

Preparedness of Young Girls for Prevention of Cervical Cancer and Strategy to introduce the HPV Vaccine

Dharitri Swain, Swayam Prangya Parida¹

Department of Obstetrics and Gynecological Nursing, College of Nursing, ¹Department of Community Medicine and Family Medicine, AIIMS, Bhubaneswar, Odisha, India

Abstract

Objective: Cervical cancer incidence and mortality rates remain high in developing country due to low levels of awareness on preventive measures. The main study objective was to sensitize the young girls on the prevention of cervical cancer. **Study Design:** Quasi-experimental pretest and posttest design was used. **Methods:** A total of 240 young girls enrolled and 60 were selected randomly for the sensitization program. The preparedness for prevention of cervical cancer was assessed through structured preparedness criteria and perception toward vaccination was ascertained through rating scale. **Results:** Changes in knowledge level and intention to be vaccinated and for developing positive attitude to be screened in future were assessed using paired *t*-tests and found to be statistically significant. There is been an improvement in knowledge score noticed from pretest to posttest. The greatest improvements were observed in responses to questions on knowledge on symptoms (60%) and prevention (88%) that is maximum responded vaginal bleeding is the most common symptoms of cervical cancer and avoiding early sexual intercourse is the preventive measures of cancer cervix. Out of the 60 girls, 52 (86%) shown their agreement for human papillomavirus (HPV) vaccination, 35 (58.33%) took the HPV vaccine as a preventive measure. **Conclusion:** Study concludes that periodical sensitization through educational intervention may act as a cascade for girls and help them to be more aware about the preventive aspects of cervical cancer.

Keywords: Cervical cancer, human papillomavirus vaccine, perception, preparedness, preventive measures, sensitization program, young girl

INTRODUCTION

Cervical cancer is a major public health problem globally, and it is the second most common cancer in women worldwide.^[1] Hence, every year more than 270,000 women die from cervical cancer, more than 85% of these deaths are in low- and middle-income countries like India. Worldwide, 15% of all cancer cases and nearly 26% of cancer cases in developing countries are attributable to infectious agents, particularly viruses like human papillomavirus (HPV).^[2] Cervical cancer is caused by sexually acquired infection with HPV.^[3] Most people are infected with HPV shortly after onset of sexual activity. The world health organization recommended that the vaccination against HPV in girls 9–13-year-old combined with regular screening in women over age 30 for precancerous lesions followed by adequate treatment is key tools to prevent the 530,000 new cervical cancer cases diagnosed every year. Survival rates for cervical cancer can be further improved by establishing effective cancer treatment programs.^[4]

According to centers for disease control and prevention, HPV vaccination is for 11- and 12-year-old girls, but it is also recommended for girls and women age 13 through 26 years of age who have not yet been vaccinated or completed the vaccine series. Therefore, from a public health perspective, the most effective population to target for HPV vaccination is young girls.^[5] The world health organization recommends that the primary target population for vaccination should be selected based on the age of initiation of sexual activity and the feasibility of reaching young adolescent girls through schools, health-care facilities, or community-based settings. The primary target population is likely to be girls within the age range of 9 or 10 years through 13 years. Based on these

Address for correspondence: Dharitri Swain, Assistant Professor, College of Nursing, AIIMS, Bhubaneswar, Odisha, India. E-mail: dhari79@yahoo.co.in

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recommendations, many countries have adopted policies that support vaccination of female young before sexual debut.^[6] It is hoped that the available HPV vaccines will markedly reduce the burden of cervical cancer and other HPV-related diseases in developing countries.^[7] Hence, our study aimed to assess the preparedness of young girls for the prevention of cervical cancer, perception toward HPV vaccination, and sensitize them accordingly for adopting the cervical cancer preventive measures.

METHODS

Quasi-experimental pretest and posttest design was used to select girls of age group of 17 years to 24 years. The study was conducted among college going girls at Bhubaneswar city in the state of Odisha and duration was 1 year. Random sampling was used to select 60 girls out of 240. Girls with 17–24 years of age and those have given a written consent been included in the study. Demographic perform structure knowledge questionnaire and checklist for assessing perception toward HPV vaccination and self-reported vaccination status was used to collect the related information and educational leaflet on HPV vaccine was distributed to the participants for their reference. Study protocols were approved by the Institutional Ethical Committee. A written permission was taken from the authority and also written consent was taken from the study participants. Precoded structure questionnaires were administered on day 1, followed by administration of sensitization program on risk factors and prophylactic measures for cervical cancer for 2 days. The sensitization program consists of three sessions (Session-1: epidemiology of cervical cancer, Session-2: cervical cancer preventive measures, and Session-3: HPV vaccine and its implication). After 1 week, posttest was conducted to evaluate the program by administering the same criteria, and at the end of the session, the leaflet for preventive vaccination was distributed among the participants.

Evaluation of sensitization program was done by comparing the pretest and posttest preparedness criteria. Prophylactic HPV vaccine was administrated for target group who were given their acceptance and willingness for vaccination. Data were analyzed using SPSS version 20, (IBM, AIIMS Bhubaneswar, Odisha, India) of the IBM Statistical Package for the Social Sciences. The total number of sample ($n = 60$) was analyzed by descriptive statistics to calculate the frequencies and paired *t*-test for comparison between pretest and posttest results.

RESULTS

The mean age of the 60 participants was 19 ± 1 years; 48.3% belonged to nuclear, 35% to joint, and only 16.7% belonged to extended family. Furthermore, 63.33% were from rural background. Most (86.67%) of girls had no family history of cervix cancer. Among those who had family history of cervix cancer, 25% participants' mothers had cervix cancer, 12.5% each participants' sisters, and aunts had cervix cancer, while

the remaining 50% had relatives with cervix cancer other than the above-mentioned ones. Personal history of reproductive tract infections reveals that majority (98.3) did not have any personal history of sign and symptoms of reproductive tract infections and only 1% had abnormal menstruation.

Assessment of level of preparedness of the young girls revealed that 65% had well oriented about cancer cervix and its prophylactic measures. Information regarding their knowledge on the disease and its vaccine were as shown in Table 1. It was noted that the highest percentage (66.67%) of the girls received information from mass media such as TV, radio, or magazines, 20% had gained knowledge from their parents, friends, and relatives, and only 13.33% gained knowledge from health personnel. Only 15% had aware about the HPV vaccine.

While 80% agreed that all young girls must be vaccinated against HPV infection, only 13.33% were open to being screened after 30 years, in spite of it being free and harmless. Two (3.33%) girls reported of having taken the HPV vaccine. Common reasons for nonacceptance of vaccine included not being sexually active (81.03%), high cost of vaccine (58.62%), unwillingness of parents (22.41%), fear of pain (17.24%), and unawareness regarding vaccine (15.51%). Perception toward HPV vaccination found that maximum girls perceived HPV vaccine may not be available in India, very expensive and should not be given if not sexually active [Table 2].

Comparison of area wise mean and standard deviation of the knowledge scores showed that in the area of risk factors, signs and symptoms, and method of early detection of cervical cancer, 12.30% increase in the mean percentage knowledge was observed with 33.05% in pretest and 45.36% in posttest. In the area of prophylactic measures for cervical cancer, the pretest mean percentage of knowledge score was 14.9% (8.95 ± 4.8). The posttest knowledge score was 21% (3.65 ± 1.06) showing the maximum increase of 6.1% in the mean percentage knowledge score of the girls. However, the result revealed that the overall percentage of posttest knowledge was more compared to the percentage of the pretest knowledge. Hence, it is observed that the awareness program

Table 1: Knowledge level of adolescent girls on cervical cancer and human papillomavirus vaccine ($n=60$)

Awareness level	<i>n</i> (%)
Cervical cancer	
Symptoms of carcinoma of the cervix	36 (60)
Risk factors of the cervix cancer	14 (23)
Preventive measures and treatment options for carcinoma of the cervix	53 (88)
HPV vaccine	
Availability of HPV vaccine	23 (43)
Meaning of HPV vaccine	33 (55)
Time and doses of giving HPV vaccine	48 (80)
Side effects of HPV vaccine	18 (30)
Efficacy of HPV vaccine	28 (47)

HPV: Human papillomavirus

Table 2: Perception toward human papillomavirus vaccine and screening for cervical cancer (n=60)

Response	n (%)
HPV vaccine may not available in India	42 (70)
HPV vaccine is very expensive	47 (78)
Vaccine should not be given if not indulged with sexual contacts	39 (65)
Vaccine should be given after marriage	28 (47)
HPV vaccine may not protect against all type of cervical cancer	31 (52)
HPV vaccine may not be effective in this age because it not like other vaccine which is mostly given before 10 years age	33 (55)
HPV vaccine may have side effects for the girls	31 (52)
Girls under 16 being offered the vaccine, but the age of consent are 16?	19 (32)
No idea that screening helps in prevention of carcinoma of the cervix	40 (67)
Screening will helpful if the women involved in sexual contact only	13 (22)

HPV: Human papillomavirus

was effective in enhancing the knowledge of girls regarding cervical cancer and its prevention.

The evaluation of sensitization program was done by comparing the mean effectiveness of the pretest and posttest scores. The cumulative frequency distribution of pretest and posttest knowledge scores are shown in the Ogive [Figure 1]. The data presented in the Ogives show significant difference between the pretest and posttest knowledge scores which indicate that there is significant increase in the knowledge of students regarding cervical cancer and its prophylaxis measures. Furthermore, agreement and vaccination status were evaluated, findings revealed that the mean posttest score was significantly higher than their mean pretest score and significant value ($P < 0.005$). Out of the 60 girls, 52 (86%) shown their agreement for human Papillomavirus (HPV) vaccination, 35 (58.33%) took the HPV vaccine as a preventive measure.

DISCUSSION

Review the literature showed that HPV vaccination acceptability is generally positive in young women.^[8,9] Our study found results consistent with the studies on school and college students that most college students knew very little about HPV, but brief HPV-focused educational interventions were found to be effective at improving HPV knowledge, at least in the short term. These studies recommend more HPV education is needed, particularly for young adults.^[10,11] A clinical trial on HPV vaccine conducted among young girls reveals that most of the girls were aware of the HPV vaccine, and many had intentions to obtain the vaccination. This study examined cognitive, agreement, and social correlates of vaccine decisions among the young girls.^[12] When comparing the social and demographic characteristics among all the young girls, the difference was small; however, in the present study, majority of girls had little knowledge and awareness of HPV vaccine across their age groups and only 20% girls did not

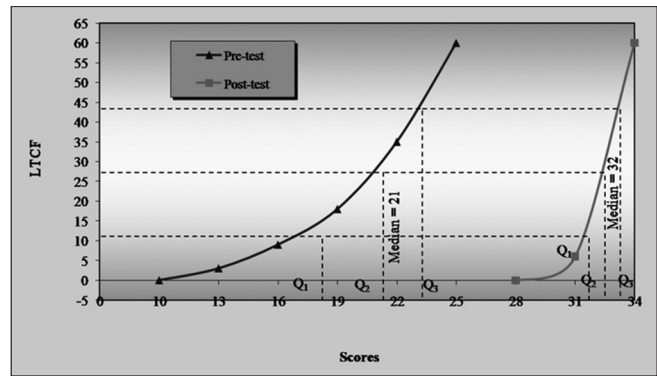


Figure 1: Less than Ogives of pretest and posttest knowledge scores

agree about the HPV vaccination, but they were willing to know more about the vaccine. This shows a positive attitude toward vaccination and is consistent with other studies that have reported a favorable attitude.^[3]

In the present study, although initially youngsters were unaware of HPV; after a sensitization program, agreement rates were high and also a statistically significant improvement found in knowledge and awareness for all HPV-related questions. Two studies have shown that vaccine uptake was positively associated with having heard about the vaccine from a health-care provider.^[11] Our findings also found a positive acceptance of HPV vaccination and majority (58.33%) of the respondent's received HPV vaccination after the recommendation from the experts (senior faculties of community medicine, gynecology, and nursing). The study emphasizes that health-care providers, obstetricians and gynecologists, and community practitioners could play an important role in affecting the young's attitudes and awareness about vaccination.^[13] The preparedness for HPV vaccination and cervical cancer of young girls in this study was less and after the sensitization program, they acquired good knowledge regarding cervical cancer and vaccination; maximum positive attitude toward vaccination was established and would recommend the vaccines for preyoung girls. The main reason given overall for not agreeing for the vaccines was more expensive, lack of information, parent consent, and lack of awareness. The urgent need was to bridge this information gap through a well-designed HPV education program and study recommends that this type of sensitization program would be done periodically among young girls who can be integrated into a national cervical cancer prevention and control program.

Limitations

The number of participants is not too large to generalize the results. Furthermore, the study participants were nursing students and most of them had basic knowledge on cervical cancer, so it was easy to make them understand about the disease process and prepared them for adopting prophylactic measures of cervical cancer.

Recommendations

The study demonstrates feasibility of an approach to motivate

girls for prevention of cervical cancer and large studies like randomized clinical studies on HPV vaccination among young girls are needed before results can be generalized in the form of program recommendations. Furthermore, the study can be conducted further among general young population for adopting prophylactic measures of cervical cancer.

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Conflicts of interest

There are no conflicts of interest.

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