Knowledge, Attitude and Practice towards cervical cancer screening among healthcare providers in Luang Prabang and Salavan Provinces, Lao PDR

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Abstract

Objective: we aimed to assess the knowledge, attitude and practice (KAP) of healthcare providers (HCP) towards cervical cancer (CC) screening and to identify possible factors associated with its low utilization among women presenting at gynaeco-obstetrics units in the Lao PDR.

Methods: A cross-sectional study was conducted between March - June 2018 on a sample of 85 (HCP) at gynaecology units in two provincial and eleven district hospitals in Luang Prabang (LPB) and Salavan (SLV) Provinces.

Results: Of the 85 HCP, 63.4% were from SLV and 36.6% from LPB. 81% were females and mean ager was 32 years. Only 7% of them had good knowledge, 18.8% had good CC screening attitudes and only 1.2% had good CC screening practices. 36.2% of female HCP had been screened for CC and 48.3% had not been screened because they thought only those who had symptoms and risk factors should go for. The most common reasons for not conducting routine CC screening of patients were: lack of medical equipment (53.7%), and incompetent techniques (43.3%). HCP graduates and post graduates had a higher knowledge score (aOR = 4.09, 95% CI: 1.43-11.66, $P = 0.008$), and attitude score (aOR = 5.54, 95% CI: 1.55-19.75, p=0.008). Those, who had been working for more than 10 years, were more likely to have higher attitude scores (aOR = 6.07, 95% CI: 1.36-27.15, p =0.018).

Conclusions: CC screening knowledge among HCP is generally fair. However, CC screening attitudes are still poor. Re-orientation courses on CC screening for HCP are urgently needed in order to move forward to the next steps in CC screening programs.

Keywords: KAP-cervical cancer screening program-healthcare providers- Lao PDR

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Introduction

Cervical cancer is a leading cause of cancer-related morbidity and mortality among women in low income countries (Ferlay et al., 2015). In the Lao PDR, it is the third most common cancer among elderly women and those of reproductive age (Bruni, L., et al., 2018; Mandelblatt et al., 2002). Roughly 70% of CC worldwide is caused mainly by specific types of Human Papillomavirus (HPV) 16 and 18 (De et al., 2017; Mandelblatt et al., 2002). While it is known to be transmitted mainly through sexual intercourse, other modes of transmission are also possible: hands-to-genitals and contaminated medical surface settings (Onon and Kitchener, 1999). Other factors include socio-demographics, environment, the prevalence of HPV, lack of screening programs, and limited access to healthcare. The social environment might also contribute to high mortality rates (Guan et al., 2012; Liu et al., 2016; Richardson et al., 2011).

Healthcare providers (HCP) in hospitals and primary healthcare centers, are front line personnel providing health education and promoting health among patients, and the general population. Therefore, they could influence women to participate in HPV screening programs during visits for check-ups or other purposes. A recent in-depth focus group study showed that patients could be made aware of, and agree to HPV screening, if these were recommended by their HCP (Wong, et al., 2009). However, in Lao PDR, information on CC is still limited among HCP. In addition, there are few doctors who have adequate knowledge and good clinical practice in CC. Therefore, it is necessary that physicians in hospitals and healthcare centers are committed and well-trained to encourage women to seek HPV screening.

In Lao PDR, Papanicolaou (PAP) smear test (cervical cytology) and visual inspection of the cervix with acetic acid (VIA) are available in central hospitals and some provincial hospitals where CC training programs take place. These tests are relatively expensive for women living in remote areas and for those who have difficulty accessing healthcare. Therefore, the level of the disease might be underestimated, as in other less developed countries (De, et al., 2017; Forman, et al., 2012). In the Lao PDR, VIA has been identified as the most practical initial screening approach (Phongsavan, et al., 2012) due to the limited resources available.

The incidence of cancer and mortality have decreased dramatically in developed countries following the introduction of vaccination programs (Baandrup, et al., 2013; Markowitz, et al., 2013; Patel, et al., 2018). However, morbidity and mortality are still high in less developed countries, including the Lao PDR (Adams, et al., 2007; Bonanni, et al., 2015; Shrestha, et al., 2018). Since the Lao PDR has been endorsed by the Global Alliance for Vaccines and Immunization for HPV vaccination programs, a pilot project for fifth-grade schoolgirls (10–13 years) was conducted in Vientiane Capital and Vientiane Province (Bonanni, et al., 2015; Chanthavilay, et al., 2016). Thanks to this project, it is now planned to offer free HPV vaccines under the National Immunization Program to young girls. It might still be a challenge accessing it for those living in rural or remote areas. A recent study showed that the combination of vaccination and CC screening by VIA might be an optimal method for such programs in the Lao PDR (Chanthavilay, et al., 2016).

Our study aims to investigate the present situation regarding knowledge, attitudes and practice (KAP) towards CC screening among HCP, and to identify associated factors. To our knowledge this is the first such study. The results might provide useful information for improving the quality and use of CC screening in the Lao PDR.

Methodology

Study design:

A descriptive cross-sectional study was conducted in the provincial hospitals of Luang Prabang (northern Laos) and Salavan (southern Laos). In addition, all district hospitals in 4 districts of Luang Prabang and 7 districts in Salavan were included.

Study population:

Our population was selected from among clinicians or HCP, as well as those trained in CC screening.

- Inclusion criteria: All OB-GYN clinicians/healthcare providers above 18 years who signed the informed consent form.
- Exclusion criteria: OB-GYN clinicians/healthcare providers below 18 years or those who refused to participate in the study.

Research time and instruments:

Data collection took place from March to June 2018 (3 months). A standardized questionnaire was adapted from previous studies (Phongsavan, et al., 2012) plus some additional questions based on our objectives. The questionnaire was validated by two independent clinicians. The pre-test was performed among 10 HCP in Vientiane Capital prior to starting the study. The questionnaire was composed of 4 parts: 10 questions were on socio-demographic characteristics, 21 questions were related to knowledge of CC, and 8 questions were on attitude and practice.

Sample size and sampling method:

The number of physicians working in the provincial and district hospitals of two provinces was limited. All clinicians/healthcare providers were included based on certain criteria. No calculation of the sample size was made because the number of participants (85) was already small.

Ethical considerations:

The study was approved by the Ethics Committee of the National Institute of Public Health, Ministry of Health, Laos PDR. Prior to beginning our study, participants were told about its purpose and written informed consent was obtained. Participants could withdraw at any time from our study, with their responses still remaining confidential.

Statistical Analyses:

Data obtained was entered into Microsoft Excel (ME) and analysed using the STATA software program Version 15. We applied Chi-square test or Fisher's exact test where appropriate, in order to compare qualitative variables. *P*-value <0.05 was considered statistically significant. We considered knowledge about the risk of CC as "good" if a respondent mentioned at least 3 of the known risk factors (early sexual intercourse, multiple sexual partners, low socio-economic status, HPV infection). Practice was evaluated by having patients screened for CC, referring patients for screening, and in the case of female responders, if they had ever been screened themselves. Descriptive analyses of all the explanatory and outcome variables were done using mean and standard deviation for quantitative variables, frequency and percentages for categorical variables. The two tails *p*-value was used to find

the significance of study variables between the two groups of HCP. A value of p≤0.5 was considered significant. Both bivariate and multivariate logistic regression analyses were used to determine the association of each independent variable with the dependent variable. Variables significant in bivariate analysis (*p*-value ≤0.2) were entered into a multivariate logistic regression model to adjust for the effects of confounders on the outcome variable. The adjusted odds ratio, 95% confidence intervals and *p*-values were applied. *P*-value less than 0.05 was considered statistically significant.

Table 1: Demographic Characteristics of Healthcare Providers

Characteristics of respondents	n (%)	
Province		
LPB (North)	32	(37.6)
SLV (South)	53	(62.4)
Age median [IQR]	32	(24-51)
Marital status		
Single	16	(18.8)
Married	69	(81.2)
Education		
Post-graduate	35	(4.2)
University	39	(45.9)
Undergraduate/Technical college	11	(12.9)
Position		
Head of unit	35	(41.2)
Staff	50	(58.8)
Monthly personal income (LAK)		
≤ 800,000	6	(7.07)
> 800,000-3,000,000	63	(74.12)
> 3,000,000-5,000,000	14	(16.47)
> 5,000,000	2	(2.35)
Number of years working experience	5	range [3-8]

Number of correct respondents (% of correct answers); CC ; HPV human papilloma virus ; HCP healthcare providers; LPB Luang Prabang; SLV Salavan; LAK Lao kip

Results

Characteristics of participants

The HCP interviewed comprised of 85 healthcare providers (11 specialists, 39 family doctors and 35 technical staff) in 2 provincial and 11 district hospitals. The majority of participants (81%) were female and the average age was 32 years (range [22-62]). Half the respondents had an average of 5 years working experience (Table 1).

Knowledge of HCP towards cervical cancer

Of 85 HCP, 7.1% were found to have a good knowledge of CC, 68.2% had a fair knowledge, and 24.7% had poor knowledge. Of the total respondents, 88.2% reported that they had heard of HPV vaccines (Table 2). The sources of information related to vaccines were from meetings/workshops, university (37.3%), colleagues (28.0%) and national expanded programs on immunization (24.0%).

Attitude of HCP towards cervical cancer screening for themselves

Only 16 (18.8%) HCP had a good CC screening attitude, 53 (62.2%) a fair attitude, and 16 (18.8%) a poor attitude. Interestingly, more than 60% of HCP believed that all medical staff should be vaccinated for HPV as a prophylaxis. 25.4% thought that they could probably get infected by patients (Table 3).

Practice towards Cervical Cancer Screening of HCP

Table 4 shows practice towards CC screening among HCP. Only 1.2% were found with good CC practice scores, 14.1% and 84.7% had moderate and poor practice scores respectively.

The dichotomized attitude score shows that HCP over 36 years have a better attitude score than younger ones. Healthcare workers with higher education had a greater probability of having a good attitude score than those less educated. Married healthcare workers had higher probability of good attitude scores than those who were single, and HCP with more than 10 years working experience had a higher probability of a good attitude than those with less working experience.

Multivariate Analyses

All significant variables (*P*-value ≤0.2) were included in the final analysis. We found that HCP, who were classified as specialists/postgraduates, were four times more likely to have good knowledge compared to those who were undergraduates or technical staff (aOR = 4.0, 95% CI: 1.4-11.7). Furthermore, HCP who studied in a technical college were likely to have a lower attitude score (aOR = 5.5, 95% CI: 1.55-19.75) as were those with less than 10 years' work experience (aOR = 6.0, 95% CI:1.36-27.15).

Table 2: Knowledge of HCP Working in Gyneco-Obstetric Units in LPB and SLV provinces (n=85)

Variables	n (%)	
1. Question related to definition of CC	60	70.6
2. Question related to CC as a public health problem	84	98.8
3. Question related to diagnosis of CC at an early stage	52	61.2
4. Question related to method of CC diagnostic tests	82	96.5
5. Question related to Pap smear diagnosis at precancerous and cancerous stage of CC		84.7
6. Question related to describing symptoms of CC	80	94.1
7. Question related to multiple causes of CC	63	74.1
8. Question related to CC not caused by genetic disease	64	75.3
9. Question related to information on HPV	77	90.6
10. Question related to transmission of HPV	81	95.3
11. Question related to prevention of HPV	82	96.5
12. Question related to target population for screening for HPV	65	79.2
13. Question related to age of target population for preventing HPV	52	61.2
14. Question related to how often screening of HPV should be done	3	3.5
15. Question related to information regarding vaccine	75	88.2
16. Question related to target population of vaccination	39	40.0
17. Question related to treatment of CC	73	85.2

Number of correct respondents (% of correct answers); CC; HPV human papilloma virus ; HCP healthcare providers;

Discussion

To our knowledge, this is the first study to assess the knowledge, attitude and practice of HCP working in gynaeco-obstetrics units, towards CC screening. In Lao PDR, HCP in hospitals or healthcare centres are responsible for providing counseling on family planning, reproductive health issues and antenatal care. However, there is a concern that HCP themselves, have poor patient-communication skills and are incompetent regarding CC screening. This might be due to the lack of equipment and regular training on CC screening programs. Therefore, there is a need to encourage HCP to upgrade their knowledge in order to promote CC screening among women visiting hospitals and healthcare centers (Phongsavan et al., 2012).

Despite CC being the third most common cancer among women in the Lao PDR, there is no systematic screening program for it. This is a typical problem in low and middle income countries where mortalities are many. The high prevalence of this cancer is due to many challenges, including lack of funds and skilled personnel (Lyimo and Beran, 2012; Mandelblatt et al., 2002). A Pap smear test alone may not have enough sensitivity and specificity for detecting cervical dysplasia. Visual inspection could be the basis for a secondary prevention program (Hasanzadeh et al., 2011; O'Meara, 2002; Phongsavan et al., 2012). However, these facilities are available only in the referral hospitals with HCP who are trained in CC screening. Appropriate and more cost-effective tools are required, keeping in mind the needs of the country (Firnhaber et al., 2013).

Based on a final model, education is found to be a possible factor associated with knowledge of CC screening among HCP. This needs to be addressed by organising regular training and updating of HCP knowledge. This allows them sufficient information to convince patients to participate in CC screening programs. It is also shown in recent studies in Turkey, Uganda, India and other countries that inadequate knowledge of CC among HCP could cause an issue for CC screening programs (Mutyaba et al., 2006; Rahman and Kar, 2015; Yaren et al., 2008).

Table 3. Attitude of HCP working in gyneco-obstetrics units in LPB and SLV provinces (n=85) towards CC.

Variables	n (%)
CC screening for patients as routine work	18 (21.2)
CC screening for themselves (n=69 HCP)	25 (36.2)
Providing information about CC screening to patients during consultation	59 (69.4)
HCP working in OB-GY units do not need to be vaccinated	18 (21.8)
Offering treatment and providing information regarding further diagnoses and transferring patients to central hospitals if needed	85 (100.0)
Reasons for not screening patients during gynaecological examinations	
• Lack of medical equipment (screening set, Pap smear…)	36 (53.7)
• Lack of competent techniques	29 (43.3)
• Other reasons (not being responsible for this service, no recommendation, no request from patients)	17 (25.4)
Reasons for not screening themselves for CC	
• No symptoms or risk factors	21 (48.3)
• No time for testing	9 (21.0)
• Others (shyness or afraid of results…)	11 25.6
Reasons for not providing CC information to patients during gynaecological examination	
• No knowledge on this issue	11 42.3
• No request from patients	8 30.7
• Screening test not available	7 27.0
Reasons for HCP working in OB-GY to be vaccinated for HPV	
• For prevention	46 66.7
• Working closely with high risk patients	17 25.4
• Being a woman can be a risk factor	4 6.0
The participants think their health facility is not suitable for CC screening, because the examination room is uncomfortable	54 63.5

Number of correct respondents (% of correct answers); CC ; HPV ; HPV human papillomavirus ; HCP healthcare providers; OB-GY gynaeco-obstetrics unit

A recent study reported that most Lao women had very limited information regarding cancer caused by HPV (Sichanh et al., 2014). In addition, social barriers, cultural contexts and stigma are also principal issues, particularly in less developed countries. Healthcare providers should be responsible for opportunistic screening of women when they come for health checks, gynecology consultations, antenatal care during pregnancy, and other general health issues. Throughout hospitals in the Lao PDR, the Pap smear is the only method which is exclusively performed in a gynecology unit (Phongsavan et al., 2012), though this method might not be the gold standard for CC diagnosis. But if skills are improved, HCP should be able to provide appropriate and accurate information to the targeted population in order to convince them to undergo CC screening; a lesson learnt from previous studies in neighboring Thailand (Oranratanaphan et al., 2010; Wiwanitkit, 2006). Some studies have shown that it is possible to train midwives/nurses to screen for CC in remote areas (Chirenje et al., 1999; Mati et al., 1994).

This study found that though the majority of the HCP has limited knowledge of CC screening, they seem to know well that HPV can be transmitted for instance, by sex. Nevertheless, more than half the female HCP were not keen on being screened themselves. This means that HCP do not even know the importance of CC screening. Statistically, there is no significant difference in multivariate analyses between HCP in LPB and SLV who have been trained in CC screening.

The number of participants in this study might not be representative of the general Lao population as only 85 HCP in two provinces took part. Nevertheless, our findings give important information regarding KAP among HCP in the Lao PDR. The potential role of HCP in improving cervical screening rates was not investigated in this study. Questionnaires used here were designed for quantitative data only. Both national scale and in-depth qualitative studies might be useful in order to determine evidence-based policy on CC screening programs best adapted to the limited resources in the Lao PDR.

Nevertheless, these findings are of interest for public health authorities and training providers who are responsible for CC screening programs. Implementing re-orientation courses and regular supervision are necessary to ensure that all HCP receive appropriate knowledge and develop good attitudes and practices. National guidelines on CC screening, treatment and HPV vaccination should be created and further large-scale studies to investigate cost effectiveness should be conducted.

Table 4: Cervical Cancer Screening Practice of Participants Working in gyneco-obstetric units in LPB and SLV (n=85)

Variables	n (%)
Have trained in CC screening	14 (16.5)
Are able to take samples for PAP smear test	33 (38.8)
CC screening performed in hospital (the most common technique used is VIA)	27 (31.8)
Suitable equipment for CC screening available in hospital	8 (9.4)
Transferred patients to other places for Pap smear test	28 (32.9)
Able to treat CC by hysterectomy	2 (2.4)
Reasons HCP could not be trained in CC screening	
• No training available	42 (59.2)
• Non-practical staff	22 (31.0)
• Not selected for training	7 (9.8)
Reasons HCP do not transfer patients to other places for CC diagnosis	
• No suspected cases (no request from patients)	47 (82.5)
• Do not know how to provide information	6 (10.5)
• Patients had other infections such as STI	4 (7.0)

The number of correct respondents (% of correct answers); CC ; HPV ; STI sexually transmitted infections; HPV human papilloma virus ; HCP healthcare providers; PAP Papanicolaou (PAP) smear test

Potential conflicts of interest: None declared

Author contribution

Conceived and designed the study: SS, PP, SC; Performed the study: SS, PP; Developed the manuscript: SS, PP, PA. All authors revised and approved the manuscript.

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Table 5: Factors Associated with KAP towards Cervical Cancer Screening, n=85

	Knowledge			Attitude			Practice		
	OR	**95% CI**	**P-value**	**OR**	**95% CI**	**P-value**	**OR**	**95% CI**	***p*-value**
Province: LPB vs SLV	3.9	0.81-19.03	0.09	2.0	0.59-7.00	0.25	3.9	0.81-19.03	0.09
Age: >36 vs ≤ 36	2.7	0.67-10.50	0.16	2.4	0.71-8.34	0.15	2.7	0.67-10.50	0.16
Male vs female	1.3	0.32-5.65	0.67	2.3	0.95-9.03	0.06	1.4	0.32-5.65	0.67
Post-graduates vs undergraduates	0.3	0.09-1.47	0.16	2.4	0.69-8.26	0.16	0.4	0.09-1.47	0.16
Single vs married	0.3	0.07-1.04	0.06	3.5	0.92-13.52	0.06	0.3	0.07-1.04	0.06
Leaders vs staff	0.6	0.17-2.21	0.46	4.5	0.26-76.63	0.30	0.6	0.17-2.21	0.46
Duration of working experience >10 years vs ≤10 years	3.7	0.76-17.98	0.10	2.9	0.77-11.34	0.11	3.7	0.76-17.98	0.10

HCP healthcare providers; OR odds ratios; 95% CI confidence interval; LPB Luang Prabang; SLV Salavan; otherwise indicated

Table 6: Final Models of Knowledge and Attitude towards CC Screening among 85 HCP

	Knowledge			Attitude		
	aOR	**95%CI**	**P-value**	**aOR**	**95%CI**	**P-value**
Education	4.0	1.43-11.66	0.008	5.5	1.55-19.75	0.008
Duration of working experience	NS	NS	NS	6.0	1.36-27.15	0.018

HCP healthcare providers; aOR adjusted odd ratio; 95% CI confidence interval; Luang Prabang; Salavan; otherwise indicated