

Factors influencing cervical cancer screening uptake among the women in Maesot, Tak province, Thailand

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ABSTRACT

Background: Cervical cancer is one of the most significant public health issues in Thailand. The number of women who have had cervical cancer screenings has increased over time; however, if major obstacles are not addressed, it will become challenging to maintain this success.

Objectives: This study aimed to identify the magnitude and factors influencing cervical cancer screening uptake among women in Maesot, Tak Province, Thailand.

Methods: This cross-sectional study was conducted in Maesot, Thailand. A structured questionnaire was used. Descriptive statistics and multiple logistic regression were used to determine the magnitude of the cervical cancer screening uptake and associated factors. The association was described with an Adjusted Odds Ratio (AOR) and 95% Confidence Interval (95% CI) at the statistically significant level of p-value < 0.05.

Results: Of the total 422 women, the average age was 38.82 ± 8.46 years. Nearly one-fourth of the respondents were Thai nationals. Almost 70% of respondents were married, and 80% were employed. About one-third of respondents had a high school level of education. The magnitude of Cervical Cancer Screening Uptake (CCSU) was 13.27% (95% CI: 10.34-16.86). Age ≥ 40 years (AOR=2.15, 95%CI: 1.05-4.40), Christian and having others religion (AOR=2.19, 95% CI: 1.08-4.44), married between 26 years to 43 years (AOR= 2.93, 95%CI: 1.45-5.93), having good knowledge of cervical cancer (AOR= 4.70, 95%CI: 2.22-9.72), and having good knowledge of cervical cancer screening program (AOR= 6.58, 95%CI: 2.82-17.77) were significant predictors of cervical cancer screening.

Conclusion: Cervical cancer screening among women in Maesot is lower than that of national coverage of Thailand. Determining factors for the decision to undergo cervical cancer screening uptake include age, religion, age of marriage, knowledge of cervical cancer and knowledge of cervical cancer screening program. To improve uptake, structured screening programs need to be implemented in collaboration with national partners and institutions to decrease the incidence of cervical cancer in Thailand.

Keywords: Age, Cervical Cancer, Knowledge, Screening, Thailand

1. Introduction

Cervical cancer is a significant public health issue, ranking as the fourth most common cancer among women worldwide, with 570,000 new cases and 311,000 deaths in 2018 [1]. It is the fifth-leading cause of cancer-related fatalities among women and the second-most common disease among women between the ages of 15 and 44 [2].

The annual number of new cervical cancer cases is 9,158, and about 4,705 deaths occur in Thailand [3]. This affected Thai people's quality of life and led to a major loss of human and financial resources [4]. Cervical cancer is preventable by regular screening, vaccination, and efficient management [5]. Cervical cancer screening can reduce the mortality due to cervical cancer by 80% or more [6]. Since the introduction of the Papanicolaou test to screen cervical cancer, the incidence and death of cervical cancer were found to have declined [7, 8]. Since 2005, Ministry of Public Health (MoPH), Thailand had established cervical cancer screening for the women aged from 30 years to 60 years using Pap smear and Visual Inspection with Acetic acid (VIA) method [4].

Numerous studies have shown that factors such as income, culture, and a lack of screening knowledge impact the screening participation rate [4]. Moreover, a variety of factors,

including age, marital status, income, employment, and lack of understanding about cervical cancer, were also determinants of receiving cervical cancer [9].

Thailand has been dedicated to eradicating cervical cancer since 2017 [5]. Therefore, it is important to assess major obstacles to increasing the Cervical Cancer Screening Uptake rate. Therefore, this study explored factors influencing CCSU in Maesot, Tak province, Thailand.

2. Methods

2.1 Study Area

This study was conducted in Maesot, Tak province, Thailand, from September 2023 to October 2023.

2.2 Study Design

A community-based cross-sectional analytical study was conducted among women (30-60 years) in Maesot, Tak province, Thailand.

2.3 Sample size and sampling

The logistic regression formula of Hsieh et al., 1998 was used to estimate the sample size [11]. A previous study conducted in Malawi was used as a reference to calculate the sample [12], and 422 samples were obtained at the VIF value of 2.50 and Rho square of 0.6. A

structured questionnaire was used to collect data on demographic variables and factors affecting cervical cancer screening services utilization among women (30-60yrs.). To cover both local (Thai) and non-local (migrants) population, Maesot district was selected purposively as the place is hosting several migrants from Myanmar. Mae Sot district is composed of 10 sub districts. After getting permission from the community leader of the subdistrict, the team interviewed 45 respondents per subdistrict. A systematic sampling procedure was used to collect the required sample. For example, if 450 households reside in the subdistrict, every 10th household from index household was interviewed after deciding first index household by lottery method from the list of first 10 households. Only one woman in the household who meets the inclusion criteria was asked. Four hundred twenty-two respondents were selected to use in the project out of 450. Thai nationals numbered 100, and Myanmar nationals numbered 322. So, all the respondents were representatives of Mae Sot. The 28 volunteers who did not mention their age and education were dropped out. The inclusion criteria were those who are willing to participate, can give informed consent, and women aged ≥ 30 years to ≤ 60 years. The exclusion criteria were pregnancy, those who

had a mental illness, and those who had a bedridden illness.

2.4 Data Collection

CCSU was measured as a categorical variable (Yes/No). Tools were first prepared in English and then translated into Thai and Myanmar. Language consistency was established by the forward and backward translation method. The structured questionnaire consisted of age, occupation, income, education, marital status, age of first marriage, age of first pregnancy, number of children, number of deliveries, accessibility to health care, cost of the screening, reasons for no uptake (painful, stigma, no symptoms, not feeling at risk), lack of awareness of cervical cancer, lack of awareness of cervical cancer screening. Some questions about health literacy on reproductive health were presented. Regarding questions about knowledge of cervical cancer, the cause and early symptoms of cervical cancer were asked with total 11 items. Regarding questioners for knowledge of cervical cancer screening, the name of the cervical smear and technique of the cervical smear were asked with total 4 items. The content validity of the questionnaire was checked by three expertise and revised accordingly. Item Objective Congruence (IOC) of each questionnaire was 0.80-1.00.

2.5 Data Analysis

The data were analyzed by using appropriate descriptive and inferential statistics using the Stata program version 18.0, Texas, USA. Tests of significance were performed at 0.05 level of significance and 95% confidence interval. The association of all independent variables and the outcome variable were identified and assessed by applying logistic regression to assess the Odds Ratio (OR) and its 95% Confidence Interval. Multiple logistic regression analyses were performed to investigate the correlation between the outcome and the variables with adjustment of all confounders, showing adjusted odds ratio, 95% CI, and P values. The final model considered the significance level at p-values less than 0.05.

2.6 Ethical Clearance

This study got approval from the “Khon Kaen University Ethics Committee for Human Research” based on the “Declaration of

Helsinki and the ICH Good Clinical Practice Guidelines” (HE662133). Participation in this study was voluntary. Informed written consent was taken before participation. No identity of the participant was revealed by any means.

3. Results

3.1 Sociodemographic characteristics of participants

The average age of participants was 39 years old. Most of the participants were married (69.91%). Thai contributed 23.69 % of the participants, and the remaining were Myanmar nationals. The majority of them (72.04%) were Buddhist. Only a few of them had higher levels of education, with 22.04% of bachelor's degrees or equivalent and 4.27% higher than a Bachelor's degree (Table 1).

Table 1: Sociodemographic characteristics of participants (n=422)

Characteristics	Number (n)	Percent (%)
Age of women (years)		
30-35	198	46.92
36-40	75	17.77
41-45	55	13.03
46-50	36	8.53
51-55	34	8.06
56-60	24	5.69
Mean ($\pm$ SD)	38.82 ($\pm$ 8.46)	
Median (min: max)	36 (30:60)	
Marital Status		
Married	295	69.91
Unmarried	82	19.43

Characteristics	Number (n)	Percent (%)
Widow	24	5.69
Divorced	21	4.97
Others		
Ethnicity		
Bamar	148	35.07
Kayin	126	29.86
Thai	100	23.69
Rakhine	19	4.50
Mon	11	2.61
Shan	7	1.66
Kachin	6	1.42
Chin	5	1.19
Religion		
Buddhist	304	72.04
Christian	106	25.12
Islam	5	1.18
Hinduism	1	0.24
None	6	1.42
Educational level		
Higher than Bachelor's degree	18	4.27
Bachelor or equivalence	93	22.04
High school or equivalence	157	37.20
Middle school / Secondary	101	23.93
Primary school	36	8.53
No formal education	17	4.03
Occupation		
Employed	327	77.49
Unemployed	85	20.14
Others	10	2.37
Monthly family income (Baht)		
6000-10000	154	36.49
≥10000	150	35.55
< 6000	118	27.96
Mean (±SD)	10232(±10399)	
Median (min: max)	7000(0:70000)	
Family history of cervical cancer		
Nil	382	90.52
Mother	19	4.50
Sister	13	3.08
Aunt	8	1.90

3.2 Marriage and Child-Bearing History

Among the participants, it was shown that 50.74%, about half of them, were married between 18 and 25 years of age. 62.37% of

them had their first pregnancy at the age of above 25 years. About one-third of them (36.95%) had been pregnant at least once (Table 2).

Table 2: Marriage and Child-Bearing History of Respondents

Characteristics	Frequency	Percent (%)
Age at the time of marriage (n=339)		
< 18	4	1.18

Characteristics	Frequency	Percent (%)
18-25	172	50.74
26-30	123	36.28
31-35	37	10.91
>35	3	0.89
Mean ($\pm$ SD)	25.59($\pm$ 4.34)	
Median (Min: Max)	25(16:43)	
Age at the time of first pregnancy(n=295)		
>25	184	62.37
18-25	108	36.61
<18	3	1.02
Mean ($\pm$ SD)	27.14($\pm$ 27.14)	
Median (Min: Max)	27(17:42)	
Number of pregnancies (n=295)		
One	109	36.95
Two	107	36.27
Three and above	79	26.78
Number of children (n=296)		
One	107	36.15
Two	109	36.82
Three and above	75	25.34
Nil	5	1.69

*n=Number of samples

3.3 Accessibility to Health Care Facilities, knowledge of cervical cancer, and knowledge of cervical cancer screening of the participants.

79.15% of the respondents had been to a health service facility. Most (44.79%) get their health information from health personnel.

A total of 11 questions were used to determine the knowledge level of cervical cancer. The scores were classified as poor and a good level of knowledge. A score less than 6 was grouped as an inadequate knowledge of cervical cancer, and more than and equal to 6 was a good level. After classification, the result showed that only

18.25% of the participants had good knowledge regarding cervical cancer.

Regarding the knowledge of cervical cancer screening, 4 questions were used to determine the knowledge level of cervical cancer screening. The scores were classified as poor and a good level of knowledge. A score less than 2 was grouped as an inadequate knowledge of cervical cancer screening, and more than and equal to 2 was a good level. After summarizing, the result showed that about half of them (53.08%) had good knowledge of cervical cancer screening (Table 3).

Table 3: Accessibility to Health Care Facility of respondents (n=422)

Characteristics	Frequency	Percent (%)
Have you ever been to a health service?		
Yes	334	79.15
No	88	20.85

Characteristics	Frequency	Percent (%)
Where do you usually get health services when you are ill?		
Private clinic	149	35.31
Government Health Facility	107	25.36
NGO clinic	86	20.38
Drug store	30	7.11
Charity Clinic	28	6.64
Others	22	5.20
How do you usually go to that place?		
Cycle Taxi	182	43.13
Own cycle	144	34.12
Walking	49	11.61
Own car	47	11.14
Convenience for going to a health facility		
Convenience	338	80.09
Inconvenience	84	19.91
Transportation cost to nearest health facility (Bahts)		
100-300	247	58.53
< 100	150	35.55
>300	25	5.92
Mean $\pm$ SD	127.27($\pm$ 125.42)	
Median (Min-Max)	100(0:100)	
How do you get health information?		
Health personal	189	44.79
Peer	76	18.01
Media	67	15.88
Neighbour	47	11.14
Relatives	32	7.58
Others	11	2.60
Knowledge of cervical cancer (11 scores)		
Good (≥ 6 scores)	77	18.25
Poor (<6 scores)	345	81.75
Knowledge of cervical cancer screening (4 scores)		
Good (≥ 2 scores)	224	53.08
Poor (< 2 scores)	198	46.92

3.4 Prevalence and factors associated with CCSU

The prevalence of CCSU among women (30-60 years) in Maesot, Tak Province, was 13.27% (95% CI: 10.34-16.86). The association between the factors with CCSU was analysed by multivariable analysis using multiple logistic regression. After controlling other confounders, age, religion, age of marriage, knowledge of cervical cancer, and knowledge

of cervical cancer screening found to be the strong predictors of CCSU. Women who were ≥ 40 years old were more than 2 times more likely to receive cervical cancer screening than those who were less than 40 years old (AOR= 2.15, 95% CI: 1.05-4.40). Non-Buddhist were 2.19 folds more likely to screen for cervical cancer than Buddhists (AOR=2.19, 95% CI: 1.08-4.44). Those who married from 26 years to 43 years had 2.93 times the higher odds of

uptalking cervical cancer screening than those married at your age (<25 years) (AOR=2.93, 95% CI: 1.45-5.93). Women with good knowledge of cervical cancer had 4.7 times higher odds (AOR=4.7, 95% CI: 2.22-9.72).

Good knowledge of cervical cancer screening had 6.58 times higher odds (AOR=6.58, 95% CI: 2.82-17.77) of uptake of cervical cancer screening (Table 4).

Table 4: Prevalence and factors associated with CCSU analyzed by multivariable analysis using multiple logistic regression (n = 422)

Characteristics	Number of samples	CCSU		COR	AOR	95% CI	p-value
		n	Percent				
Overall prevalence	422	56	13.27	NA	NA	10.34- 16.86	NA
Age (years)							0.035
< 40	260	29	11.15	1	1		
≥40	162	27	16.67	1.59	2.15	1.05-4.40	
Religion							0.033
Buddhist	310	32	10.32	1	1		
Christian and others	112	24	21.43	2.37	2.19	1.08-4.44	
Age at the time of marriage							0.003
16-25	176	19	10.80	1	1		
26-43	163	33	20.25	2.09	2.93	1.45-5.93	
Knowledge of cervical cancer (11 scores)							<0.001
Poor (<6 scores)	345	31	8.99	1	1		
Good (≥ 6 scores)	77	25	32.47	4.87	4.70	2.22-9.72	
Knowledge of cervical cancer screening							<0.001
Poor (< 2 scores)	198	7	3.54	1	1		
Good (≥ 2 scores)	224	49	21.88	7.64	6.58	2.82-17.77	

*n= Number of participants who took CCSU, COR=Crude Odds Ratio, AOR= Adjusted Odds Ratio, 95% CI= 95% Confidence Interval, NA= Not applicable

4. Discussion

In this study, only 13.27% of the respondents had cervical cancer screening uptake in Thailand. The finding was significantly lower than the coverage from national cancer screening of Thailand, where the coverage was 77.5% withing 2005 to 2009 and 53.9% within 2010 to 2014 [4]. As most of the study participants (76.31%) were non-Thai in this study, there might be an information gap in the cervical cancer screening program in

those groups due to several reasons, such as inadequate information, language barrier, fear, and not knowing about health facilities. Moreover, most of our study participants (90.52%) did not have any family history of cervical cancer so that these participants might have no peer education regarding cervical cancer. This might be another reason for not taking cervical cancer screening.

In this study, aged over 40 years old women were more than 2 folds likely to have CCSU

than those younger than 40. This might be due to the reason that the younger ages are more vulnerable to social stigma to screening cervical cancer and low knowledge of cervical cancer. This is in line with a systematic review where older age group of Myanmar migrants were found to be more likely to screen for cervical cancer [10].

Christian and other religion had 2.19 times the odds of doing cervical screening uptake more than Buddhist women. The aggregation of the same religion shares the social environment and cultural boundaries, which might have effects on cervical cancer screening. The more socialized faiths, such as Christianity may have effects to overcome the feeling of embarrassing in receiving cervical cancer screening [13]. Therefore, religious places where people use to gather and meet such as monastery, churches and the religious event can be an important knowledge sharing resource in implementing cervical cancer screening programs.

Findings from this study indicated that women who married at under 25 years old were less likely to be undertaken CCSU. This could be due to the fact that the longer the marital years, the more curiosity on the reproductive health of the women happen. Some literatures supported our finding that

the longer the marital years, the higher CCSU among women [14]. However, our finding was contradicting with finding from another study where the women who married at younger age (<18 years) were more likely to be screened cervical cancer [15]. As the early marital age and early sexual exposure are known risk factor for incidence of cervical cancer, our finding highlighted the need to raise awareness about cervical cancer among the younger age group before getting married.

Respondents with a good level of knowledge of cervical cancer were 4.70 times more likely to do CCSU than those with a poor level of knowledge of cervical cancer. Similarly, respondents with a good level of knowledge of cervical cancer screening were likely to be screened for cervical cancer than those with a poor level of knowledge of cervical cancer screening. Many literatures shown that women with high knowledge did cervical screening more than the low knowledge group [16, 17].

As a result, reproductive health programs and activities should focus on younger age groups. Enforcement of adolescent and youth health programs would be beneficial for the younger age groups to have correct knowledge and perspective on cervical

cancer screening. Health promotion activities can be organized together with cultural activities to remove the social stigma of women. The information should be spread as flyers or leaflets to the women attending the Buddhist monastery ceremonies or religious activities, and Churches. Comprehensive knowledge of cervical cancer and the benefits of cervical cancer screening should be given to the community, especially those who are non-Thai citizens in their preferred language.

This study population is mixed with Myanmar migrants and Thai nationals, so the actual Thai national figure can't be obtained. Moreover, the distribution of other religion rather than Buddhist and Christian was very low in our study. Therefore, the influences of other religions could not be able to find out from this study. The cross-sectional nature of this study made it impossible to reach the causal relation between cervical cancer screening uptake and sociodemographic, marriage and childbearing history, health care services-related factors, and barriers for

no uptake. This study depended on the participant's answers to the structured questionnaires. Therefore, memory recall and interviewer relationship bias could not be excluded.

5. Conclusion

Cervical cancer screening among women in Maesot is lower than that of national coverage in Thailand. Age, religion, age of marriage, knowledge of cervical cancer, and knowledge of cervical cancer screening were the predictors for the uptake of cervical cancer screening. These findings highlighted the development of interventions to improve the knowledge of cervical cancer and screening among women in Mae Sot, Tak Province.

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