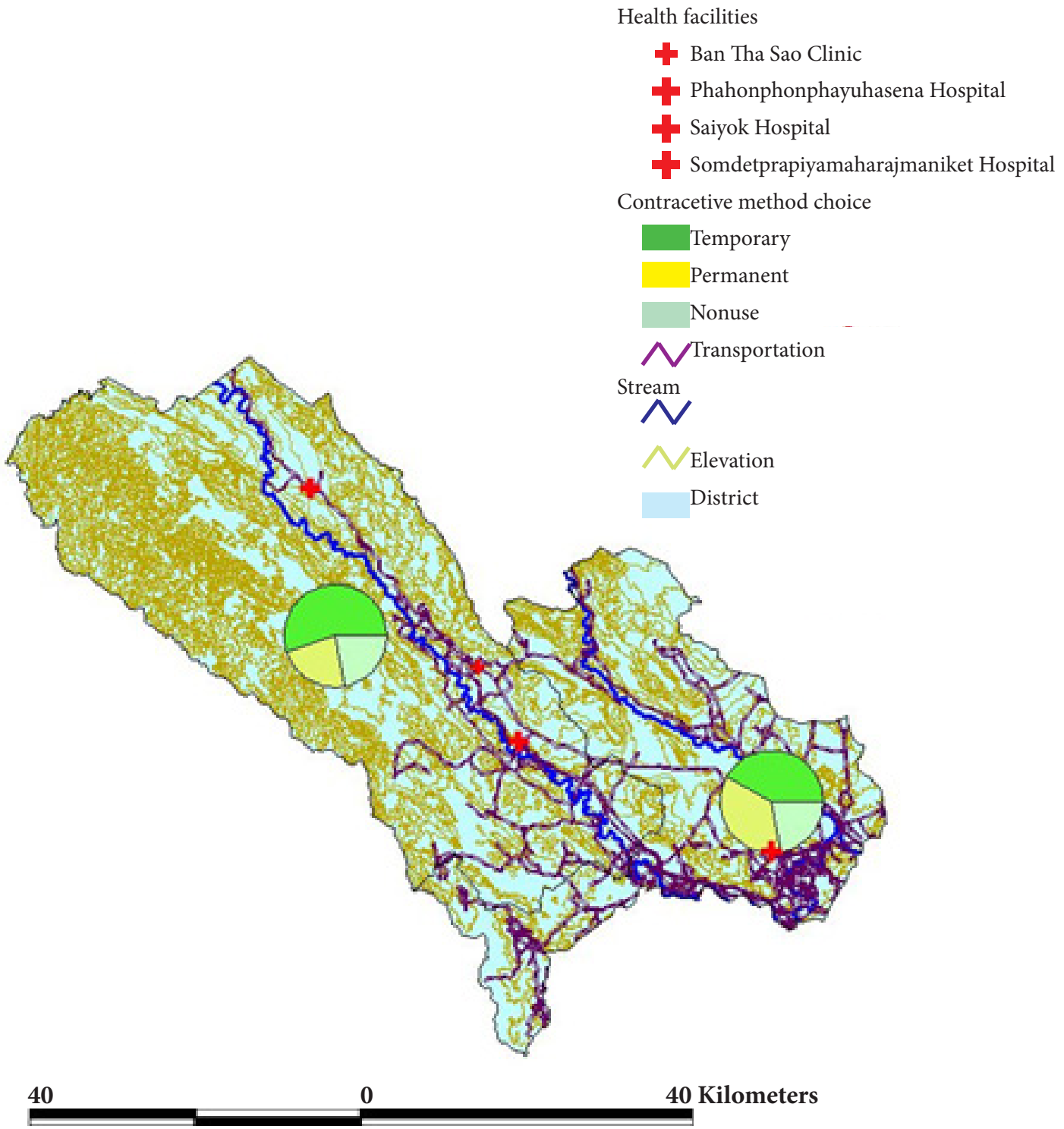

Figure. 1 Contraceptive method choice in the study district

DISCUSSION

The study showed that the adoption of the permanent contraceptive method increased with age and number of living children were similar to the results of a study from rural Bangladesh. Bangladesh study which investigated the determinants of contraceptive method choice also found that presence of sons in the family had negative association with the use of permanent contraceptive method. The study also observed that younger women preferred temporary contraceptive methods rather than a permanent method.[7]

In contrast to the expectation, there was no significant association between education level and use a permanent method over a temporary method. It was consistent with the finding from Bangladesh study where the use of permanent methods decreased with education.[8] The current study observed that women having higher than secondary education used contraception (both temporary and permanent contraceptive methods) more than uneducated women. This could be because educated women had better awareness of contraceptive use and higher knowledge of contraception than uneducated women. The above study from Bangladesh also stated that temporary method use was increased with education which is similar to the current study, while permanent methods were more common among uneducated women. However, women's education was the important determinants of contraceptive use and method choice among users.[9–11]

Urban women and educated women were more likely to use the permanent method over non-use and the temporary method compared with rural women. This might be due to increased accessibility to health facility as well as due to higher level of knowledge among urban women regarding reproductive health and better socio-economic status of urban women. Similar kind of findings was found from the study conducted in the Kenya and Ethiopia where urban and educated women more likely to use long term methods of contraceptive use.[12–14]

In contrast to our findings, a study from Vietnam showed that age and education of women were not associated with contraception use or method of contraception choice. Vietnam study found that women were more likely to use contraception if they lived in rural areas compared to urban areas, and rural women were more likely to use pills compared to that of urban women. The strongest determinant of contraceptive use and modern method choice was the number and sex of living children. In that study, having one additional child was associated with an increase in odds of using modern versus no contraception by 12.9 times if a woman had a son and by 8.1 times if she had no sons. All these findings were similar to the results from the different study conducted in India and Vietnam.[15,16]

According to geo-spatial analysis, it was noted that better transportation network encouraged women to use permanent contraceptive method rather than temporary method. Similar kind of result were found in the study conducted in Maldives and Ethiopia.[17]

CONCLUSION

This study highlighted how various factors influence the method choice of Thai married women of the reproductive age. Geo-spatial analysis results showed that the better transportation network facilitated women to use a permanent contraceptive method rather than a temporary method. Thus, the study recommended that together with improving the number of health facilities, it is necessary to establish a better transportation system in the areas, especially in the mountainous regions to improve access to reproductive health services. At the same time, it is necessary to improve the quality of health facilities regarding reproductive health services including the availability of health service providers in the health facilities which could promote the correct and consistent use of contraception among women of the reproductive age.

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