



Knowledge of cervical cancer prevention and screening among women at Thai Binh hospital of Obstetrics and Gynecology in 2023

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ABSTRACT

Objectives: To describe knowledge of cervical cancer prevention and screening and to identify associated factors among women at Thai Binh Hospital of Obstetrics and Gynecology in 2023. **Participants and methods:** A descriptive cross-sectional study design was conducted among 400 women aged 21-65 years at Thai Binh Hospital of Obstetrics and Gynecology to collect data on knowledge of cervical cancer prevention and screening by using a self – reported questionnaire. The maximum score for the general knowledge was 46 points. **Results:** The percentage of participants with good knowledge of cervical cancer prevention and screening was 38.8%. Knowledge of cervical cancer prevention and screening was related to age, occupation, and education level. **Conclusion:** The knowledge of cervical cancer prevention and screening among the women in the research was quite low. Therefore, it is necessary to strengthen communication and health education for women at the hospital by providing more information sheets (posters, leaflets...) about cervical cancer, vaccination and screening, therefore, they may improve their knowledge while getting the healthcare service at the hospital.

Keywords: Cervical cancer, women, knowledge.

INTRODUCTION

Cervical cancer is one of the most common cancers among women worldwide and the second only behind breast cancer. Cervical cancer ranks eighth among cancers in women and is also the fifth most common cancer in women aged 15-44 years in Vietnam. Globally, there were 604,127 cervical cancer new cases and 341,831 deaths in 2020 ¹. Despite being preventable and early detectable, cervical cancer is still one of the most prevalent cancers in Vietnam. Every year, there are 4,132 new cases of cervical cancer diagnosed, the

incidence rate is 13.3/100,000 women and 2,223 deaths annually in Vietnam (estimated for 2020) ¹. One of the reasons leading to this situation is that women still have limited knowledge of prevention as well as do not have the right attitudes and good practices on prevention and screening of cervical cancer ².

Cervical cancer creates a large disease burden for patients, their families, the health system and the entire society ³. Cervical cancer can be avoided with good prevention, early detection and regular screening of cervical cancer, from which it

will be curable and reduce the mortality rate for women ⁴.

To provide more information to local policy makers, from which they will have plans and strategies to educate and raise awareness of women about cervical cancer in Thai Binh province, the study was conducted with the aim of describing knowledge on prevention and screening of cervical cancer and identifying associated factors among women at Thai Binh Hospital of Obstetrics and Gynecology in 2023.

PARTICIPANTS AND RESEARCH METHODS

Participants: Women got the healthcare service at Thai Binh Hospital of Obstetrics and Gynecology from March 2023 to May 2023.

Inclusion criteria: Women aged from 21 - 65 years who were able to communicate, read and understand Vietnamese and agree to participate in the research.

Exclusion criteria: Women suffered from and were treated for cervical cancer.

Location and time of the study: The study was conducted at Thai Binh Hospital of Obstetrics and Gynecology from March 2023 to June 2023.

Research design: A descriptive cross-sectional study design was employed.

Sample size: The formula was applied to calculate sample size:

$$n = Z_{1-\alpha/2}^2 \frac{p(1-p)}{d^2}$$

In which: n: minimum sample size.

Z: reliability coefficient (with 95% confidence level and statistical significance level taking $\alpha = 0.05$, $Z_{0.975} = 1.96$).

+ p: is the percentage of women with satisfactory knowledge of cervical cancer prevention. According to research results

by Nguyen Thi Hong Hanh ⁵, the percentage of women with satisfactory knowledge of cervical cancer prevention was 36.3% so $p = 0.363$ was chosen.

+ d: is margin of error, estimated $d = 0.05$.

Substituting into the formula, $n = 356$ and margin of error was about 10% so the minimum sample size required for the study was 392 women.

Sampling method: Convenient sampling method was used. all participants got the healthcare service Thai Binh Hospital of Obstetrics and Gynecology that met the criteria were included in the study until the sample size was sufficient. The total sample size was 400 women.

Measurement: A questionnaire was developed by the research team based on Guidelines for cervical cancer prevention and control of the Ministry of Health ³, the national action plan on cervical cancer prevention and control for the period 2016-2025 ⁶, and also referred to questionnaires of previous studies of cervical cancer prevention by some authors ^{5,7}.

- Part I: General information of the participants

- Part II: Knowledge of cervical cancer prevention and screening

Knowledge assessment: For single-choice items, the participant got 1 point with a correct answer, and 0 points with an incorrect answer. With multiple-choice items, the participant chose each answer so he/she got 1 point; chose "do not know" or "other", got 0 points. Then the total knowledge score was calculated. The maximum total knowledge score was 46 points. The higher the total score is, the better the knowledge of cervical cancer prevention and screening of women in the study is.

- The participants with knowledge scores $\geq 70\%$ of the total score (≥ 33 points) were considered to have satisfactory knowledge⁵.

- The participants with knowledge scores $< 70\%$ of the total score (< 33 points) were considered to have unsatisfactory knowledge⁵.

Data collection and processing: Data was collected by using a self-completed questionnaire. Data were coded and analyzed using SPSS 20.0 software. The data were presented as numbers and percentages (%), Chi squared, OR odds ratio and 95% confidence interval to understand the relationship between factors affecting knowledge of cervical cancer prevention and screening of women attending Thai Binh

Hospital of Obstetrics and Gynecology, the difference is statistically significant with $p < 0.05$.

Research Ethics: The research had the consent of the participants and was approved by the Ethics Committee of Nam Dinh University of Nursing under Certificate No. 887/GCN-HDDD dated April 18 and permitted for data collection by Thai Binh Hospital of Obstetrics and Gynecology.

All the information given by the respondents was used for research purpose only. All information about the participants would be kept confidential and not be disclosed to anyone who had no duty of taking care of them.

RESULTS

Table 1. General information of the participants (n = 400)

Characteristics	Classify	Frequency (n)	Percentage (%)
Age	21 - 29	76	19.0
	30 - 50	279	69.8
	51 - 65	45	11.3
Ethnicity	Kinh	397	99.3
Living area	Rural area	300	75.0
Occupation	Farmer	67	16.8
	Other	333	83.2
Level of education	Secondary school	159	39.8
	High school	163	40.8
	Other	78	19.5
Marital status	Living with husband	372	93.0
	Other	28	7.0
Average personal income	$< 5,000,000$ VND	83	20.8
	$\geq 5,000,000$ VND	317	79.3
Family history of cervical cancer	Have	49	12.2
	Do not have	351	87.8

The majority of the participants were aged 30-50 years (69.8%) and belonged to the Kinh ethnicity (99.3%). The percentage of women living in rural areas accounts for 75%. Women with secondary school and high school education accounted for the highest percentage, 40.8% and 39.8% respectively. Most of the participants were living with their husbands (93%), and had average monthly income > 5,000,000 VND, accounting for 79.3%. The proportion of the women with a family history of cervical cancer was 12.2%.

Table 2. Knowledge of cervical cancer prevention

Characteristic		Frequency (n)	Percentage (%)
Cervical cancer is preventable (n = 400)	Yes	339	84.8
	No	61	15.3
Preventive measures for cervical cancer (n = 339)	With HPV vaccine	313	92.3
	Safe sex	284	83.8
	Multiple sexual partners	212	62.5
	Without smoke or passive smoke	144	42.5
	Have two children	144	42.5
	Improved diet and physical activity	157	46.3
	Treatment for gynecological infections	292	86.1
	Proper genital hygiene	277	81.7
	Not using oral contraceptives for > 5 years	212	62.5
	Regular gynecological exams	234	69.0
	Do not know	02	0.6
	Other	0	0

339 participants reported that cervical cancer could be prevented, accounting for 84.8%. Some of the most commonly recommended preventive measures reported by them were HPV vaccination (92.3%), safe sexual intercourse (83.8%), and treatment of gynecological infections (86, 1%), proper genital hygiene (81.7%).

Table 3. Knowledge of cervical cancer prophylactic vaccines

Characteristic		Frequency (n)	Percentage (%)
Know about HPV vaccine to prevent cervical cancer (n = 400)	Yes	318	79.5
	No	82	20.5
Participants recommended for HPV vaccination (n = 318)	Women before having sex for the first time	176	55.3
	Women before marriage	79	24.8
	Women after marriage	44	13.8
	Premenopausal women	ten	3.1
	Women with symptoms of discomfort in the genital area	08	2.5
	Do not know/do not remember	01	0.3
What age should you start getting vaccinated against cervical cancer? (n = 318)	Under 9 years old	30	7.5
	9-26 years old	193	48.3
	Over 26 years old	72	18.0
	Do not know	23	5.8

318 out of the 400 participants knew about the HPV vaccine to prevent cervical cancer (79.5%). Of these 318 women, 55.3% knew that the recommended target group for HPV vaccination was women before having sex for the first time, and 48.3% knew the age at which they should start getting vaccinated against cervical cancer was 9-26 years old.

Table 4. Knowledge of cervical cancer screening

Knowledge		Frequency (n)	Percentage (%)
Know about cervical cancer screening (n = 400)	Yes	372	93.0
	No	28	7.0
Benefits of cervical cancer screening (n = 372)	Early detection of cervical cancer	360	96.8
	Timely treatment	153	41.1
	Do not know	04	1.08

Knowledge		Frequency (n)	Percentage (%)
Screening methods (n = 372)	Observe cervix	283	76.1
	Cervical cell test	343	92.2
	HPV DNA test	217	58.3
Places of screening (n = 372)	Commune/ward health station	102	27.4
	District/city medical center	223	59.9
	District/Provincial/ National Hospitals	324	87.1
	Reproductive health care center	254	68.3
	Private medical facility	141	37.9
	Other	01	0.3
Age should be screened after having sex (n = 372)	Under 21 years old	116	31.2
	≥ 21 years old	215	57.8
	Do not know	41	11.0
	Other	0	0
Examination time of periodic screening (n = 372)	Under 2 years	206	55.4
	2-3 years	90	24.2
	From 3 years or more	60	16.1
	Do not know	16	4.3

372 participants heard/knew about cervical cancer screening (93.0%), among whom, 96.8% knew that screening was for early detection of cervical cancer and 41.1% knew that it was for timely treatment. The rate of participants knowing about cervical cell testing screening method accounted for the highest with 92.2%. The most cervical cancer screening places were reported including district/provincial/ national hospitals (87.1%) and reproductive health care centers (68.3%), only 27.4% of respondents presented that cervical cancer screening could be performed at the commune/ward health station. There were 57.8% of respondents knowing the age of having screening after having sex was ≥ 21 years old and 24.2% of respondents knew that the time for regular screening was 2-3 years.

Table 5. Relationship between age, ethnicity, living area, occupation and knowledge of cervical cancer prevention and screening

Characteristic		Knowledge		OR (95%CI)	p
		Satisfactory n (%)	Unsatisfactory n (%)		
Age	< 30	18 (23.7)	58 (76.3)	0.42 (0.24 - 0.75)	0.003
	≥ 30	137 (42.3)	187 (57.7)		
Ethnicity	Kinh	154 (38.8)	243 (61.2)	1.27 (0.11 - 14.09)	0.847
	Other	01 (33.3)	02 (66.7)		
Living area	Urban area	36 (36.0)	64 (64.0)	0.86 (0.54 - 1.37)	0.515
	Rural area	119 (39.7)	181 (60.3)		
Job	Farmer	13 (19.4)	54 (80.6)	0.32 (0.17 - 0.62)	0.000
	Other	142 (42.6)	191 (57.4)		

Women < 30 years old had a lower satisfactory knowledge rate than women ≥ 30 years old (OR = 0.42; 95%CI: 0.24 - 0.75). This difference is statistically significant with p = 0.003. The participants being farmers had a lower satisfactory knowledge rate than women who worked in other occupations (workers, housewives, public employees) (OR = 0.32; 95%CI: 0.17- 0.62). This difference is statistically significant with p < 0.01.

Table 6. Relationship between education level, marital status, income, Family history and knowledge of cervical cancer prevention and screening

Characteristic		Knowledge		OR (95%CI)	p
		Satisfactory n (%)	Unsatisfactory n (%)		
Educational level	≤ Secondary school	46 (23.2)	152 (76.8)	0.26 (0.17 - 0.39)	0.000
	≥ High school	109 (54.0)	93 (46.0)		
Marital status	Living with husband	149 (40.1)	223 (59.9)	2.45 (0.97 - 6.19)	0.051
	Other	06 (21.4)	22 (78.6)		
Income	< 5,000,000	28 (33.7)	55 (66.3)	0.76 (0.46 - 1.27)	0.292
	≥ 5,000,000	127 (40.1)	190 (59.9)		
Family history of cervical cancer	Have	19 (38.8)	30 (61.2)	1.00 (0.54 - 1.85)	0.997
	No have	136 (38.7)	215 (61.3)		

Women with an educational level of secondary school or under had a satisfactory knowledge rate lower than women with an education level of high school and above (OR = 0.26; 95%CI: 0.17 - 0.39). This difference is statistically significant with p < 0.01.

DISCUSSION

General information of the participants: In the study, the age group of 30 – 50 years accounted for the highest proportion with 69.8%, and the percentage of women under 30 years old accounted for 19%. This result is similar to the research by Nguyen Thi Hong Hanh⁵ and Vu Thi Minh Thi⁷ which demonstrated that the majority of people coming for gynecological examination were women of reproductive age, who were susceptible to cervical cancer and at the priority age for cervical cancer screening³. The participants were mostly of Kinh ethnicity (99.3%) and lived mainly in rural areas (75%). This result is similar to the research by Nguyen Thi Hong Hanh⁵. It is consistent with the population structure of Thai Binh province.

The proportion of the participants being farmers was 16.8%. This result is different from the research by Vu Thi Minh Thi⁷ and Pham Thi Thu⁸ which indicated that the proportion of women as farmers accounted for the highest proportion. This difference may be due to the different location and time of conducting the research. The participants with primary school and high school degrees accounted for the highest percentage, 40.8%, and 39.8% respectively. This result is similar to the study by Pham Thi Thu⁸, but different from the one by Nguyen Thi Hong Hanh⁵ which reported that women with the majority of education levels from intermediate level and above accounted for 37.2%.

Most participants were living with their husbands (93%) and had an average monthly income of > 5,000,000 VND, accounting for 79.3%. This result is similar to the study by Pham Thi Thu⁸. According to Thai Binh Department of Statistics, the average income per capita in 2022 was estimated to

reach 56.4 million VND⁹. Thus, it may be seen that the majority of participants had income levels above the average level of the province. The study results demonstrated that most of the participants had no family history of cervical cancer (87.8%). This result is similar to the study by Nguyen Thi Hong Hanh⁵.

Knowledge of cervical cancer prevention: The proportion of the participants who believed that cervical cancer could be prevented was 84.8%, higher than the research by Nguyen Thi Hong Hanh⁵ (70.5%), but lower than the one by Pham Thi Thu⁸ (91.7%). Some of the most common preventive measures reported by respondents were HPV vaccination (92.3%), safe sexual intercourse (83.8%), treatment of gynecological infections (86.1%), and proper genital hygiene (81.7%). This result is higher than the study by Nguyen Thi Hong Hanh⁵ with vaccination (50.7%), gynecological examination, periodic screening (45.7%) and treatment of gynecological infections (40.5%). Research by Pham Thi Thu⁸ reported that 58.3% of the participants knew that they should have regular gynecological examinations to detect cervical cancer early; 81.5% knew how to properly clean the genitals. Research by Tadesse, A.¹⁰ indicated that the measures were: avoiding multiple sexual partners (53.1%), avoiding early sex (33.3%), quitting smoking (14.1%), and vaccinating HPV (36.3%), cervical cancer screening (45.9%). This may be the result of communication programs and periodic gynecological examination programs of the Provincial Reproductive Health Care Center, district medical centers. The effective early detection screening program for cervical cancer of the Ministry of Health implemented in the area.

The majority of respondents knew about the HPV vaccine to prevent cervical cancer (79.5%), higher than the research by Nguyen Thi Hong Hanh ⁵ (55.3%), Pham Thi Thu ⁸ (57.5%), Nguyen Van Thanh ¹¹ (63.7%). Research by Vu Thi Minh Thi ⁷ reported that the rate of women who were aware that vaccination could prevent cervical cancer was 80.5%. This study demonstrated that among the respondents who knew about the vaccine, 55.3% knew that the recommended target group for HPV vaccination was women before having sex for the first time, and 48.3% knew that the age at which they should be vaccinated against cervical cancer was at the age of 9-26. This result is higher than the research by Nguyen Thi Hong Hanh ⁵, Vu Thi Minh Thi ⁷, and Pham Thi Thu ⁸. This result indicated that knowledge of the cervical cancer vaccine among participants was still limited. Therefore, it is necessary to further strengthen communication activities for women about cervical cancer prevention vaccines such as who need to be vaccinated, vaccination schedules, locations to get vaccinated, vaccination costs.

Knowledge of cervical cancer screening: Most of the participants heard/knew about cervical cancer screening (93.0%). This result is higher than the research by Nguyen Thi Hong Hanh ⁵ (57.0%), Shrestha, J. ¹² (42.9%). Cervical cancer screening is an effective measure in the prevention and early detection of cervical cancer. When being asked about this issue, most participants knew the benefits of cervical cancer screening. Among them, 96.8% knew that screening was for early detection of cervical cancer and 41.1% knew that it was for timely treatment. This result is higher than the result of Nguyen Thi Hong Hanh ⁵, with the rates of 47.2% and 36.7% respectively. The

research by Pham Thi Thu ⁸ presented that most of the interviewees knew the benefits of cervical cancer screening. 94.3% of them believed that screening would help detect cervical cancer and over 60% of them knew that it would detect inflammation/infection/disease in the cervix (cervix), vagina and help treat the disease early.

The proportion of the participants who knew about the screening method by cervical cytology test was the highest at 92.2%, then observing cervical cells with the naked eye after applying acetic acid (76.1%), and HPV DNA test (58.3%). This result is higher than other studies. According to research by Pham Thi Thu ⁸, the screening methods for cervical cancer mentioned by the participants were cervical cell testing and cervical screening (28.3% and 7.8% respectively). Research by Nguyen Thi Hong Hanh ⁵ demonstrated that the screening method of cervical cell testing accounted for only 32.0%. This may be explained by the difference in the time of conducting the research. This study was conducted in 2023, more than 5 - 8 years after previous research, therefore, the participants' awareness has been increased to communication activities on cervical cancer prevention that have been implemented recently.

The places of cervical cancer screening that the participants reported district/provincial/national hospitals (87.1%) and reproductive health care centers (68.3%), only 27.4% of them believed that cervical cancer screening could be done at the commune/ward health station. This result is similar to the study by Pham Thi Thu ⁸.

The results indicated that 57.8% of the participants knew that the age for screening after having sex was ≥ 21 years old and 24.2% of them knew that the time for

regular screening was 2-3 years. This result is higher than the research by Nguyen Thi Hong Hanh⁵ and Vu Thi Minh Thi⁷. Cervical cancer can occur in anyone who has had sex, because their risk of HPV infection is higher than in people who have not had sex. In 2019, the Ministry of Health also issued a guidance document regulating the age at which cervical cancer screening should be performed. This is a useful document for health education communication, thereby better disease prevention.

The factors related to knowledge of cervical cancer prevention and screening:

The results indicated that there was a relationship between age and knowledge of cervical cancer prevention and screening among young people. Research results by Shrestha, J.¹² also demonstrated that age was related to knowledge of cervical cancer screening ($p = 0.013$). The results are similar to Pham Thi Thu's⁸ study which reported that the group of women ≤ 49 years old had good knowledge of the causes/risk factors of cervical cancer (OR = 2.01; 95%CI: 1, 01 - 4.01), knowing that regular gynecological examinations can reduce the risk of cervical cancer (OR = 1.59; 95%CI: 1.02 - 2.47), knew who needed HPV vaccination (OR = 2.02, 95% CI: 1.10 - 3.70). Therefore, the age group 49 years old and younger is the productive age group, so they have more opportunities to access information related to cervical cancer than the group outside the productive age. Simultaneously, this is also the age group that many programs and projects focus on, therefore, women in this age group have better knowledge.

The participants as farmers had a satisfactory knowledge rate lower than women who worked in other occupations (OR = 0.32; 95%CI: 0.17 - 0.62), this

difference is statistically significant. with $p = 0.000$. Research by Vu Thi Minh Thi⁷ indicated that the average score of general knowledge of cervical cancer prevention among women as farmers was the lowest (9.6 ± 5.0), and the highest was among women as public employees. (14.9 ± 7.4), the difference is statistically significant ($p < 0.05$). The result demonstrated that due to working environment factors, public employees had more opportunities to access information about diseases easily and were exposed more to media, and the majority of them had higher educational levels so they would have more knowledge about cervical cancer prevention.

The results also presented that the women with an education level \leq secondary school had a satisfactory knowledge rate lower than the women with an education level \geq high school (OR = 0.26; 95% CI: 0.17 - 0.39). This difference is statistically significant with $p = 0.000$. This result is similar to the result of the study by Nguyen Thi Hong Hanh⁵ which reported that women with higher qualifications had better knowledge than women with lower qualifications, this difference is statistically significant ($p < 0.05$). This is completely reasonable because the participants with high educational levels will have the opportunity to update their knowledge in many ways and through many better information sources and will have an easier time remembering information than women with a lower educational level. This result indicates that there is a need for a simple, easy-to-understand, and vivid way to communicate health education about cervical cancer prevention and screening (using images, leaflets, etc.) so that women with low qualifications can learn information more easily.

This is a descriptive cross-sectional study, therefore, it may only stop at the descriptive scope, which partly affects the research results on assessing related factors. In addition, due to the limitation of resources, the selection of research areas with purpose, and the small sample size, the representativeness of the study somewhat was restricted.

CONCLUSION

Satisfactory knowledge of cervical cancer prevention and screening was 38.8%. Knowledge of cervical cancer prevention and screening was related to age, occupation, and educational levels. The women under 30 years old, working as farmers, with educational levels of secondary school or under had satisfactory knowledge of cervical cancer prevention and screening lower than women in the other groups ($p < 0.05$).

RECOMMENDATIONS

It is necessary to strengthen health education communication for women at the hospital by providing more information sheets (posters, leaflets) about cervical cancer, vaccination and screening so that women attending to the hospital while they get the healthcare service at the hospital.

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