

RESEARCH ARTICLE

Factors Affecting Cervical Cancer Screening Uptake by Hmong Hilltribe Women in Thailand

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Abstract

Background: Cervical cancer is relatively common in Thai women, but the proportion of females receiving Pap smear screening is still low. **Objective:** The purpose of this cross-sectional study was to study factors related to cervical cancer screening uptake by Hmong hilltribe women in Lomkao District, Phetchabun Province. **Materials and Methods:** Interview data were collected from 547 of these women aged 30-60 years living in the study area and analyzed using multiple logistic regression. **Results:** The results showed that 64.9% of the study sample had received screening, and that 47.2% had attended due to a cervical screening campaign. The most common reason given for not receiving screening was lack of time (21.4%). The factors found to be positively associated with uptake (p value <0.05) were as follows: number of years of school attendance (OR=1.56, 95% CI:1.02-2.38), animistic religious beliefs (OR=0.55, 95% CI:0.33-0.91), a previous pregnancy (OR=6.20, 95% CI:1.36-28.35), receipt of information about cervical cancer screening (OR=2.25, 95% CI:1.35-3.76), and perceived risk of developing cervical cancer (OR=1.83, 95% CI:1.25-2.67). **Conclusions:** To promote the uptake of cervical screening, Hmong hilltribe women need to know more about cervical cancer and cervical cancer screening, and access to screening services should be provided in conjunction with existing everyday services, such as family planning and routine blood pressure monitoring or diabetes services.

Keywords: Cervical cancer - Pap smear screening - Hmong hilltribe - Thailand

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Introduction

Globally, cancer of the cervix is the fourth most common cause of death due to cancer in women, and it is the third most frequently diagnosed form of female cancer. Along with breast and prostate cancer, cervical cancer ranks as one of the most prevalent forms of malignancy in nearly all countries around the world. Almost 70% of the global burden occurs in areas of lower development (Bray et al., 2013; Ferlay et al., 2013). In Southeast Asia, the age-standardised incidence and mortality rates in 2012 were 20.5 and 11.3 per 100,000 respectively, and in Thailand the respective rates were 17.8 and 9.7 (Ferlay et al., 2013). Cervical cancer is the second most common type of cancer in Thai women, and the incidence rates appear to be highest in the rural areas (Khuhaprema et al., 2012).

While women in developing countries are regularly seen with late stage cervical cancer when there is little that can be done to save lives, invasive cervical cancer and death can be readily prevented through screening and treatment using relatively simple technologies (Sriamporn et al., 2006). Strong evidence is now available to show that cervical screening is associated with reductions in

the incidence of invasive cervical cancer and in mortality and that these benefits can occur even after a single life-time screening test (Peirson et al., 2013). However, for screening to be an effective means of preventing deaths from cervical cancer, it must be widely available, preferably in the form of a well-publicised national programme, women at risk for the disease must participate and attend screening, and those with abnormal smears must be treated.

In Thailand, the Pap smear test has been used since 1952 under the responsibility of the Department of Medical Services (DOMS) in the Ministry of Public Health (Jontasopeepun et al., 2012). The test was applied mainly for diagnostic purposes rather than for cervical cancer screening. It was opportunistic, involving fee-for-service testing of women 'on demand', or when women attended services such as family planning, pregnancy counseling, ante- and postnatal clinics or sexually transmitted disease clinics (Sriamporn et al., 2006). In 2005, DOMS and the Thai National Cancer Institute organised a formal nation-wide, 'free-of-charge' cervical cancer 'screen-and-treat' programme for the Thai female population aged 35-60 years to receive Pap smear testing every five years (Kasinpila et al., 2011). An assessment of the effectiveness

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of the screening aspect of programme (Khuhaprema et al., 2012) reported that, while the targeted population was only 40% of the total eligible 10.1 million women due to the budget limitations, national sample surveys of women in the 35-50 age group, who had been screened in the past five years, rose from 37.9% in 2005 to 71.9% in 2007; prior to 2005, national surveys had suggested that only about 25% in the 30-65 year age group had been screened in the preceding five years. Nevertheless, other studies indicate that, in general, the proportion of Thai women in the critical age group, who have apparently never been screened, seems to have remained high: for example, 20% of hospital controls in a Khon Kaen case-control study (Kasinpila et al., 2011) had apparently never been tested. In the study of 189 working women aged 25 years or older by Boonpongmanee and Jittanoon (2007), 48% reported never have undergone a Pap smear, but almost half of the subjects were 35 years or younger, and less (31%) reported no history of screening in the 36-55 years age group.

Ethnic minorities face potential barriers to their use of health services such as cervical screening as a result of various social and cultural factors which affect their ability and willingness to access the existing healthcare system (Scheppers et al., 2006). In Thailand, hill tribes are an ethnically distinct minority group who live primarily in the more mountainous forested areas of the Northern provinces. One of the largest of the hill tribes is the Hmong (population of about 150,000) who began migrating into Southeast Asia from Southern China in the 18th century; they rely mainly on farming to make a living and tend to be poorer and less well-educated than the indigenous population and other ethnic groups (Yang, 2008). Another potential barrier is their traditional animistic belief in spirits or souls and their associated fatalistic ideas about disease causation and the healing power of shamanism (Lemoine, 2008; 2011). Such beliefs might be expected to result in less acceptance of Western preventive medical practices such as cervical screening.

Whereas there is one report of cervical screening in another Thai hill tribe (Kritpetcharat et al., 2012), to our knowledge there has been no study of cervical cancer screening among the Thai Hmong. The purpose of this study was to investigate the prevalence of cervical screening and the factors associated with screening uptake among a typical population of Hmong in one province of Northern Thailand with a high number of Hmong residents.

Materials and Methods

This cross-sectional analytic survey was conducted among all Hmong hill tribe women aged 30-60 years (N=566) living in Lomkao District, Phetchabun Province. All were registered Thai citizens. A total of 547 women agreed to participate (3% refusal rate), and data were collected by means of an interview questionnaire during March, 2012, using 10 Hmong hill tribe health volunteers as trained assistants. The variables of interest included in the interview questionnaires were age, education, marital status, occupation, religion, family income, family history of cervical cancer, contraceptive use, parity, age at first

pregnancy, health beliefs, and history of cervical cancer screening.

Health beliefs included perceptions about the severity of cervical cancer (CC), the importance of screening, and the risk of developing CC. For each belief participants responded to five Likert items using a three-point format (agree, not sure, disagree) with scores ranging 0-3 resulting in total scale scores of 0-15. On some items the scores were reversed so that higher scale scores always reflected more accurate perceptions.

Descriptive statistics were used to summarise the characteristics of the participants. Univariate and multivariate logistic regression analyses were performed to investigate factors associated with cervical cancer screening uptake.

The research was approved by the Khon Kaen University Ethics Committee for Human Research (reference no. HE552003).

Results

The characteristics of the subjects participating in this study are summarised in Table 1. Their mean age was

Table 1. Characteristics of Study Participants (n=547)

Variables	No.	%
Age at interview (years)	30-39	232 42.41
	40-49	170 31.08
	50-60	145 26.51
	Mean=42.97, SD=8.56, Max=60, Min=30	
Education	No formal education	313 57.22
	Primary school	167 30.53
	Secondary school	66 12.07
	Bachelor degree	1 0.18
Marital status	Single	3 0.55
	Married	497 90.86
	Widowed/divorced	47 8.59
Religion	Buddhist	312 57.04
	Animistic beliefs	123 22.49
	Christian	112 20.48
Cervical cancer in the family	No	528 96.53
	Yes	19 3.47
Occupation	Agricultural worker	524 95.8
	Non-agricultural labourer	13 2.38
	Housewife/commercial/government service	10 1.83
Family income per month	≤1,000 Baht	154 28.15
	1,001-5,000 Baht	324 59.23
	≥5,000 Baht	69 12.61
	Mean=3,223.14, SD=2,457.09, Max=20,000, Min=200	
Contraception use	Ever	402 73.49
	Never	145 26.51
Present contraception use	Oral pill	260 47.53
	Injection	123 22.49
	Sterilization/per cutaneous/condom	19 3.47
	None	145 26.51
	Mean=5.48, SD=2.15, Max=13, Min=0	
Parity	Nulliparas	9 1.65
	1-5 births	264 48.26
	6-10 births	267 48.81
	>10 births	7 1.28
	Mean=5.48, SD=2.15, Max=13, Min=0	
Age at first pregnancy (n=538)	<15 years	11 2.04
	15-20 years	450 83.64
	21-25 years	71 13.2
	>25 years	6 1.12
	Mean=18.47, SD=2.37, Max=28, Min=13	
Receipt of information about cervical cancer	Ever	466 85.19
	Never	81 14.81
Mode/source of information about cervical cancer (n=466)	Television	286 61.37
	Health personnel	263 56.44
	Friend/neighbour	236 50.64
	Village health volunteer	167 35.84
	Radio, newspaper	68 14.59

42.97 years, and the vast majority (95.80%) was employed in agriculture. Levels of education and income were low with 57.22% having no formal education and 87.38% reporting a monthly family income of 5,000 baht or less. About half of the women (50.09%) had given birth on six or more occasions, and 70.02% were currently on some form of hormone contraceptive.

Most (77.52%) described themselves as Buddhist or Christians, but a sizeable minority (22.49%) belonged to neither of these religious groups and instead held animistic spiritual beliefs. A large majority (85.19%) claimed to have received information about cervical cancer, and the most frequent sources of this information were (in descending rank order) television, health personnel, friends or neighbours, and village health volunteers.

In terms of cervical screening history (Table 2), 64.90% said they had attended screening on at least one occasion. The most common reason given for attending was in response to a cervical screening campaign (72.68% of those screened) and almost half (47.04%) also said they were screened after giving birth. Being too busy was the commonest reason given for not obtaining screening (60.94% of those never screened said this). Other frequent reasons were shyness (43.75%) and fear of pain (20.83%).

The factors found to be significantly ($p < 0.05$) and positively associated with attending cervical screening (Table 3) were number of years of school attendance

(OR=1.56, 95%CI:1.02-2.38), holding animistic religious beliefs (OR=0.55, 95%CI:0.33-0.91), a previous pregnancy (OR=6.20, 95%CI:1.36-28.35), receipt of information about cervical cancer screening (OR=2.25, 95%CI:1.35-3.76), and perceived risk of developing cervical cancer (OR=1.83, 95% CI:1.25-2.67).

Discussion

On the basis of previous studies, the percentage of Hmong women who had apparently never received cervical screening was not obviously worse than the rate expected for the general Thai population. However, the lack of relevant comparative studies makes such a conclusion very much open to question, and the study of the Akta hill tribe by Kritpetcharat et al. (2012) suggests a less frequent attendance for screening by hill tribe women compared with urban women. This certainly remains an important issue for further research, and the rate for Hmong women found in the present study is far from satisfactory in terms of the national screening goal for the female population. Furthermore, the demographic characteristics of the subjects in this study suggest that they may be at particular risk for cervical cancer or precancerous lesions. For example, risk factors for the development of cervical cancer have been shown to include low income (Wang et al., 2014), and high parity and young age at first pregnancy (Munoz et al., 2002; Vesco et al., 2011; Khamankar et al., 2014). High levels of these factors highlight the importance of an effective screening programme for the Hmong population in this study.

The factors found to be associated with a low cervical screening uptake are largely consistent with those previously found in the developing world, primarily in Asian and especially Southeast Asian countries. Failures to attend screening have been positively associated with low levels of literacy or education (Chan et al., 2002; Nene et al., 2007; Lyimo and Beran, 2012; Gan and Dahlui, 2013; Gyenwali et al., 2013; Wong et al, 2013), lack of knowledge about cervical cancer and/or its prevention (Lyimo and Beran, 2012; Gan and Dahlui, 2013; Shekhar et al., 2013), and no children or nulligravidity (Nene et al., 2007; Gan and Dahlui, 2013). The reasons given for not attending screening are also consistent with the findings

Table 2. History of Cervical Cancer Screening Uptake by Study Participants (n=547)

Variables	No.	%
Cervical cancer screening uptake		
Ever	355	64.9
Never	192	35.1
Reasons given for screening (n=355)		
Screening campaign	258	72.68
After labour	167	47.04
Annual health check up	50	14.08
Abnormal vaginal bleeding	16	4.51
Had other disease but health personnel suggested to do Pap smear	14	3.94
Thought that might get cancer	14	3.94
Reasons given for never being screened (n=192)		
Busy, no time to attend	117	60.94
Shy	84	43.75
Afraid of pain	40	20.83
Do not have any abnormality	17	8.85
Lack of convenient transport	13	6.77
Did not know the place and time	10	5.21
No money for transportation	5	2.6
Never had sexual intercourse	1	0.52

Table 3. Factors Associated with Cervical Cancer Screening Uptake by Study Participants (n=547)

	Screened	No screen	Crude OR (95%CI)	p value	Adjusted OR (95%CI)	p value
Age						
<50 year	273	129	1		1	
≥50 year	82	63	0.62 (0.42-0.91)	0.014	0.82 (0.52-1.29)	0.391
Education						
No formal education	190	123	1		1	
Some formal education	165	69	1.55 (1.08-2.23)	0.017	1.56 (1.02-2.38)	0.04
Religion						
Animistic beliefs	89	34	1		1	
Buddhist or Christian	266	158	0.64 (0.41-1.00)	0.049	0.55 (0.33-0.91)	0.021
Pregnancy						
Never	3	6	1		1	
Ever	352	186	3.78 (0.93-15.41)	0.046	6.20 (1.36-28.35)	0.019
Contraception use						
Never	84	61	1		1	
Ever	271	131	1.50 (1.02-2.22)	0.04	1.42 (0.58-3.46)	0.441
Receive information about cervical cancer						
Never	37	44	1		1	
Ever	318	148	2.56 (1.57-4.15)	0.001	2.25 (1.35-3.76)	0.002
Health beliefs about cervical cancer						
Perceived risk of developing cervical cancer (mean score=9.79, SD=1.17)						
Low (<9.79)	119	89	1		1	
High (≥9.79)	236	103	1.71 (1.19-2.46)	0.003	1.83 (1.25-2.67)	0.002

of these studies. These include being too busy with other commitments (Boonpongmanee and Jittanoon, 2007) and embarrassment or fear of pain (Kritpetcharat et al., 2003; Lyimo and Beran, 2012). Many of the factors associated with a lack of screening and barriers to screening are reflected in the study conducted on Thai women working in Bangkok (Boonpongmanee and Jittanoon, 2007). The finding that so many of the Hmong women reported being too busy to attend screening is not surprising given their large number of children and their traditional gender role which involves expectations that they will be involved in agricultural tasks as well as the taking care of the domestic live-stock, household maintenance and meal preparation, the daily needs of their children and crafts such as weaving cloth. As Lee (2005) reports, Hmong woman are the first to get up in the morning and the last to go bed at night: of all the family members, their work is the hardest and longest.

The finding that those with animistic religious beliefs were more likely to have attended screening was unexpected and surprising. In a study of Hmong women born in the USA, there was a non-significant tendency for cervical screening uptake to be slightly lower among those with traditional religious beliefs compared with those who described themselves as Christians (Yang et al., 2006). The present finding amongst Hmong hilltribe people in Thailand is difficult to explain, and a further study is needed to investigate this issue.

To promote the uptake of cervical screening, Hmong hilltribe women need to know more about cervical cancer and cervical cancer screening, and, to avoid the time required for an additional visit to a healthcare facility, access to screening services should be provided in conjunction with existing everyday services, such as family planning and routine blood pressure monitoring or diabetes services.

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