

RESEARCH COMMUNICATION

Knowledge about Human Papillomavirus Infection and Cervical Cancer Prevention among Nurses in Chiang Mai University Hospital, Thailand

Yupin Phianmongkhol¹, Nuttawan Suwan¹, Jatupol Srisomboon², Chumnan Kietpeerakool^{2*}

Abstract

This study was undertaken to evaluate knowledge about HPV infection and cervical cancer among nurses in Chiang Mai University Hospital, Thailand. The 16 questions evaluating knowledge were “true/false/do not know” type. Two hundred and twenty nurses agreed to participate in this survey. Most knew that cervical cancer is the most common female cancer in Thailand (92.7%), HPV infection is a causal factor of cervical cancer (81.8%), early stage cervical cancer is curable (94.1%), and an adequate scale of cervical screening could prevent morbidity and mortality from cervical cancer (86.8%). The majority of participants (more than 70%) correctly acknowledged risk factors for cervical cancer as smoking, having multiple sexual partners, and sex at an early age. However, the majority of participants did not know that HPV infection and early stage cervical cancer are commonly asymptomatic. In conclusion, knowledge regarding cervical cancer among nursing staff in the author’s institute is considerably favorable. However, their understanding about the natural history of HPV infection and cervical cancer is suboptimal, and requires further attention if an effective cervical cancer screening program is to be implemented.

Keywords: Cervical cancer - control measures - screening - risk factors - natural history

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Introduction

Although cervical cancer is acknowledged as a preventable disease, it is still the major health burden in many developing countries because an adequate scale of screening program is lacking (Sellors et al., 2003; Karimi Zarchi et al., 2009). In Thailand, the incidence of cervical cancer is continuously rising (Moore et al., 2010). So, the strategies for effective cervical cancer prevention are of utmost relevance.

It has been noted many times that the key for successful implementation of cervical cancer prevention program in resource-limited settings is designing a program specific to the area (Blumenthal et al., 2005; Sellors et al., 2003). Thai nurses generally play a major role in health education and promotion. Additionally, well-trained nurses perform acceptably well when responsible for cervical cancer screening and treatment of cervical precancerous lesions (Gaffikin et al., 2003; Chumworathayi et al., 2008). However, an effective program must begin by evaluating basic knowledge about human papillomavirus (HPV) infection and cervical cancer prevention among nurses.

This study was undertaken to evaluate knowledge about HPV infection, cervical carcinogenesis, and cervical prevention strategies among nurses at Chiang Mai University Hospital, Chiang Mai, Thailand.

Materials and Methods

After approval from the Research Ethics Committee, nurses who practiced at Chiang Mai University Hospital were asked to participate in a survey. Two hundred and twenty nurses agreed. All responses were anonymous. The main study was conducted from April to August 2008.

A pilot questionnaire was first administered to a sample of volunteers. It was then modified, presented for ethical approval, and revised accordingly. The questionnaire was administered through an interview. The interviewers were given a details orientation on the research protocol and questionnaire. Before initiating a survey, the interviewers carried out a practice session under the observation of the investigators and received feedback. The participants gave informed consent before the interview started. After the interview, the participants received details counseling about HPV infection, cervical cancer, and prevention strategies.

The questionnaire was divided into two sections to collect data on the followings: (1) demographic characteristics; and (2) knowledge of HPV infection, risk of cervical carcinogenesis, and cervical screening. The 16 questions evaluating knowledge were “true/false/do not know” questions. All items were assessed for validity by health survey experts.

¹Faculty of Nursing, ²Department of Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
*For correspondence: kiet_ji@hotmail.com

The data were analyzed by using SPSS computer software (SPSS, Chicago, IL, USA).

Results

Mean age ± SD of 220 participants was 36 ± 8.4 years (range, 23-57 years). The majority of participants (68.6%) were younger than 40 years. Only seven women (7.0%) were older than 51 years. One hundred and thirteen women (51.4%) were single. One-hundred and thirty-seven (62.3%) were nulliparous. Table 1 displays baseline characteristics of 220 participants.

Most participants knew that cervical cancer is the most common female cancer in Thailand (92.7%), HPV infection is a causal factor of cervical cancer (81.8%), early stage cervical cancer is curable (94.1%), and cervical screening could prevent morbidity and mortality from cervical cancer (86.8%). The majority of participants (more than 70%) correctly identified risk factors for cervical cancer as smoking, having multiple sexual partners, and sex at an early age. However, the majority of participants did not know that early stage cervical cancer is commonly asymptomatic (Table 2).

Although most participants knew that HPV is a cause of cervical cancer (81.8%), knowledge about the natural course and prevention of HPV infection was generally

Table 1. Baseline Characteristics of 220 Participants

Characteristic	No (%)
Age	23-30 64 (29.0)
	31-40 87 (39.5)
	41-60 69 (31.5)
Marital status	Single 113 (51.4)
	Married 93 (42.3)
	Divorced 8 (3.6)
	Widowed 6 (2.7)
Educational level	Bachelor's degree 185 (84.0)
	Master's degree 34 (15.5)
	Doctoral degree 1 (0.5)
No. pregnancies	0 137 (62.3)
	1 35 (15.9)
	2 31 (14.1)
	More than 2 17 (7.7)

limited. Only 16.8% of participants correctly answered that HPV infection cannot be prevented by hygiene care alone. The majority of participants did not know that HPV infection is generally asymptomatic.

At the time of the survey, less than half of the participants (47.7%) agreed that HPV vaccine can prevent HPV infection. The majority of participants (66.4%) did not know about the side effects of HPV vaccine. Approximately 86.0% of the participants correctly acknowledged that cervical screening is still mandatory for vaccinated women (Table 2).

The main sources of information regarding knowledge about cervical cancer and its prevention strategies were print and electronic media including television, magazines, and newspapers. Approximately one-third (28.2%) received cervical cancer information from Internet searching. Academic conferences were rarely noted to be sources of cervical cancer information among the (less than 1%).

Discussion

In the present study, the authors surveyed basic knowledge about HPV infection, risk factors and prevention strategies of cervical cancer among registered nurses in Chiang Mai University Hospital, Thailand. Overall, the level of knowledge about cervical carcinogenesis among these participants was considerably high. More than 70.0% of participants correctly responded that HPV infection is a causal factor of cervical carcinogenesis, and that additional risk factors for cervical carcinogenesis are sex at early age, multiple sexual partners, and smoking. They knew that cervical cancer-related morbidity and mortality can be prevented by an adequate scale of cervical screening.

However, participants' understanding about the natural course of cervical cancer might be considerably inadequate. The majority did not know that early stage cervical cancer is commonly asymptomatic. They mistakenly believed that abnormal vaginal discharge or bleeding are common manifestations of patients with early stage cervical cancer. This misunderstanding of the natural history of invasive cervical cancer could result in an error

Table 2. Knowledge about HPV Infection, Risk Factors and Prevention Strategies of Cervical Cancer

Questions	Correct answer	Do not know
Cervical cancer is the most common female cancer in Thailand (true)	204 (92.7)	14 (6.4)
Cervical cancer is caused by HPV infection (true)	180 (81.8)	32 (14.5)
HPV infection is contracted by sexual contact (true)	183 (83.2)	24 (10.9)
HPV infection commonly presents with abnormal discharge, abnormal bleeding or fever (false)	23 (10.5)	34 (15.5)
HPV infection can be prevented by hygiene care alone (false)	25 (11.4)	22 (10.0)
HPV infection can be prevented by using a condom (true)	151 (68.6)	32 (14.5)
HPV infection can be prevented by vaccination (true)	105 (47.7)	87 (39.5)
HPV vaccine induces immunity to HPV (true)	141 (64.1)	69 (31.4)
HPV vaccination has no major side effects (true)	61 (27.7)	146 (66.4)
Cervical cancer screening is not necessary among vaccinated women (false)	189 (85.9)	24 (10.9)
Smoking increases the risk of cervical cancer (true)	185 (84.1)	42 (19.1)
Having multiple sexual partners increases the risk of cervical cancer (true)	175 (79.5)	24 (10.9)
Sex at an early age increases the risk of cervical cancer (true)	174 (79.1)	33 (15.0)
Cervical cancer commonly presents with abnormal discharge or bleeding (false)	6 (2.7)	15 (6.8)
Cervical screening can prevent morbidity and mortality from cervical cancer (true)	191 (86.8)	5 (2.3)
Cervical cancer is curable if detected at an early stage (true)	207 (94.1)	11 (5.0)

Abbreviations: HPV, human papillomavirus; STD, sexually transmitted disease. Data are presented as numbers (percentages)

during cervical cancer screening. In the authors' previous report, the main reason for not undergoing Pap smear screening among female sex workers was an absence of symptoms (Kietpeerakool et al., 2009). Herbert et al (2009) reported that the screen-detected cervical cancers are more likely to be found at an earlier stage than those which are symptomatic. Therefore, the details about the natural course of cervical cancer progression should be incorporated into an information program.

Due to advances in current knowledge about cervical cancer, HPV infection, a sexually transmitted disease, is acknowledged as a causal factor for cervical cancer carcinogenesis. This information is well known among participants in the present study. More than 80% correctly answered that HPV infection is a cause of cervical cancer and is contracted by sexual contact. However, the knowledge about the natural cause of and prevention for HPV infection is quite low (Table 2). Only approximately 11% of participants knew that HPV infection is generally asymptomatic. The majority of participants incorrectly answered that HPV infection commonly causes abnormal vaginal bleeding, abnormal vaginal discharge, or fever. The information regarding the asymptomatic nature of HPV infection therefore should be highlighted.

A condom is an effective tool for preventing sexually transmitted disease if used correctly and consistently. Although consistent use of condoms decrease the risk of HPV infection (Winer et al., 2006; Nielson et al., 2010), the incidence of HPV infection among condom users still remains high. Winer et al (2006) reported that among newly sexually active women whose partners used condoms for all instances of intercourse during an eight-month study period, the incidence of HPV infection was approximately 38 per 100 patient-years. Neilson et al (2010) recently demonstrated that even in men who reported always using a condom, approximately 38% of participants were subsequently found to have HPV infection. This emphasizes the need to increase an awareness of condom use's imperfect prevention of HPV infection.

The limitations of this study include a lack of systematic random sampling. Based on a convenient selection, these results therefore might not be represent the knowledge of the entire nursing staff in the authors' institute. Additionally, this survey was solely conducted in the University hospital, a tertiary care center; generalizing these results to nurses in the different settings should be done cautiously.

In conclusion, the basic knowledge regarding cervical cancer in Thailand, cervical carcinogenesis, and the necessity of cervical cancer screening is considerably favorable among nursing staffs in Chiang Mai University Hospital. However, their understanding of the natural history of HPV infection and cervical cancer is suboptimal, requiring further attention if an effective cervical cancer screening program is to be implemented.

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References

- Blumenthal PD, Lauterbach M, Sellors JW, et al (2005). Training for cervical cancer prevention programs in low-resource settings: focus on visual inspection with acetic acid and cryotherapy. *Int J Gynaecol Obstet*, **89 Suppl 2**, S30-7.
- Chumworathayi B, Srisupundit S, Lumbiganon P, et al (2008). One-year follow-up of single-visit approach to cervical cancer prevention based on visual inspection with acetic acid wash and immediate cryotherapy in rural Thailand. *Int J Gynecol Cancer*, **18**, 736-42.
- Gaffikin L, Blumenthal PD, Emerson M, et al (2003). Safety, acceptability, and feasibility of a single-visit approach to cervical-cancer prevention in rural Thailand: a demonstration project. *Lancet*, **361**, 814-20.
- Herbert A, Anshu, Gregory M, et al (2009). Screen-detected invasive cervical carcinoma and its clinical significance during the introduction of organized screening. *BJOG*, **116**, 854-9.
- Karimi Zarchi M, Behtash N, Chiti Z, et al (2009). Cervical cancer and HPV vaccines in developing countries. *Asian Pac J Cancer Prev*, **10**, 969-74.
- Kietpeerakool C, Phianmongkhon Y, Jitvacharanun K, et al (2009). Knowledge, awareness, and attitudes of female sex workers toward HPV infection, cervical cancer, and cervical smears in Thailand. *Int J Gynaecol Obstet*, **107**, 216-9.
- Moore MA, Attasara P, Khuhaprema T, et al (2010). Cancer epidemiology in mainland South-East Asia - past, present and future. *Asian Pac J Cancer Prev*, **11 Suppl 2**, 67-80.
- Nielson CM, Harris RB, Nyitray AG, et al. (2010). Consistent condom use is associated with lower prevalence of human papillomavirus infection in men. *J Infect Dis*, **202**, 445-51.
- Sellors J, Lewis K, Kidula N, et al (2003). Screening and management of precancerous lesions to prevent cervical cancer in low-resource settings. *Asian Pac J Cancer Prev*, **4**, 277-80.
- Winer RL, Hughes JP, Feng Q, et al (2006). Condom use and the risk of genital human papillomavirus infection in young women. *N Engl J Med*, **354**, 2645-54.