

## RESEARCH ARTICLE

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# Knowledge Attitude and Practice of Postpartum Parturients Towards Cervical Cancer and Cervical Cancer Screening; Is Lack of Knowledge the Misleading Scapegoat?

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### Abstract

**Objective:** The aim of this study was to assess knowledge, attitude, and practices towards cervical cancer screening among postpartum subjects. **Study design:** This cross-sectional study was conducted at inpatient obstetrics ward at Thammasat University Hospital (TUH), Thailand. The period of study was between July 2020 and July 2021. Subjects were term Thai pregnant women who had age between 20 and 45 years old and delivered at TUH. Demographic characters, knowledge, attitude and practices regarding cervical cancer screening were collected. **Results:** A total of 388 parturient was recruited into the study. Average age was 31 years old. Around 90 percent of subjects knew that every woman age between 21 and 65 years old with or without children should be screened for cervical cancer despite having only 46.6 percent (181/388) of subjects that underwent postpartum cervical cancer screening. Almost half of the participant agreed that risky sexual behavior of both genders was not the cause of cervical cancer. Despite the availability of the HPV vaccine throughout the country, only 74.2 percent acknowledged that HPV was the cause and only 70.4% heard about the HPV vaccine. The mean attitude about the cervical cancer was relatively high with the mean of  $3.19 \pm 0.46$ . Although the higher the score the better the attitude toward the statement, there were several correlations of having such attitude. **Conclusion:** Attention to postpartum cervical cancer screening was quite low even though high knowledge of cervical cancer and screening. Scant knowledge was not all of the troubles that we believed long time ago.

**Keywords:** Knowledge- attitude- practice- cervical cancer screening- postpartum

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### Introduction

Providing the most recent information by World Health Organization, cervical cancer is by far the fourth most prevalent cancer in women with an incidence of 13.3% or around 604,000 new cases and 342 000 deaths in 2020. Reports also revealed that low- to middle-income countries represent 90% of the new cases and deaths worldwide in 2020 (Sung et al., 2021; Sung et al., 2021).

Correspondingly, National Cancer Institute of Thailand (NCI) revealed that cervical cancer remains the prominent type of neoplasm in Thai female that responsible for 11.1% of new cancer cases in Thai women (Ministry of Public Health Thailand., 2020).

With elaborated recognition, it had been proven for over 50 years that cervical cancer is sexually transmitted cancer caused by human papillomavirus (HPV) (Anderson et al., 2020). Papanicolaou smear (Pap smear) and visual inspection with acetic acid (VIA) are offered free of charge in Thailand (Insamran et al., 2020).

Despite justified efficacy and accessibility of the test,

the cervical cancer screening remains unpopular among the eligible subjects especially in postpartum women to which the screening is offered in the postpartum clinic.

From systematic review in Southeast Asia, the facilitators and barriers to getting cervical cancer screening remain inconclusive between each area due to heterogeneity of culture, religion, and certain beliefs (Chua et al., 2021).

This does alert and motivate our team to explore in detail about the factors associated with presence and absence of cervical cancer screening among postpartum women to further improve overall screening system and screening attending. As there is evidence in India that Pap smear is essential during postnatal visit hence most of the participants undergo first Pap smear and no progression of precancerous lesion during antepartum and postpartum screening. (Gill et al., 2020). The aim of this study was to assess knowledge, attitude, and practices towards cervical cancer screening among postpartum patients.

## Materials and Methods

This cross-sectional study was conducted at inpatient obstetric ward at Thammasat University Hospital, Thailand. The period of study was between July 2020 and July 2021.

After the study are approved by the Human Ethics Committee of Thammasat University (IRB code: MTU-EC-OB-0-246/62), the study was launched to 388 participants along with patient informed consent documentation.

The inclusion criteria were Thai pregnant women at age 20 - 45 who delivered at Thammasat University Hospital and was willing to fill out the questionnaire. The patients that already developed precancerous cervical lesion, unable to make cognitive decision, and does not meet mentioned criteria will be excluded.

After the delivery and the participants regain regular activity, all the eligible subjects are being interviewed by single structural questionnaires interviewer. After the interviewer introduce himself and slowly explained the purpose and the outline of the study, the participants that agree upon providing information would sign written informed consent.

According to Srisuwan's study, the knowledge among participant was 68.4 percent (Srisuwan et al., 2015). Type 1 error and the confidence interval were set at 0.05 and 95%, respectively. The minimal sample size was 351 cases. With the estimated error loss, the size was given around 10 percent addition. The total collected data was 390 cases.

The questionnaire was constructed based on validated questionnaire from Rimande-Joel's and Srisuwan's studies (Srisuwan et al., 2015; Rimande-Joel et al., 2019). The questionnaire contained 4 sections: General information, knowledge, attitude, and practices regarding cervical cancer screening. The demographic data included age, income, occupation, educational status, cervical cancer screening history and obstetric history. The knowledge contains 14 items and attitude and practice contain 12 items. For the knowledge part, the participants would be graded as 1 or 0 point if the answer was true or false, respectively. However, the attitude and practice will be scored ranging from strongly agree to strongly disagree (1 to 4).

The data gathered were calculated and classified by statistical package for social science (SPSS Inc., Chicago, IL, USA) for window version 17. With confidence interval set at 95% and variant of 0.05, the continuous data was determined at mean and standard deviation. The categorical information was determined by Chi-square and significant when p-value was less than 0.05.

## Results

Follow as Figure 1, 388 parturient were recruited into the study. Among the eligible, the mean age around 31 years old and 73.5% of all was below 35 years old. Almost half of the participants received salary with around 30% of them making less than minimum wages. Looking at education, nearly half (149/388) of the respondents did not have college degree and around half of cases (193/388)

were nulliparous. Regarding cervical cancer screening, around half of the participants had Pap smear within 5 years with HPV vaccination rate of 42.3%.

Table 2 showed knowledge towards cervical cancer and cervical cancer screening. Around 90% of all the participants knew that every woman age 21-65 with or without children should be screened for cervical cancer despite having only 181/388 people that screened for cervical cancer. Almost half of the participant agreed that risky sexual behavior of both genders was not the cause of cervical cancer. Despite the availability of the HPV vaccine throughout the country, only 74.2% acknowledged that HPV was the cause and only 70.4% heard about the vaccine.

Table 3 demonstrated the total attitude toward cervical cancer and cervical cancer screening. The mean attitude about the cervical cancer was relatively high with the mean of 3.19+0.46. Although the higher the score the better the attitude toward the statement, there were several correlations of having such attitude.

## Discussion

After thoroughly analyzed validated questions, it

Table 1. Demographic Data of Parturient

Characteristics	Number	Percent (%)
Age (year)*	31±5.3	
Buddhism	366	94.3
Occupation		
Private employee	142	36.6
Government officer	55	14.2
Contractor	93	24.0
Merchant & Others	98	25.3
Residency		
Bangkok	65	16.8
Suburban	237	61.0
Others	86	22.2
Education		
Less than high school	64	16.5
High school	85	21.9
Bachelor	200	51.5
Above Bachelor	39	10.1
Income (USD per month)		
<474	123	31.7
475-632	87	22.4
633-789	63	16.2
>790	115	29.6
ANC at TUH	319	82.2
Nulliparity	193	49.7
Never vaginal delivery	264	68.0
Never or CCS >5 years	207	53.4
Willing to CCS	356	91.8

\*mean±standard deviation(SD), ANC, antenatal care visit; TUH, Thammasat university hospital; CCS, cervical cancer screening

Table 2. Cervical Cancer Screening Knowledge among the Parturient(n=388)

	Correct*	Incorrect*	SD
Cervical cancer is the second most common in Thailand	335 (86.3)	53 (13.7)	34.4
HPV is the cause of cervical cancer	288 (74.2)	100 (25.8)	43.8
Polygamous women are prone to cervical cancer	224 (57.7)	164 (42.3)	49.5
Marrying to polygamous men is the risk factor	208 (53.6)	180 (46.4)	49.9
Abnormal vaginal bleeding is the symptom of cervical cancer	299 (77.1)	89 (22.9)	42.1
Smoking is directly related to cervical cancer	247 (63.7)	141 (36.3)	48.2
Risk of having cervical cancer is reduced by having a child	223 (57.5)	165 (42.5)	49.5
Pap smear is a CCS method in Thailand	309 (79.6)	79 (20.4)	40.3
Women age 21-65 should get CCS	351 (90.5)	37 (9.5)	29.4
Every woman should get CCS	353 (91.0)	35 (9.0)	28.7
Every woman should get CCS every 5 years	253 (65.2)	135 (34.8)	47.7
Women without children should also get CCS	346 (89.2)	42 (10.8)	31.1
Postpartum women should get CCS	357 (92.0)	31 (8.0)	27.1
Vaccine for reducing cervical cancer incidence is available	273 (70.4)	115 (29.6)	45.7
Total score Knowledge	291 (74.9)	101 (26.1)	16.23

\*n(%); SD, standard deviation; HPV, human papillomavirus; Pap, Papanicolaou; CCS, cervical cancer screening

was expected that the passing score for both attitude and knowledge was around half (5.0 in knowledge score and 2.0 in attitude score) Although all participants had knowledge higher than 50% and attitude towards cervical cancer screening above 2.0, it was skeptical in some area.

There were many facilitators and barriers contributing to the cervical cancer screening uptake. First off, the patient age more than 35 years old who believed that HPV was not the cause of cervical cancer has higher rate of HPV vaccination compared to those with younger age. In other words, the participants who knew that HPV was related to cervical cancer would not get vaccinated as much compare with the participants who had no idea. The finding remained true in other region of the world since their healthcare facilitators in such countries were more likely to be seen as the specialists and so by following the current cervical cancer prevention guideline the women would have vaccinated by default (Chua et al., 2021). It could also be thought of as there were other

factors preventing the group age below 35 years old from vaccination or there could be factors contributes to old age group getting vaccinated despite not knowing what the vaccine does. The former one was represented in the overall attitude is significantly lower in early age group specifically in believing that the disease was unpreventable and so they would not bother vaccinating at all. The latter also showed in the higher mean of knowledge about availability of vaccine that can reduce cervical cancer incidence in the higher age group, as a result, they would still get vaccinated despite not knowing about HPV at all. Which was similar to other studies done in Southeast Asia and Africa that the knowledge about cervical cancer and cervical cancer screening would have significant effect on the uptake about cervical cancer screening (Chua et al., 2021; Nkfusai et al., 2019; Ali et al., 2017). And from another study conducted in Cameroon concluded that the basic knowledges still poor regarding risk factors, screening methods, vaccination, and progression of the

Table 3. Attitude of Parturient toward Cervical Cancer (n=388)

	Mean	SD
I am too young to develop CC	3.32	0.67
Cervical cancer cannot be cured	3.29	0.68
Having multiple partners is not related to CC	2.92	0.78
CCS is embarrassing	3.39	0.69
CCS is painful	3.06	0.67
I cannot get over the fact that I have cancer	2.78	0.77
If I ever diagnosed with CC I would be stigmatized by the society	3.16	0.75
I will lose my virginity to CCS	3.33	0.75
CCS is useless	3.41	0.81
CC is unpreventable	3.16	0.81
CC can only be found in married women	3.31	0.77
CCS is pricey	3.1	0.74
Total Attitude	3.19	0.46

SD, standard deviation; CC, cervical cancer; CCS, cervical cancer screening

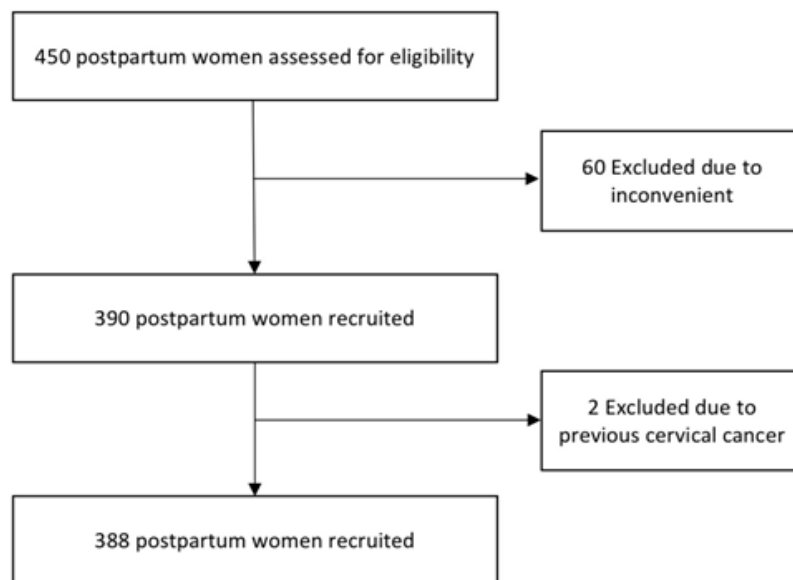


Figure 1. Flow Chart of Enrollment

disease with only around 39% of all participants. The misinformations from family and friends would affect overall practice of the screening in the area (Tagne et al., 2021).

Regarding college degree, it was surprising that people with college degree had significantly lower in mean score by believing that women without children should not get tested as they might think that having a child is the risk factor of cervical cancer. The similar results were observed among Southeast Asia where the educational status had no direct impact around knowledge and attitude towards the mentioning domains. The studies done in Zimbabwe concluded that the subjects of whom parents had lower education resulted in higher knowledge about cervical cancer and cervical cancer screening where the higher the parents' educational status the better the attitude of their kids (Mapanga et al., 2019). This showed similar concept that the health awareness is still pretty low even given the college degree. This seemed that the concept of cervical cancer and its screening let alone the preventing was lacked among the children and the women across the globe. The similar results were reflecting that the knowledge that were necessary for the women to screen and care themselves from preventable disease were low despite having college degree. The healthcare workers in some of the studies also reported of having poor knowledge about what they were supposedly know best. This might be the reason for the people in such countries having high incidence of cervical cancer even if the modern researches were proven to prevent the disease.

From the study conducted in Cameroon, the mean age was 30.5 years old and 98.8% of the participants were Christians with minority (24%) of the participants finished high school. The study shown that only 30.2% knew that cervical cancer was caused by virus and only 23% knew that the name was HPV while around 74.2% of our study rightly answered about HPV. The study found that 42.2% of the participants had low knowledge about cervical cancer and resulted in lower rate of cervical

cancer screening. The study also corresponded with other studies in Lagos Nigeria, Ghana, Uganda, and Buea Cameroon where the knowledge was relatively low due to low-income countries (Nkfusai et al., 2019).

The study done in Cameroon as well as Medeiros, and South Africa reported that having multiple sexual partners was the risk factor for cervical cancer, 54.4%, 63%, and 22%, respectively (Nkfusai et al., 2019; Tsegay et al., 2019). Also, from the systematic review conducted in 2021 by Chua and coworkers (Chua et al., 2021) found that the top barriers to getting cervical cancer screening were embarrassment, busyness, and poor knowledge and top facilitators include age, advice from healthcare worker, and educational status. The study found that knowledge about cervical cancer and cervical cancer screening play act as both barrier and facilitator. Feeling such as embarrassment, fear of pain, lack of support from family, having no advice from healthcare worker, educational status had impact on being a major barrier to getting cervical cancer screening. The facilitators including good attitude, being younger, support from spouse, and having good knowledge on both cervical cancer and cervical cancer screening (Nkfusai et al., 2019).

The baseline characteristics of our research had an average age of 31 years old, where about 70 percent of the participants aged more than 35 years old. Similarly, study from Chua and Nkfusai had a comparable average age with majority of the participants aged more than 35 years old. In Mapanga's work the result is a bit different where the population aged around 15-24 years old. And unlike the research document form Mapanga and Nkfusai which studied around population with education lower than Bachelor Degrees, 60% of our research study population holds Bachelor Degrees or higher (Chua et al., 2021; Nkfusai et al., 2019; Ali et al., 2017).

Based on the knowledge about cervical cancer in this research, we found out that 74.9% of the population had good knowledge, 74% knew that HPV was a cause of cervical cancer, 70% knew that the HPV vaccine could

reduce the incidence of cervical cancer. Similar to that of Chua's and Nkfusai's study but differed from that of Mapanga's, Batool's and Ali's studies that which lack good knowledge and awareness (Chua et al., 2021; Nkfusai et al., 2019; Batool et al., 2017; Ali et al., 2017).

In this study, about the attitude towards cervical cancer screening, found that the participants have a good attitude towards cervical cancer screening, not perceiving it with certain feelings, for example, pain or embarrassment, similar to the study of Chua et al, but differ from that of Mapanga, Batool, and Ali and their colleagues holding poor attitude, embarrassing screening, fearing pain, not seeing cervical cancer screening as a necessary and cultural belief in some ethnic group (Chua et al., 2021; Nkfusai et al., 2019; Batool et al., 2017; Ali et al., 2017).

The study found that 91.8% of the population wanted cervical cancer screening, 53.4% never or underwent cervical cancer screening more than five years ago, only 42.3% of the population had the HPV vaccinated. The barrier might result from the additional expenses from advanced screening method or vaccination. Because most of the participants in this study had low income (<474 USD/month) and might not have time due to work. Conversely, in other studies, the barrier mostly came from embarrassment and fear of pain. The encouragement in screening was having good knowledge and attitude. In this study, the population already had good knowledge and attitude. Therefore, easier access to screening was recommended, for example, portable screening service, additional advanced screening charges reduction, and reducing HPV vaccine charges. Another method includes integrated cancer screening camps as done in North India which created multiple screening sites for various type cancer as the participants would be beneficial in limited time (Abu et al., 2020).

In conclusion, cervical cancer by far was one of limited cancer that was preventable and had various options for early screening yet one of the most popular among Thai women. In upper- to middle- income country where most of the population make less than minimum wages such as Thailand, the women were shown to have cultural barrier combined with inadequate knowledge about the disease. The rate of the disease was not lowering despite enough available screening option providing from national health scheme. A lot of times the eager to advancing more accuracy of disease detection and treatment were too rapid that physicians let it slip through basic issues such as misconception or harmful cultural beliefs. Current studies proved that the scant knowledge was not all the troubles that we believed long time ago. This study was only the initial work that aimed to determine the overall picture of the improving the number of the preventable cancer. The researchers team intended that this study might be beneficial in further area of research to reduce and eradicated the mentioned barriers and misconceptions towards cervical cancer and cervical cancer screening.

## Author Contribution Statement

Study conception and design: P.W., A.C., K.S.; data collection: N.K.; analysis: J.P.; interpretation of results: N.K., P.W., A.C., K.S.; draft manuscript preparation: N.K. All authors reviewed the results and approved the final version of the manuscripts.

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