

# Awareness survey of teachers after the introduction of the cervical cancer vaccine onto the market

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## Abstract

About 1 year has passed since the introduction of the human papillomavirus vaccine (HPV) onto the market. We gave a lecture on cervical cancer and the HPV vaccine to in-service teachers, and performed a questionnaire survey to evaluate changes in their awareness.

The subjects consisted of school nurse teachers providing sex education at school; 72% of them had undergone cervical cancer screening within 2 years, showing a high awareness of this cancer. Before this study, 85% of female teachers knew that uterine cancer is classified into cervical and endometrial cancers, whereas none of male teachers had this knowledge. On the other hand, the detailed knowledge of the cause of and preventive measures against cervical cancer was inadequate. Therefore, lectures such as the present one may markedly contribute to teachers' acquisition of accurate knowledge, spread of the knowledge to students, and education regarding cervical cancer prevention.

In the future, we will perform further studies, supply accurate information to teachers and students/pupils, and provide sex and preventive education as part of psychoeducation to accumulate further information, spread preventive HPV vaccines that more readily produce effects in terms of health economics, prevent cervical cancer, and reduce unwanted pregnancies, widespread Chlamydia infection, and increasing HIV infection.

**Key word:** sexually transmitted disease (STD), preventive HPV vaccine, structured group encounter (SGE), sex education

## I. Introduction

Inaccurate knowledge due to commercialism is widespread among pupils/students, propagated by the mass media and Internet. To deal with this situation, we have provided sex education as educational counselors mainly to clarify the present status of the places of education, and disseminated accurate knowledge based on clinical practice as female medical specialists. Sex education was provided as part of psychoeducation in cooperation with the board of education, and the imparted knowledge was fixed using a structured group encounter (SGE)<sup>1)</sup>. Accurate knowledge about sex may reduce not only unwanted pregnancies but also victims of violence and patients with sexually transmitted infections. In addition, education providing accurate knowledge improves communica-

tion skills, promotes consideration for others, and reduces the risk of becoming victimizers who unconsciously use violence such as domestic or dating violence.

We previously gave an educational lecture on HPV and its vaccine, and reported the results of an awareness survey in school nurse teachers of Tokushima Prefecture<sup>2)</sup>. In 2009, we performed a similar survey in the third-term training course of the teachers' license renewal program, and reported the absence of differences in in-service teachers' awareness between Tokushima Prefecture and Hokkaido<sup>3)</sup>. About 1 year has passed since the introduction of the HPV vaccine onto the market, and this vaccine has passed the stage of notification and entered that of evaluation regarding its spread. On being given an opportunity by the Tokushima Prefectural Board of Education to provide sex education to school nurse teachers,

we performed a questionnaire survey again, and evaluated the spread of the HPV vaccine and provision of information in the future.

## II. Subjects and Methods

On August 25, 2010, we gave a lecture entitled “sex education as viewed by female medical specialists” in the “Training course for teachers engaged in sex education” sponsored by the Tokushima Prefectural Educational Board. As an item in the lecture, we talked about “HPV and cervical cancer and preventive vaccine”. The form of the lecture was basically SGE. SGE is an approach in which participants openly express their feelings and develop mutual understanding. This encounter deepens participants’ awareness of themselves and others, and promotes the pleasure of living with others and the courage to advance with reassurance. In SGE, participants as a group perform a task given by the leader, and frankly talk about their feelings during the task, and the subsequent sharing of thoughts gradually deepens the experience through “exchange of feelings”. A goal of SGE in our lecture was to understand the inaccuracy of widespread knowledge concerning sex. We realized the merits and demerits of collective intelligence and the need for the provision of accurate knowledge by specialists. An awareness questionnaire survey on HPV was also performed in 51 teachers as participants, mainly school nurse teachers, engaged in sex education before and after the lecture, and changes in the degree of their understanding of disease and awareness of the preventive vaccine were evaluated.

The awareness questionnaire was completed mainly using the selection method and partly using the free description method. The survey items of the questionnaire before the lecture were the status of the awareness of the disease “cervical cancer”, previous participation in cervical cancer screening, and desire to be vaccinated. The items of the questionnaire after the lecture were basically similar to those of that before the lecture. However, since the initiation of the public subsidy program had already been announced, considering its contents, more detailed items concerning the HPV vaccine were surveyed, including the appropriate vaccination age, whether participants desired their daughters to be vaccinated, and self-payment for vaccination. Concerning the item of self-payment, a standard cost was established based on the

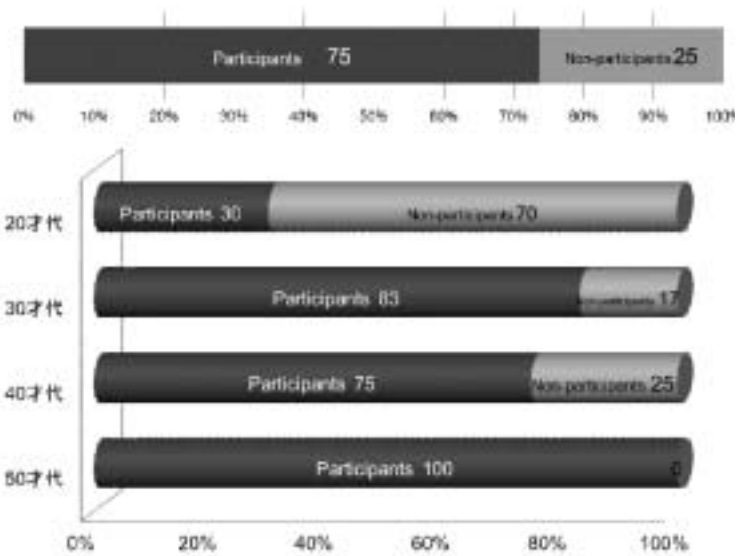


Fig. 1 Cervical cancer screening participation rate

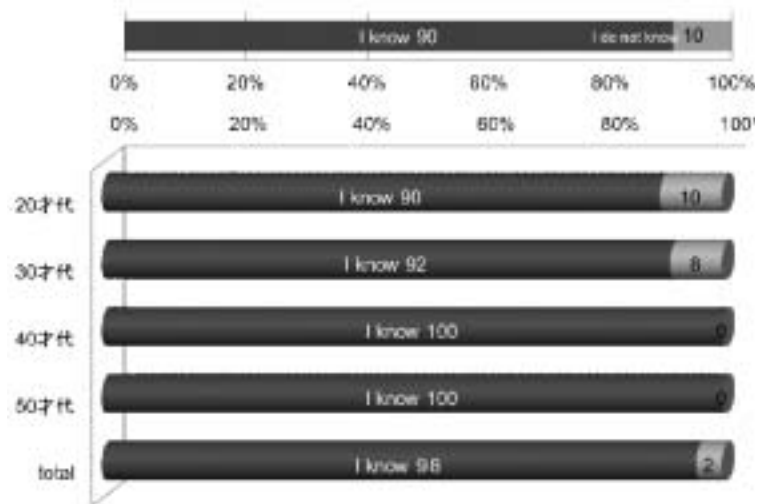


Fig. 2 Changes in the percentage of participants who wish to be vaccinated

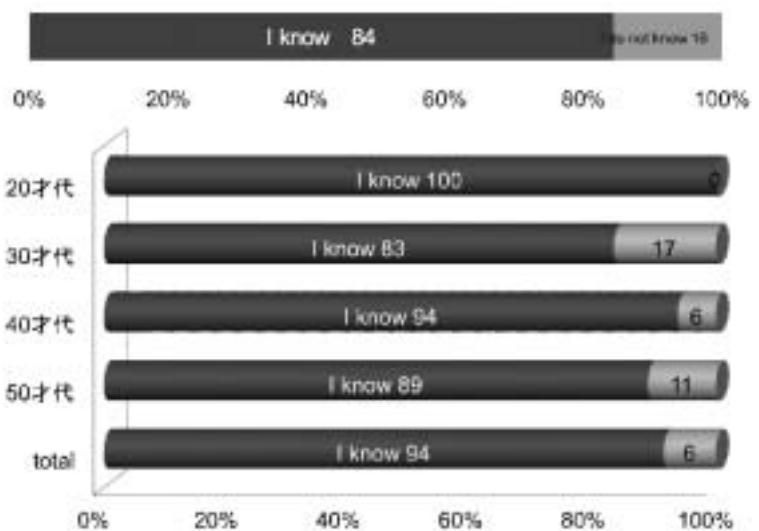
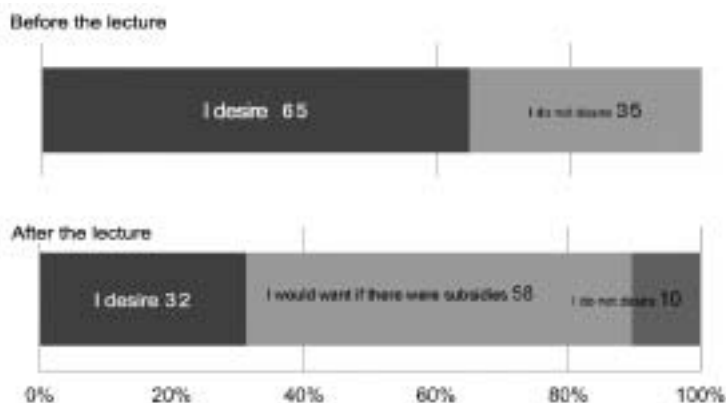
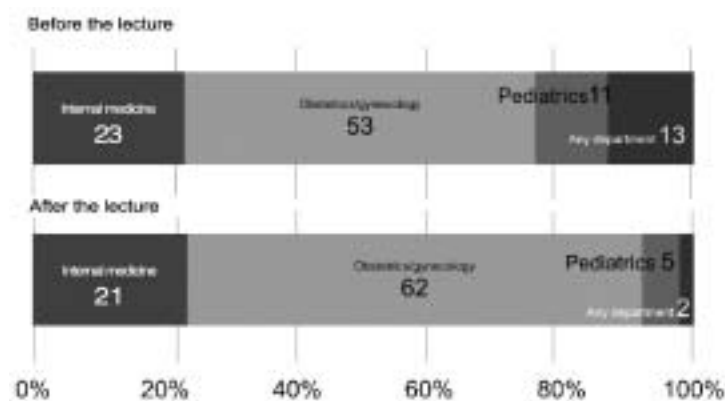


Fig. 3 Awareness of the cervical cancer vaccine



**Fig. 4 Changes in the percentage of participants who wish to be vaccinated**



**Fig. 5 Changes in the desirable medical department for vaccination**

costs/statements in other countries<sup>4,5,6</sup>.

### III. Results

All 51 participants (4 males and 47 females) in the training course answered the questionnaire. Of the 47 females, 10 were in their 20s, 12 in their 30s, 16 in their 40s, and 9 in their 50s. Of the 4 males, 2 were in their 20s, and 2 were in their 30s.

Although 78% of all teachers had the basic knowledge that uterine cancer is classified into cervical and endometrial cancers, none of the males knew this. Of the females, 85% accurately knew of this classification, although the percentage of young females who knew of it was slightly low. As shown in Fig. 1, the cervical cancer screening participation rate within 2 years was slightly low in young teachers, but was 75% in all female teachers. As shown in Fig. 2, 90% of all teachers knew of the increase in the incidence of cervical cancer in young females aged 20-39 years while 88% knew that the cause of cervical cancer is continuous HPV infection. As shown in Fig.

3, 84% of the teachers knew that preventive HIV vaccine is commercially available; this high percentage was partly because a public subsidy program had already been initiated.

Before the lecture, 65% of all teachers desired to be vaccinated (or wanted their daughters to be vaccinated) (Fig. 4).

The department in which they desired to be vaccinated (or wanted their daughters to be vaccinated) was the Department of Internal Medicine in 23%, Department of Obstetrics/Gynecology in 53%, and Department of Pediatrics in 11% (Fig. 5).

Almost all teachers desired to undergo cervical cancer screening (or wanted their daughters to undergo this screening).

Thirty-two percent of the teachers answered that they would desire to be vaccinated or want their daughters to be vaccinated if self-payment was set at about 50,000 yen as the estimated general expense, while 58% answered that they would desire so if there were public subsidies. Thus, a total of 90% of the teachers desired vaccination.

The appropriate age for HPV vaccination was considered to be 12-14 years by 52%, 15-19 years by 26%, and 9-11 years by 17%.

The preferred department for vaccination was the Department of Internal Medicine in 21%, Department of Obstetrics/Gynecology in 62, and Department of Pediatrics in 5% (Fig. 5).

### IV. Discussion

About 1 year has passed since the introduction of the HPV vaccine onto the market, and, therefore, we performed a questionnaire-based awareness survey involving 51 in-service teachers who received our lecture on cervical cancer / HPV vaccine both before and after the lecture, and evaluated their understanding of the disease and awareness of the preventive HPV vaccine. This lecture was performed as part of sex education, and included not only a talk on “human papillomavirus and cervical cancer and preventive vaccination”, but also a talk on related contents such as sexually transmitted infections and contraception.

Since the participants were teachers who provide sex education, they had adequate background information on diseases, and had knowledge of the pathological condition of cervical cancer itself even before the lecture. Although the cervical cancer screening participation rate in Japan at present is 20%, that within 2 years in the teachers in this survey,

excluding those not requiring this screening for reasons such as hysterectomy, was 75%. This suggests that school nurse teachers pay attention to their own health and collect information, giving consideration to pupils/students' health. However, more detailed knowledge such as that regarding the cause and preventive methods was inadequate. Lectures such as this one may markedly contribute to the understanding of accurate knowledge, spread of the knowledge to pupils/students, and education for prevention. In addition, 85% of the females knew that uterine cancer is classified into cervical and endometrial cancers, whereas none of the males knew this before the lecture. Although this difference is natural because cervical cancer is specific to females, it is necessary not only to provide education for students, but also to improve the poor awareness rate of the life-threatening diseases/infections inducing this disease in males as partners of females in life.

Based on opinions observed in free descriptions, many participants vaguely considered that they are not subjects for vaccination. In addition, there were opinions suggesting a deep-rooted aversion to the preventive HPV vaccine. The most frequent opinion was worry about the adverse effects of the HPV vaccine. There was not only vague anxiety, but also anxiety due to inaccurate information such as "There are death cases due to preventive HPV vaccination." spread via the Internet. At present, in 2010, there are no contraception vaccines, and vaccines are designed under risk management. In addition, side effects are known to develop in about 1/100,000 vaccinations. Therefore, adequate preparation is necessary so that accurate information can be provided when people with such anxiety present to medical workers.

Our previous questionnaire survey performed immediately after the introduction of the HPV vaccine onto the market revealed negligible differences in teachers' awareness between Tokushima Prefecture and Hokkaido, suggesting no differences in information. The most important problem revealed by this survey was the inadequacy of accurate information. One year after the introduction of the HPV vaccine onto the market, the rate of awareness of this vaccine itself increased. However, the provision of accurate information still remains inadequate. While the awareness rate of this vaccine increased, medically inaccurate information including that on ethical problems began circulating.

The questionnaire survey performed after the present lecture showed a high level of understanding of cervical cancer and a high percentage of participants who desired to undergo cervical cancer screening. These results suggest that the goal of this lecture was achieved. In addition, the percentage of participants who desired to be vaccinated increased compared with the survey performed before the lecture. Therefore, in the

future, frequent exchanges of information between medical and school workers, and not one-way provision of information, may be necessary. After such efforts, sex education should aim at not only providing knowledge of sexually transmitted diseases (STD), but also being part of psychoeducation to improve communication skills using methods represented by SGE as counseling for students' development. Thus, by selecting methods, education with a consideration of the development stage can be provided to not only university/high school students, but also primary/junior high school students. With such education, efforts toward the prevention of cervical cancer, consisting of preventive vaccination and screening, may progress.

In Japan, the annual number of new patients with cervical cancer including intraepithelial carcinoma is about 15,000, and the annual number of deaths due to this cancer is about 3,500<sup>7)</sup>. The peak age for the development of this cancer is 20-39 years. In recent years, the incidence in this young group has been increasing<sup>7)</sup>, which is a serious problem in this generation who have reached marriageable and childbearing age. In various countries, the preventive HPV vaccine has already been widely used. The HPV vaccine is used for all females aged  $\geq 10$  years, but is considered to be the most effective in girls before their first sexual encounter. In major advanced countries, HPV vaccination is recommended in girls centering on about 12 years of age, and public subsidies are also provided<sup>8)</sup>. In the present questionnaire, many participants considered the appropriate HPV vaccination age to be 9-19 years, and most participants also wished their daughters to be vaccinated. Due to the influences of postwar chastity education, education has been provided assuming that pupils and students are not sexually active. However, for in-service teachers, both unwanted pregnancies and sexually transmitted infections are major, urgent problems. This appropriate vaccination age highlighted by the teachers may be the age they considered to be before the start of sexual activity, and this age is also medically appropriate.

However, at present, economic problems associated with vaccination cannot be avoided in many countries. The "Statement on the Spread of Human Papillomavirus (HPV) Vaccination" and "Joint Statement on the Approval of the HPV Vaccine for the Prevention of Cervical Cancer", which were issued on October 16, 2009 at the time of the approval of the HPV vaccine in Japan, show that public subsidies are indispensable for the widespread use of preventive vaccination.

In Tokushima Prefecture at present, as a result of the efforts of the governor and Department of Obstetrics and Gynecology, Tokushima University, the prefecture and municipalities cooperate in subsidizing all costs of HPV

vaccination, although the age of eligible persons is limited. Many local autonomous bodies throughout Japan are also showing changes toward an increase in subsidies.

In the future, we will perform further studies, supply accurate information to teachers and students/pupils, and provide sex and preventive education as part of psychoeducation to accumulate further information, spread preventive HPV vaccines that more readily produce effects in terms of health economics, prevent cervical cancer, and reduce unwanted pregnancies, widespread Chlamydia infection, and increasing HIV infection.

Male teachers often described their reluctance to encourage their daughters to visit a gynecological hospital. The prevention of cervical cancer is not completed by HPV vaccination alone; subsequent course observation is also important. Considering this, obstetricians/gynecologists should play a central role in providing accurate knowledge for the spread of the preventive HPV vaccine and vaccination in the future.

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