RESEARCH COMMUNICATION

Knowledge, Attitudes and Practices *vis-à-vis* Cervical Cancer Among Registered Nurses at the Faculty of Medicine, Khon Kaen University, Thailand

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Abstract

Background: Cervical cancer is the most common cause of death from cancer among women in Thailand and in almost all patients, human papillomavirus (HPV) has been found. Various international studies indicate that the knowledge level vis-à-vis cervical cancer and HPV in the general population as well as healthcare professionals is low, but no such study has yet been done in Thailand. Objectives: Our study's aim was to ascertain the level of knowledge, the attitudes and practices regarding cervical cancer among registered nurses working in Srinagarind (university) Hospital in an urban setting in Northeast Thailand. Materials and Methods: Systematic sampling was used and self-administered questionnaires were sent to 149 registered nurses; 133 (89.3%) of whom responded. Data were processed using descriptive statistics including frequency, percentages and the 95% CIs. Results: The respondents' averaged 34.6 years of age (median, 33; range, 21-56) while 54.6% had sexual partners and 61.4% had had normal deliveries. The respective median knowledge score, interquartile range and mean knowledge score and range for cervical cancer vs. HPV vs. cervical cancer prevention were: 11.00, 5.0, 10.14 (95%CI 9.6, 10.7), 0-15 vs. 4.00, 2.0, 3.58 (95%CI 3.5-4.2), 0-7 vs. 8, 3.00, 7.5 (95%CI 7.1-7.9), 1-11. 66.2% would like to have prophylactic HPV vaccines because they thought that it would prevent HPV infection (77.3%) or prevent cervical cancer (39.1%), which are major misunderstandings. Conclusion: Almost all of the registered nurses working at Srinagarind Hospital have a moderate level of knowledge regarding cervical cancer and HPV but there are still some major misunderstandings; thus, educational pamphlets, notices and hospital announcements would be useful in increasing their knowledge.

Key Words: Cervical cancer - knowledge - attitude - practice

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Introduction

Cervical cancer is the most common gynecological cancer in Thailand. The age-adjusted standardized incidence ratio is 19.5 per 100,000 women-years (Pengsaa and Jindawijak, 2003). Approximately 6,000 cases develop and 3,000 die annually. In addition, 70% of all gynecological cancers treated in Srinagarind (university) Hospital in Northeast Thailand are cervical cancers.

Human papillomavirus (HPV) is the substantiated cause of cervical cancers (Bhattarakosol et al., 1996; Siritantikorn et al., 1997; Chicharoen et al., 1998; Breitburd and Coursaget, 1999; Walboomers et al., 1999; Koutsky et al., 2002; Clifford et al., 2003; Harper et al., 2004; Taira, 2004; Ishida et al., 2004; Mao et al., 2004). HPV testing is too expensive (2,500 THB/case) to use as a screening test in Thailand's public health setting while the Papanicolaou (Pap) smear is widely used, at one-tenth the cost (250 THB/case), but only 5% coverage has been achieved. Despite 8-12 months of health education, the reasons why Thai women were not having Pap smears included: being too busy (67.5%), feeling embarrassment (32.5%) and/or not having any symptoms (20.6%) (Chumworathayi and Chumworathayi, 2007).

Registered nurses are the most visible, frontline personnel providing health education to patients and the general population (Chumworathayi and Chumworathayi, 2007). Various international studies indicate that the knowledge level of cervical cancer and HPV in the general population and healthcare professionals is low to moderate (Philips et al., 2003; Hislop et al., 2004; Anya et al., 2005; Denny-Smith et al., 2006; Moreira et al., 2006). Although we believe that Thai nurses have enough knowledge to educate people, such knowledge assessment studies in Thailand have not yet been done. We, therefore, conducted this study to explore the knowledge, attitudes and practices vis-à-vis cervical cancer and HPV among Srinagarind (university) Hospital's registered nurses. The study's results will be used for education planning.

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Materials and Methods

After receipt of institution's Ethical Review Board approval, the cross-sectional survey was done between May 10 and 14, 2006, at Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, in Northeast Thailand. Female registered nurses were included.

Based on our pilot study of 30 registered nurses at Khon Kaen Provincial Hospital, we found a mean knowledge score of 11.1±3.1. Using the Winpepi software, we calculated the sample size needed with a 95% level of confidence and 5% acceptable error, plus 20% loss of subjects, would be 149 volunteers.

During the study period, registered nurses at Srinagarind Hospital numbered 685. Using systematic random sampling, the sampling interval was 685/149 or 4.56. We began at number 1 in the list, then if the last number plus the interval was more than 0.50, we used the next integer; if the number was less than 0.50, we used the last integer.

Our self administered questionnaire was tested for validity in a field test comprising 10 nurses from Khon Kaen Provincial Hospital. The questionnaire was then tested for reliability in another field test comprising 22 nurses from Samsoong District Hospital. The Cronbach's alpha coefficient was 0.77, within the reliable range (>0.6).

The questionnaires (149) were sent to the volunteer potential respondents on May 10, 2006, of which 133 (89.3%) were returned completed by May 14th. All of these were included in the study. We used a double entry technique to ensure the data was correctly entered. EpiInfo software version 6.04d was also used to verify data entry. Data were then analysed using descriptive statistics (i.e., frequency, distibution, percentage, 95% CI, median, mean, range, SD and interquatile range).

Table 1. Demographic Data of the 133 Respondents

Demograhic Data	Statistic Parameters	Statistic Values
Age (years)	Mean±SD	34.6±8.9
	Med*	33.0±16.8
	Minimum	21
	Maximum	56
	Kolmogorov-Smirnov test	P<0.001
Departments	Obstetrics and Gynecology	9.9%
	Internal Medicine	16.8%
	Others	73.3%
Marital status	Single	36.2%
	Married	54.6%
	Separated	6.9%
	Divorced	2.3%
Highest degree	Bachelor	87.2%
	Master	9.0%
	Certified board	3.8%
Vaginal deliveries	Never	38.6%
	Ever	61.4%
	Once or twice	90.6%
	More than twice	9.4%
Monthly income (THB)	Mean±SD	17,253±7,634
	Med*	15,000±9,540
	Minimum	7,300
	Maximum	65,000
	Kolmogorov-Smirnov test	P<0.001

*Med: Median±Interquartile Range

Results

The demographic data for all 133 volunteers are presented in Table 1. The mean age was 34.61±8.81 years of age; of whom 54.6% had sexual partners and 61.4% had had vaginal deliveries. Monthly incomes averaged 17,253.40±7,634.78 THB, the distribution pattern between respondents and non-respondents was similar among departments.

Most (89.1%) of the respondents knew that there are not any symptoms at the pre-invasive stage and a respective 69.8%, 77.7% and 92.4% knew that common symptoms include post coital bleeding, intermenstrual bleeding and abnormal leukorrhea or blood-stained vaginal discharge. A minority 21.3% knew that fever is not a symptom. Again, most (81.8% and 70%) knew that the cause of cervical cancer is HPV infection and genetic predisposition, respectively. Two-thirds of respondents (67.7%) knew that eating raw food is not related to cervical cancer.

A respective 81.8 and 85.6 percent of respondents knew that first sexual intercourse at a young age and having multiple sexual partners is a risk factor, but only 40.5% knew that smoking was also a risk factor. A respective 42.6, 72.1, 44.4 and 35.2 percent knew that IUD use, condom use, vaginal douch and alcoholic consumption is not a risk factors. Over two-thirds (72.2%) of respondents knew that HPV infection is a sexually transmitted disease (STD) and 84.2% knew that its risk factor is multiple sexual partners, but only 60.9% knew that almost 100% of cervical cancer patients have HPV infection. Most (94.0%) knew that not having multiple sexual partners would help decrease the risk for developing cervical cancer but only 56.1 and 58.6 percent knew that no smoking and condom use also would help, respectively.

One-half (54.9%) of respondents knew that Pap smears are needed after reaching a sexually age active and most (85.0%) that never-sexually active women should also have Pap smears after the age of 35, and nearly all (96.2%) thought that especially after menopause Pap smears are needed for everyone.

All respondents answered each of the questions and both the individual and overall scores indicated a moderate level of knowledge about cervical cancer, its cause and prevention (Table 2). Age had a significant inverse

Table 2. Total Score and Scores from Each Part of the Questionnaire

Categories/statistical parameters		Statistical Values
Cervical cancer and its preventions score	Mean±SD	10.14± 3.272
	Med*	11.00± 5
	Minimum – Maximum	0 – 15
Human papillomavirus infection score	Mean±SD	3.85 ± 1.790
	Med*	4.00 ± 2
	Minimum – Maximum	0 – 7
Cervical cancer prevention practices score	Mean±SD	7.50 ± 2.245
	Med*	8.00 ± 3
	Minimum – Maximum	1 – 11
Total score	Mean±SD	21.49± 6.108
	Med*	22.00± 8
	Minimum – Maximum	3 – 30

*Med:Median±Interquartile Range

Table 3. Perceived Cervical Cancer Risks

Perceived Cervical Cancer Risks	Percentage
No risk	6.0
Low risk	48.1
Moderate risk	24.8
High risk	4.5
Not sure	15.8

Table 4. Current and Future Practices Toward Cervical Cancer Prevention

Practices on Cervical Cancer Prevention	Current (%)	Future (%)
Abstinence	18	6.0
Condom use	20.3	30.8
Single sexual partner	52.6	69.2
Having regular Pap smear	56.4	86.5
Having HPV vaccine	-	23.3
Others	10.5	5.3

association with knowledge ($p<0.05$) (the younger the respondent the greater knowledge level). Other factors, such as marital status and education, were not associated with the knowledge level score.

Regarding attitudes toward the risk of cervical cancer, 6% thought that they had no risk, 48.1% a low risk, 24.8% a moderate risk and 4.5% a high risk (Table 3). Regarding current practices toward preventing cervical cancer, 18% practiced abstinence, 20.3% required condom use, 52.6% had a single partner, and 56.4% underwent Pap smears every year. Intended future practices for cervical cancer prevention included abstinence (6%), condom use (30.8%), single partner (69.2%), annual Pap smear (86.5%), and HPV vaccine (23.3%) (Table 4).

Most (88.0%) knew that treatment for cervical cancer is not 100% effective for all stages but 3.8% thought the opposite, 7.5% did not know and 0.8% were unsure. Regarding the HPV vaccine, 66.2% would like to have it because they thought that it would prevent HPV infection (77.3%) or prevent cervical cancer (39.1%). One-third of respondents (33.8%) would not like the vaccine because they: were unsure of its efficacy (55.6%), thought they had no risk (44.4%), were afraid of adverse side-effects (28.9%) (Table 5).

Table 5. Attitudes Regarding the Self-Use of the HPV Vaccine

Use or Not and Reasons	Percentage
Use	66.2
It can prevent cervical cancer	39.1
It can prevent HPV infections	77.3
I have the risk for HPV infections	20.5
Others	5.7
Not use	33.8
Fear of its adverse effects	28.9
I have no risk for HPV infections	44.4
I am not sure about its effectiveness	55.6
Others	13.3

Table 6. Attitudes Regarding HPV Vaccine's Sociocultural Impact upon Multiple Sexual Partner Behaviour Among Adolescents

Do you agree that HPV vaccine will have sociocultural impact upon increasing multiple sexual partner behaviour among adolescents?	Percentage
Highly agree	12
Agree	25.6
Not sure	37.6
Disagree	21.8
Highly disagree	1.5

Regarding the sociocultural effects of HPV vaccine, 37.6% agreed and 23.3% disagreed that it would increase the propensity to having multiple sexual partners among adolescents, respectively, while the majority was unsure either way. (Table 6) Most (86.2%) felt a need for more information about cervical cancer, especially with respect to its cause and risk factors. Ninety percent wanted more information about HPV, particularly regarding routes of transmission and most wanted the information in written form.

Discussion

Our objective was to explore the level of knowledge, the attitudes and practices regarding cervical cancer among registered, female nurses working at Srinagarind (university) Hospital. Through the use of systematic sampling, questionnaires were sent to 149 nurses; 133 (89.3%) of whom responded. Our questionnaire was originally developed and validated by a gynecologic oncologist and a field test, respectively. Its reliability was tested in another field test where we found its Cronbach's alpha coefficient was 0.77, within the reliable range (>0.6). The nurses respondents were between 21 and 56 years of age (mean, 33), 12.8% of whom had a degree higher than BSc. The nurses' general knowledge was moderate to good (range = 3-30; mean = 21.5/35 points ± SD 6.108; median = 22.0; IQR = 8.0), especially regarding cervical cancer and its prevention. This result is similar to the study by Denny-Smith et al (2006) among American female nursing students in which the mean was 10.2/15 points (SD, 2.4; range, 1-15).

When looking into the knowledge level regarding symptoms, 77.7% of our respondents knew that abnormal bleeding per vagina is one of the symptoms of cervical cancer, similar to the 80.6% in a study by Anya et al. (2005) among female health personnel. However, 81.2% of our respondents knew that HPV infection was the cause of cervical cancer and 72.2% that HPV infection is an STD, both results are greater than studies among the general female adolescent population (Moreira et al., 2006) in which only a respective 33% and 66.7% knew.

Despite our nurse respondents' having a moderately good knowledge, they needed more knowledge about the causes and risks of cervical cancer, especially with respect to HPV as 33.1% incorrectly understood that an HPV infection was associated with genital warts and only 29.3% knew that women with HPV infection do not necessarily have genital warts. However, this was better than the result from study by Moreira et al (2006) in which only 17.6% of their respondents had a correct understanding.

However, regarding the HPV vaccine, 66.2% would

like to have it because they thought that it would prevent HPV infection (77.3%) or prevent cervical cancer (39.1%). These are major misunderstandings because the HPV vaccines available now are only prophylactic vaccines that should be given to those without any HPV infections. Most sexually active women have already experienced infection and may, therefore, have only limited protection from new infections if they or their sexual partners have risky behaviour. Another important risk factor, but not directly related to sexual behaviours and HPV infection, is smoking: 28.2% of respondents had an incomplete understanding which could limit their effectiveness in conveying cervical cancer prevention behaviour to the general population.

The score range among our nurses was wide and we found a significant inverse association between age and knowledge ($p<0.05$), similar to the study by Philips et al. (2003) among health personnel. Other factors, such as marital status and education, were not associated with level of score, in contrast to the study by Anya et al. (2005)—in which divorced or separated women had a higher level of knowledge—and to the study by Moreira et al. (2006)—in which higher education had positive association with the level of knowledge. Another factor which might have had an effect on the level of knowledge among our nurses is whether personal doctor is male or female. Hislop et al. (2004) found that women whose personal physician was female had a higher level of knowledge than women whose personal physician was male: this level of knowledge was associated with frequency in having a Pap smear.

The strengths of this study include: (1) it is the first of its kind in Thailand; (2) it has a sufficiently large sample size and high response rate (89.3%); and, (3) it reveals more areas of knowledge useful for planning medical education for health personnel. Limitations include: (1) the validity of a self-administered questionnaire; and (2) that only female registered nurses were selected so the results cannot be generalized to other health personnel.

Our results indicate the need for further education on cervical cancer among female registered nurses in our hospital. Since the level of knowledge is related to changes in behaviour, further data is also still needed concerning the level of similar knowledge among other Thai health personnel and in the general population, especially among adolescents. Notwithstanding, health education on cervical cancer should be increased generally in order to reduce the incidence-burden of female cancer in Thailand.

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