

Survey on Cervical Cancer Awareness among Obstetricians and Gynecologists

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ABSTRACT

Cervical cancer is primarily caused by persistent Human papillomavirus virus (HPV) infections. The International Agency for Research on Cancer has designated 12 HPV types as carcinogenic out of the 200 identified. According to cancer research, 50% and 10%, respectively, of cases of cervical cancer are caused by HPV-16 and HPV-18. When compared to a person who is not infected, the chance of developing cancer increases by 435 times and 248 times, respectively, for each of these two HPV strains. With 569,000 new cases each year, cervical cancer ranks third among all cancers that affect women globally, behind breast and colorectal cancer. There are cases that are HPV-negative; one study found that these cases have worse disease-free survival than HPV-positive cases and are more likely to present with adenocarcinomas at an advanced stage. Both behavioral and viral risk factors for cervical cancer exist. Sexual activity and lifestyle choices are behavioral factors. Comprehensive educational efforts and skill building modules are needed of hour to keep every practicing obstetrician and gynaecologist regarding recent advances in screening and vaccination strategies for cervical cancer. Early detection and prompt treatment of preinvasive lesions help reduce the burden of this disease. Screening a woman for HPV can dramatically decrease her risk of dying from cervical cancer. New, rapid, low-cost HPV testing can allow for high-volume screening for the approximately 1.5 billion women who have never been screened. HPV screening can then be combined with high-resolution digital colposcopy. With proper screening of all patients, it is possible to achieve a decrease in mortality and morbidity due to the Ca cervix.

Key words: Cervical Cancer, Vaccination, Screening, Human Papilloma Virus, Carcinogens, Preventive Strategies, National Programmes.

INTRODUCTION

Cervical cancer is primarily caused by persistent Human papillomavirus virus (HPV) infections. The International Agency for Research on Cancer has designated 12 HPV types as carcinogenic out of the 200 identified. According to cancer research, 50% and 10%, respectively, of cases of cervical cancer are caused by HPV-16 and HPV-18. When compared to a person who is not infected, the chance of developing cancer increases by 435 times and 248 times, respectively, for each of these two HPV

strains. With 569,000 new cases each year, cervical cancer ranks third among all cancers that affect women globally, behind breast and colorectal cancer. There are cases that are HPV-negative; one study found that these cases have worse disease-free survival than HPV-positive cases and are more likely to present with adenocarcinomas at an advanced stage. Both behavioral and viral risk factors for cervical cancer exist. Sexual activity and lifestyle choices are behavioral factors. Diet has little impact on cervical cancer prevention, and it is not genetically transmitted. The earlier a person has their first sexual experience or how close it is to menarche, the higher their risk of developing cervical cancer. When compared to first sexual encounters occurring after the age of 21, having sexual relations before the age of 18 doubles the chance of acquiring cervical cancer. In comparison with one partner, the risk approximately doubles with two partners and triples with six or more partners. Age less than 18 years at full-term pregnancy and multiple pregnancies (4 vaginal births) have been associated as risk factors for HPV infection and/or cervical cancer. Smoking

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contributes to the risk of cervical cancer. Tobacco by-products destroy the DNA cells in the cervix, which may contribute to the progression of cervical cancer, potentially doubling the risk of cervical cancer occurrence when compared with non-smokers. Further, smokers may have a compromised immune system to fight against HPV infections, increasing the likelihood of progression from HPV infection to cervical malignancy. Sexually transmitted diseases such as chlamydia and genital herpes are associated with an increased risk of HPV infection. Co-infection with human immunodeficiency virus infection may weaken the immune system's ability to control HPV infection. Cervical cancer risk increases after using oral contraceptives for more than 5 years. Every 5 years of oral contraceptive use brings the risk up by 1.9 times. A 2–3-fold greater risk of cervical cancer in the future exists for women who have undergone treatment for cervical intraepithelial neoplasia.^[4]

Due to improved screening and immunization against the most cancer-causing HPV strains, cervical cancer incidence is on the decline and is a condition that is highly preventable. The approved vaccine schedule must be followed, screening procedures must be followed, and education about risk factors must be provided. These are important prevention activities.

METHODS

Observational study of a survey conducted over the period of 1 month from January 1st, 2023 to January 31st, 2023. This survey was launched on February 4th on the occasion of World Cancer Day by the Mumbai Obstetrics and Gynecological Society in association with the SAFOG Oncology Committee. Data collection was done on common practice and general awareness about cervical cancer and its screening strategies in the management of cervical cancer by gynecologists. The survey was answered online by 113 Doctors.

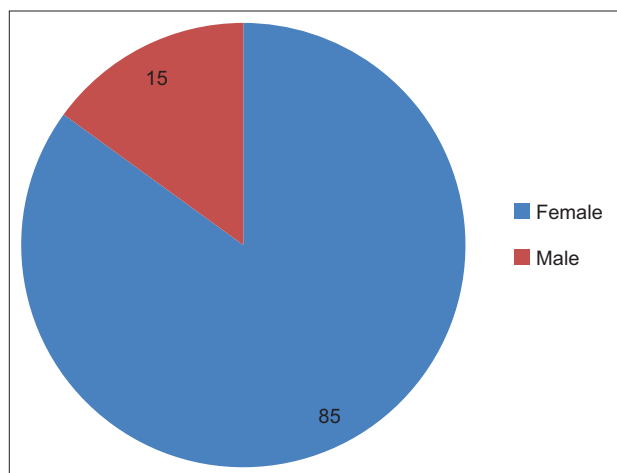


Figure 1: Gender wise distribution of Obstetricians and Gynecologist undertaking survey

Statistical Analysis

All the parameters were studied and analyzed on the basis of percentages. As this was a purely observational study, all parameters were analyzed using descriptive statistics, i.e., percentages and proportions were calculated, and no statistical test was applied.

Validation of the Questionnaire

The questionnaire was prepared in English, and its content validity was assessed by two co-investigators and then sent to Obstetricians and gynecologist via WhatsApp, Gmail, and Social media. All answers were collected, and results were prepared from the given answers.

RESULTS

A total of 113 Obstetricians and gynecologist attempted the questionnaire, and the results are as follows:

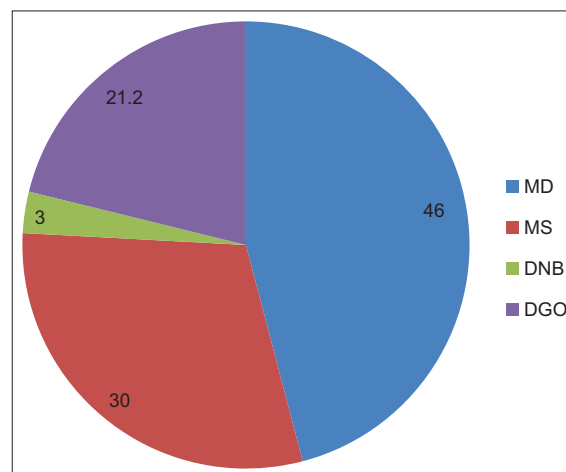


Figure 2: Qualification wise distribution of Obstetricians and Gynecologist undertaking Survey

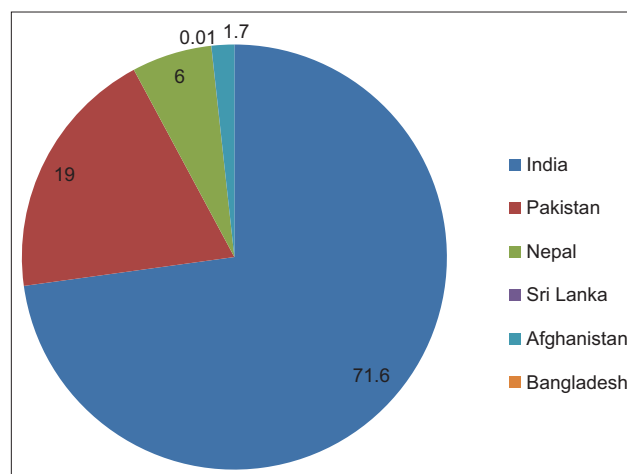


Figure 3: Name of your country

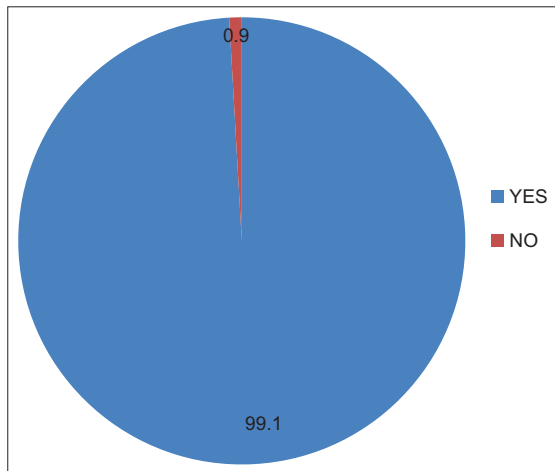


Figure 4: Females high risk for developing cervical cancer

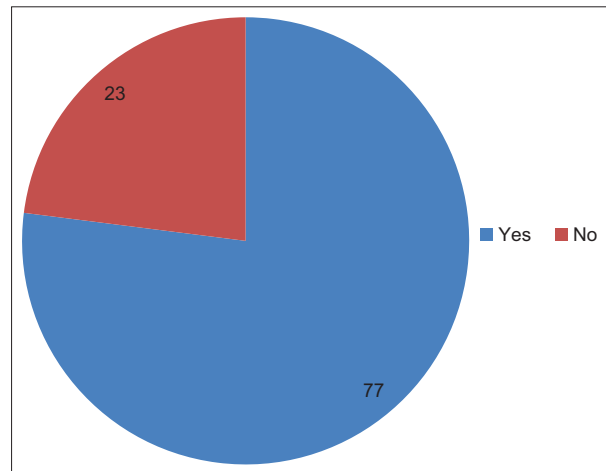


Figure 6: Reduction in Incidence and Mortality due to cervical cancer

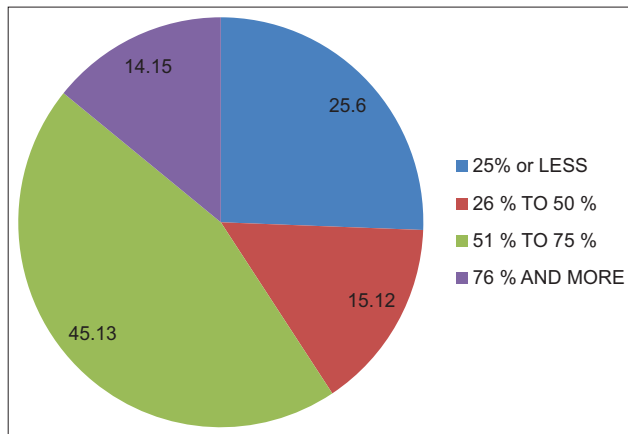


Figure 5: Chances of achieving screening rate of 70% by 2030

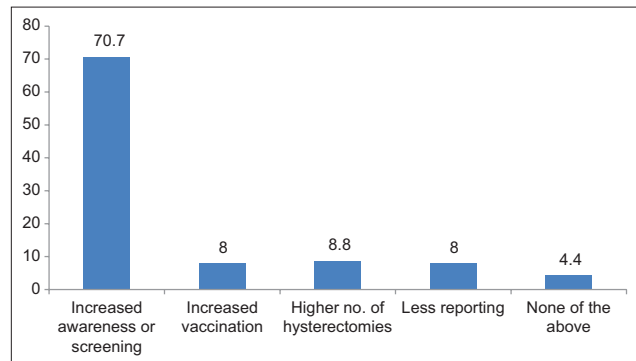


Figure 7: Cause for decline in cervical cancer

Figure 1 show out of the total 113 Obstetricians and Gynecologist taking the survey 85% (96) are female and 15% (only 17) are male.

Figure 2 shows that about 46% (52 out of 113) MD Doctors, 30% (34) MS doctors, 2.6% (only 3), and 21.2% (24) were DNB and DGO candidates, respectively.

Figure 3 shows the majority of Obstetricians and gynecologists giving the survey are from India, at around 72% (86), followed by Pakistan, at around 19% (22). The rest belong to Nepal, SriLanka, Afghanistan, and Bangladesh.

Figure 4 shows that about 99.1% (almost 111) of patients visiting an obstetrician and Gynecologist were at high risk for developing cervical cancer, and 0.9% (2) were at low risk.

Figure 5 shows out of 113 obstetricians and gynecologists, 45.13% (50) were of the opinion that the World Health Assembly (WHA) target of screening 70% of women using a high-performance test by the age of 35 and again by the age of 45 by 2030 will be achieved by around 51% to 75%. 25.6% (28) of obstetricians and gynecologists believed that target will be achieved by around 25% or even less than that. 15.1% (18) and

14.1% (17) were of the opinion that the target will be achieved by 26% to 50% and 76% and more, respectively.

The Global Burden of Disease 2019 study shows that in the SAARC region, the incidence of cervical cancer declined by 21% from 1990 to 2019. Furthermore, the mortality due to cervical cancer has been reduced by 32%. A similar reduction in incidence and mortality due to cervical cancer was noticed in practice by around 77% (87) of obstetricians and gynecologists. 23% (26) of obstetricians and gynecologists did not find changes in incidence or mortality as depicted in Figure 6.

Figure 7 shows out of 113 obstetricians and gynecologists giving the survey, the majority of them, i.e., 70.7% (80), were of the opinion that this decline in the rate of cervical cancer is due to an increase in awareness of cervical cancer among the general population and screening technologies. Whereas, 8% (9) of them believed that it was due to an increase in the number of vaccinated females. Around 8.8% (10) and 8 (9) of obstetricians and gynecologists believed that it was due to an increase in the number of hysterectomies and less reporting of incidence, respectively. 4.4% (5) of obstetricians and gynecologists stated that none of the above is causing a decline in the incidence of cervical cancer.

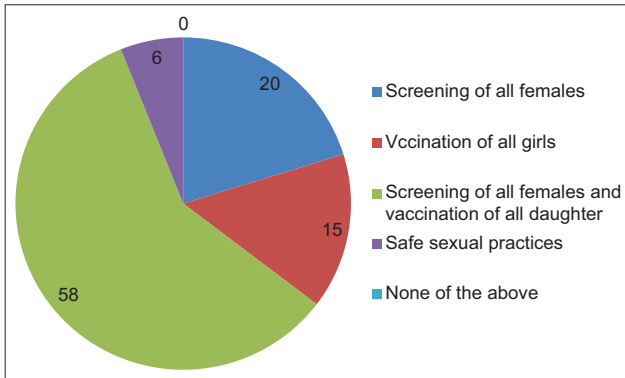


Figure 8: Important strategies to prevent cervical cancer

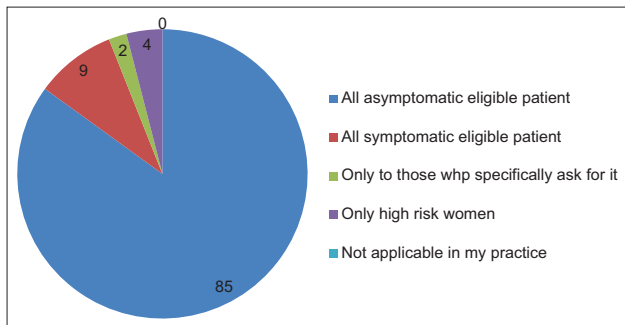


Figure 9: Cervical cancer screening in OPD

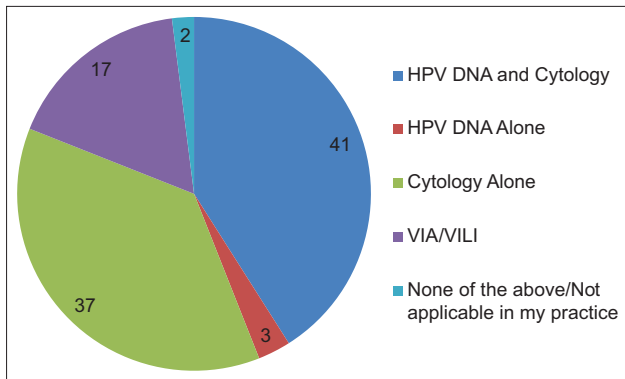


Figure 10: Cervical cancer screening test

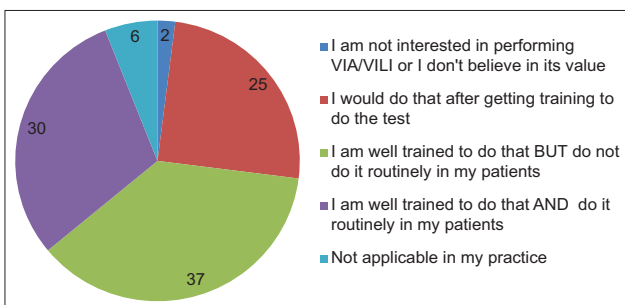


Figure 11: As a clinician how confident are you in performing VIA/VILI for your patients routinely?

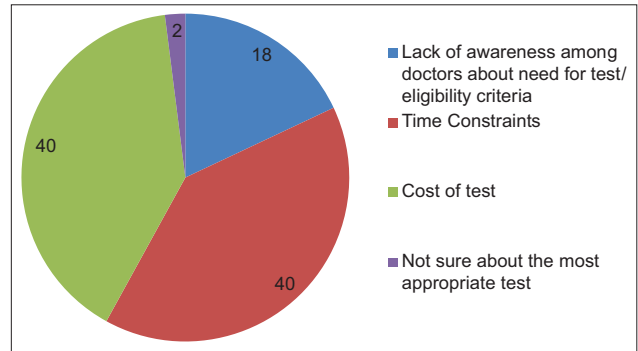


Figure 12: Most important barrier (from the Doctors' point of view) in the real-world practice in recommending cervical cancer screening test?

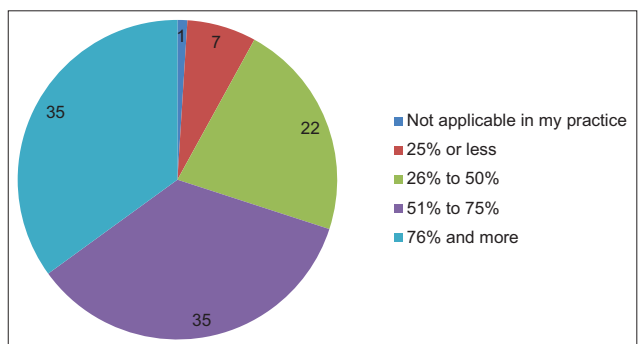


Figure 13: When the test is recommended, how receptive are your eligible patients in getting the test done

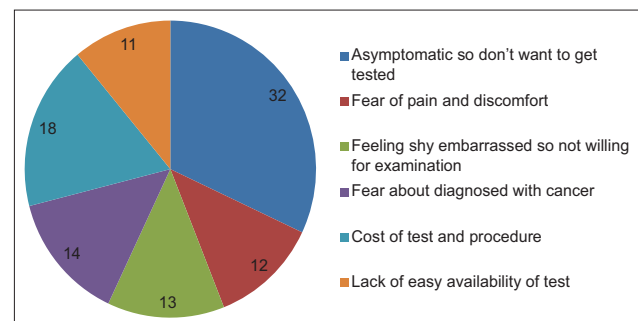


Figure 14: What is the most important barrier from patient point of view in getting the cervical cancer screening test done

Screening of all females and vaccination of girls is the best approach to preventing Cervical cancer, and 58%, i.e., of 66 obstetricians and gynecologists believed in this combined approach. Screening of all females and Vaccination of girls alone as a strategy to decrease cervical cancer is believed by around 20% (23) and 15% (17) of obstetricians and gynecologists. Safe sexual practices are also an important method to prevent cervical cancer, according to 6% of obstetricians and gynecologists. These statistics are depicted in Figure 8.

Figure 9 shows out of 113 obstetricians and gynecologists 85% (96) were of the opinion that all asymptomatic eligible patients should undergo screening tests in OPD. Whereas,

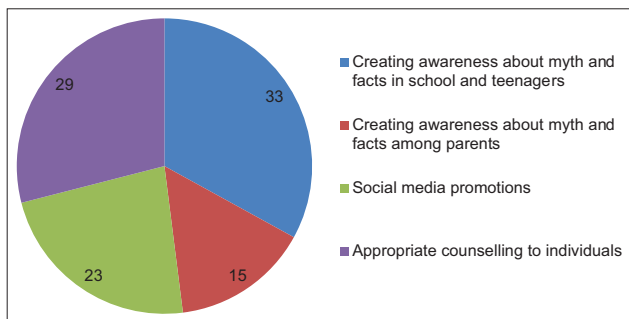


Figure 15: As a doctor how do you think you can help in removing patient related barriers? How to increase awareness amongst general public for cervical cancer screening?

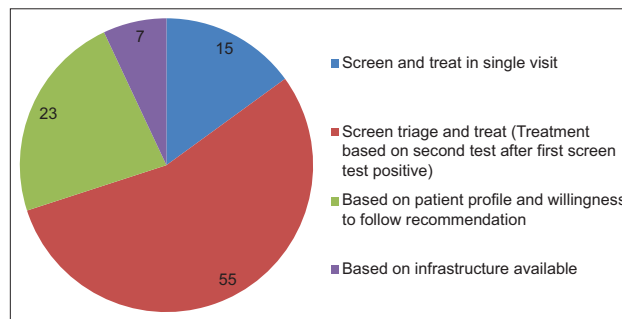


Figure 18: Along with screening, treatment of screen detected lesions is equally important. What method do you most commonly follow after screening?

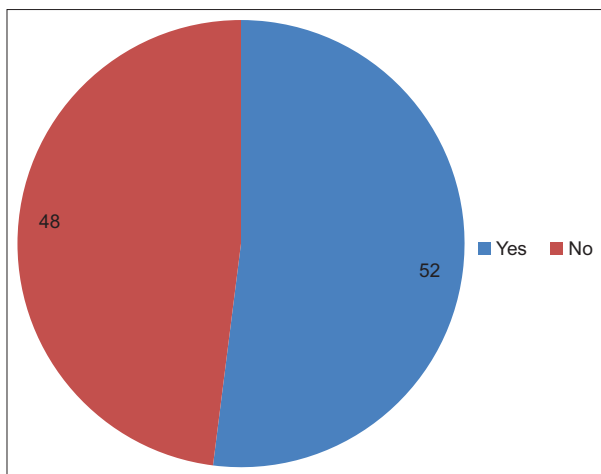


Figure 16: Do you think your country has enough facilities in public and private sector offering cervical cancer screening tests?

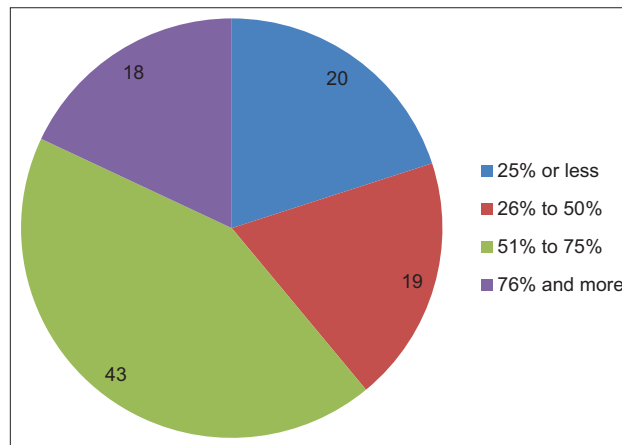


Figure 19: What are the chances of achieving fully vaccination of 90% girls by 15 years of age with 2 doses of HPV vaccine by 2030

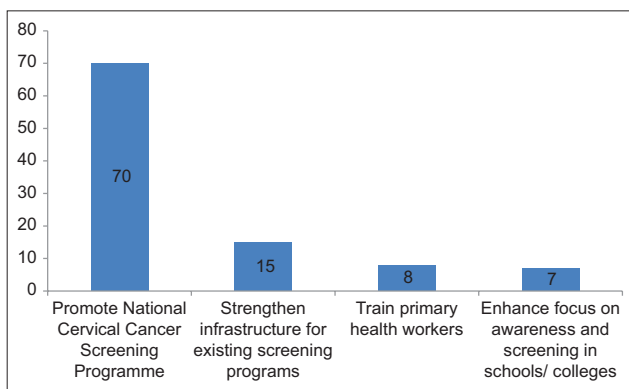


Figure 17: What steps should government take to improve screening rates in your country?

9% (10), 4% (5), and 2% (2) believed that only symptomatic eligible patients, only high-risk patients, and only those who asked for it should get tested, respectively.

HPV DNA and cytology, i.e., Co-testing, is the best method for screening cervical cancer patients and is recommended by

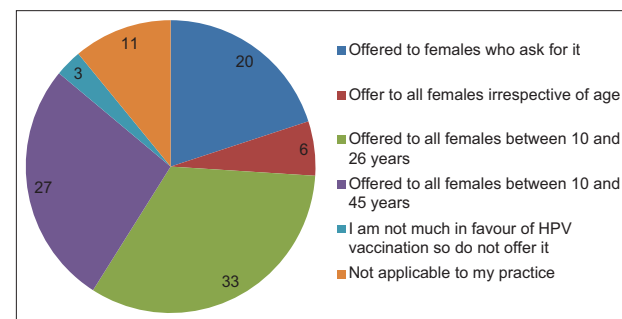


Figure 20: In your practice how often do you recommend HPV vaccine?

41% (46) of obstetricians and gynecologists as shown in Figure 10. Whereas HPV DNA and Cytology alone are recommended by 3% (4) and 37% (42) of obstetricians and gynecologists, respectively. Visual inspection with acetic acid or Visual inspection with Lugol's iodine (VIA/VILI) is followed by 17% (19) of obstetricians and gynecologists. About 2% of obstetricians and gynecologists did not follow cervical cancer screening methods in their OPD.

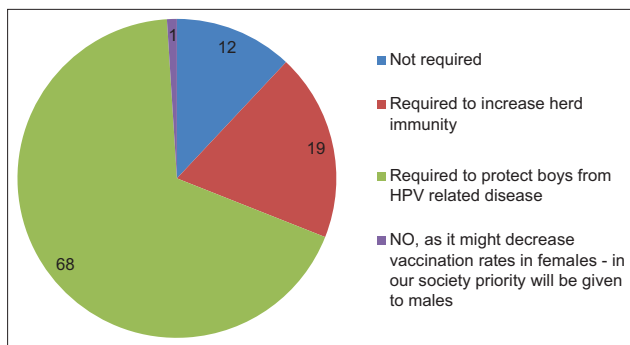


Figure 21: Do you think boys should also be vaccinated for HPV?

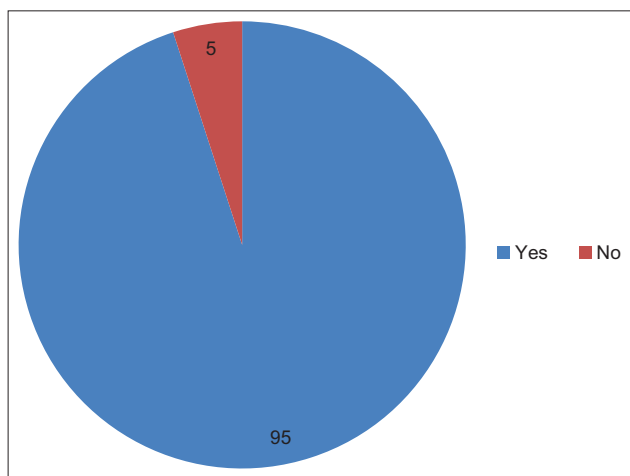


Figure 22: Do you think cervical cancer vaccination should be included in National Immunization Schedule?

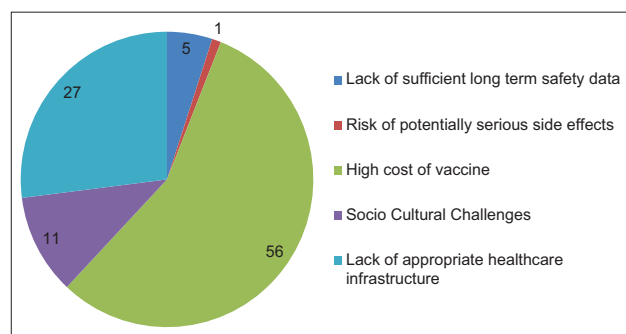


Figure 23: Barriers in completely vaccinating all the girls in age group of 9-14 years in your country

The Department of Health Research released a health technology assessment for the early diagnosis of cervical cancer. It concluded that, among various screening strategies, every 5 years is the most cost-effective screening method in the context of India. Figure 11 shows that 37% (42) of obstetricians and gynecologists were well trained to do VIA/VILI-guided biopsy but did not do it routinely in their practice. Whereas, 30% (34) of obstetricians and gynecologists were well trained to do VIA/VILI-guided biopsy and did it routinely in their patients. 25% (28) of obstetricians and

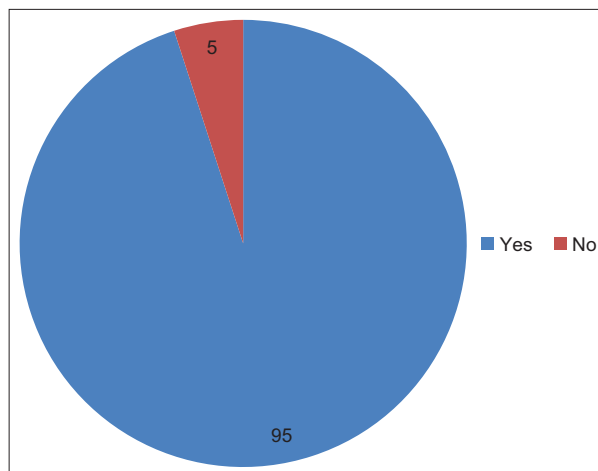


Figure 24: If HPV vaccine is made available in your country at Rs. 250 per dose would you recommend to all eligible patients?

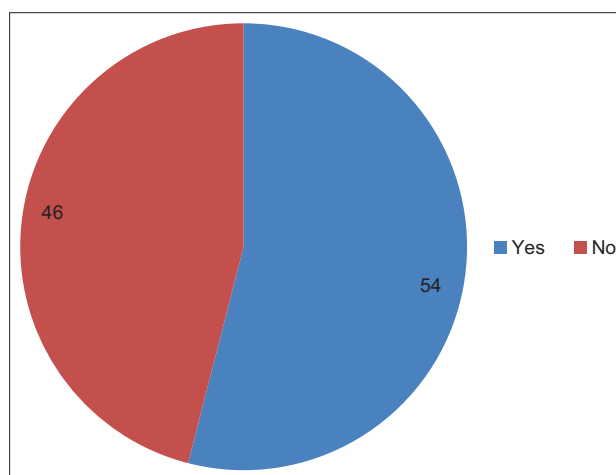


Figure 25: Do you think if we are able to vaccinate majority of girls with HPV vaccine we can avoid cervical cancer screening strategies in future?

gynecologists would like to do the test after getting proper training in it. 2% (2) were not interested in performing the test, and 6% (7) of obstetricians and gynecologists said VIA/VILI guided screening was not applicable for their practice.

Cost of the test and Time constraints were the two most important barriers, almost equally experienced by the majority of obstetricians and gynecologists, with each contributing around 40%. Lack of awareness regarding the screening method was the 2nd barrier to cervical cancer screening, as felt by 18% (21) of obstetricians and gynecologists. About 2% (3) of obstetricians and gynecologists were not sure about the screening test as demonstrated in Figure 12.

Figure 13 shows around 35% (40) of obstetricians and gynaecologists stated that around 76% and more and 51% to 75% patients would be ready to accept the screening test. 22% (24) of obstetricians and gynecologists stated that 26% to 50% eligible

patients would undergo screening test. Whereas, 25% or less eligible patients would undergo screening test among the eligible patients as per 7% (8) of obstetricians and gynecologists. 1% of Obstetrician and Gynecologist were not applicable.

Figure 14 shows out of 113 obstetricians and gynecologists, 32% (36) felt that less patients availed of screening facilities because they were asymptomatic and did not want to get tested. 18% (20) of obstetricians and gynecologists are of the opinion that less screening is due to the cost of tests and procedures. 14% (16), 13% (15), 12% (14) and 11% (12) feel that less screening is due to fear about getting diagnosed with cancer, feeling shy and embarrassed, so they are not willing for examination, fear of pain and discomfort, and a lack of easy availability of tests.

Figure 15 shows 33% (37) of obstetricians and gynecologists believed that creating awareness about myths and facts in schools and among teenagers would help in removing patient-related barriers and increase awareness among the general public for cervical cancer screening. 29% (33) of obstetricians and gynecologists believed that through appropriate individual counselling, targets would be achieved. 23% (26) and 15% (17) of obstetricians and gynecologists believed in social media promotion and creating awareness about myths and facts among parents.

Figure 16 shows 52% (59) of obstetricians and gynecologists believed that India has enough facilities in the public and private sectors offering cervical cancer screening tests, and 48% (54) believed that enough facilities in the public and private sectors offering cervical cancer screening tests are not available.

Figure 17 shows 70% (79) of obstetricians and gynecologists believed that by promoting the National Cervical Cancer Screening Program, the screening rate would increase in our country. 15% (17) felt that by strengthening infrastructure for existing screening programs, screening rates would improve. Whereas, 8% (9) and 7% (8) believed that training primary health workers and enhancing focus on awareness and screening in schools and colleges, respectively, would increase screening rates in our country.

After screening, around 55% (62) of obstetricians and gynecologists believed in screening, triage, and treatment. Around 23% (26) of obstetricians and gynecologists believe in giving treatment based on the patient's profile and willingness to follow. 15% (17) and 7% (8) follow screening and treatment in the same visit and based on the infrastructure available, respectively as shown in Figure 18.

Figure 19 shows 43% (49) of obstetricians and gynecologists believed that the WHO target of fully vaccination of 90% of girls by 15 years of age with 2 doses of HPV vaccine by 2030 would be achieved by 51% to 75%. Whereas, 20% (23), 19% (21) and 18% (20) believed that the target would be achieved by 25% or less, 26% to 50%, and 76% or more, respectively.

Figure 20 shows around 33% (37) and 27% (30) of obstetricians and gynecologists offer the HPV vaccine to all females between 10 and 26 years and 10 and 45 years,

respectively. Whereas, 20% (23) and 6% (7) of obstetricians and gynecologists offer vaccines to females who ask them, irrespective of ages. 3% (4) do not believe in HPV vaccinations and do not offer them and 11% (12) of obstetricians and gynecologists practices do not include patients requiring the HPV vaccine.

Figure 21 shows that according to 68% (77) of obstetricians and gynecologists boys should also get vaccinated to protect them from HPV-related diseases. 19% (21) believe that it is necessary to increase herd immunity. 12% (13) believed that vaccination for boys is not required, and 1% (2) believed that boys should not get vaccinated since it might decrease vaccination rates in females. In our society, priority will be given to males.

95% (108) of obstetricians and gynecologists believed that the cervical cancer vaccination should be included in the National Immunization Schedule and 5% (5) felt that it will not cause any extra benefit as shown in Figure 22.

Figure 23 show that hurdles in achieving complete vaccination of all the girls in age group of 9–14 years is majorly due to high cost of vaccine as stated by 56% (63) of obstetricians and gynecologists. 27% (31) believed that it is due to lack of appropriate healthcare infrastructure. Whereas Socio culture challenges, lack of sufficient long term safety data and risk of potentially serious side effects causing decrease in vaccination is believed by 11% (13), 5% (5) and 1% (1) of obstetricians and gynecologists, respectively.

95% (108) of obstetricians and gynecologists would recommend HPV vaccine to all eligible patients if it is made available for Rs. 250 in their country. Whereas 5% (5) will not recommend it. as depicted in Figure 24.

Figure 25 show that 61% (54) of obstetricians and gynecologists believe that if we are able to vaccinate the majority of girls with the HPV vaccine, we can avoid cervical cancer screening strategies in the future, whereas 46% (52) do not believe in the same.

DISCUSSION

Cervical cancer is the 2nd most common cancer among Indian women. It is a preventable disease because it has a long preinvasive state, cervical cytology screening programs are available, and the treatment of preinvasive lesions is effective. Universal screening programs are available for the early detection of preinvasive lesions. Screening tests like a Pap smear, HPV DNA, VIA, and VILI are available. By using these methods, the WHA target of screening 70% of women using a high-performance test by the age of 35 and again by the age of 45 by 2030 will be achieved in almost 51–75% of women, according to 50 out of 113 obstetricians and gynecologists. Early detection and offering early treatment of preinvasive lesions cause a reduction in incidence and mortality due to cervical cancer. The Global Burden of Disease 2019 study shows that in the SAARC region, the incidence of cervical cancer declined by 21% from 1990 to 2019. Furthermore, mortality due to cervical cancer has been

reduced by 32%. Similar changes in the incidence and mortality of cervical cancer were noticed by 87 out of 113 obstetricians and gynecologists. Increased awareness of screening and increased vaccination among females are major contributors to the decline in rate. Screening and vaccination of all eligible women is most important in the prevention of cervical cancer, as per 66 out of 113 obstetricians and gynecologists followed by screening alone, vaccination alone, and safe sexual practice. All asymptomatic eligible patients should avail cervical cancer screening program in OPD according to 96 obstetricians and gynecology which will help in early detection of the lesion followed by early treatment. HPV DNA and Cytology together are a better approach to screening than HPV DNA and Cytology alone. 46 obstetricians and gynecologists use this combined approach for screening. VIA VILI is preferred by 19 obstetricians and gynecologists since a direct biopsy can be taken and a tissue diagnosis can be made. 34 out of 113 obstetricians and gynecologists are well trained in VIA VILI and do it routinely with their patients.^[1]

In spite of the facilities available, a decrease in cervical cancer screening is seen due to the cost of the test and time constraints, both according to 50 out of 113 obstetricians and gynecologists.

This decrease in cervical cancer screening is also due to less receptivity among eligible patients to getting the test done. According to 40 out of 113 obstetricians and gynecologists almost 76% of patients will readily avail themselves of screening facilities. Similarly, barriers from the patient's side, such as no symptoms at present, so they don't want to get tested, are the major barriers to decreasing the screening rate of cervical cancer, followed by the cost of the test and procedure. Increasing awareness for cervical cancer screening can be done in the general population by clearing myths and facts in schools and among teenagers, as per 37 out of 113 obstetricians and gynecologists, and by appropriate individual counseling, social media promotions, and creating awareness among parents, as per 33, 26, and 17 obstetricians and gynecologists out of 113.

According to 59 out of 113 obstetricians and gynecologists India has enough facilities in the public and private sectors to offer cervical cancer screening tests. Cervical cancer screening rates in India can be improved by promoting the National Cervical Cancer Screening Program. Strengthening infrastructure for existing screening programs, training primary health care workers, and increasing focus on awareness and screening in schools and colleges will also improve screening rates. Along with screening, treatment of screendetected lesions is equally important. Screen Triage and treat, i.e., treatment based on the second test after the first screening test is positive, is followed by 62 obstetricians and gynecologists. 17 obstetricians and gynecologists follow screening and treatment in a single visit.

Vaccination is an important intervention in decreasing cervical cancer rates. The L1 Capsule protein of the virus is used in manufacturing vaccines. Two types, Cervarix (Bivalent) and Gardasil (Quadrivalent and Nonavalent), are available. It gives a protection rate of 70%. Vaccination is thus an important step to

prevent cervical cancer. WHO aims to fully vaccinate 90% of girls by the age of 15 with 2 doses of HPV vaccine. According to 49 out of 113 obstetricians and gynecologists believe that this can be achieved in about 51–75% of patients. HPV vaccine should be offered to all females up to 26 years of age, according to 37 obstetricians and gynecologists, and up to 45 years of age, as per 30 obstetricians and gynecologists.

Boys should also be vaccinated for HPV, as it is required to protect them from HPV-related diseases, according to the 77 of obstetricians and gynecologists who gave the survey. 19 believes that it helps increase herd immunity. Cervical cancer vaccination should be included in the National Immunization Schedule, according to 108 obstetricians and gynecologists as it will increase vaccination rates.^[2]

In spite of all this, the acceptance rate for vaccination is less which is mainly attributed to the high cost of vaccines, followed by a lack of appropriate healthcare infrastructure, a lack of sufficient long-term safety data, socio-cultural challenges, and the risk of potential side effects.

Since cost is a major issue, decreasing the cost to Rs. 250 per dose will increase vaccination rates in India, according to 108 obstetricians and gynecologists.

By vaccinating the majority of girls with the HPV vaccine, cervical cancer screening strategies can be avoided in the future, according to 54 out of 113 obstetricians and gynecologists.

Limitations of the study include the fact that this was a survey of personal choices. It gives an idea of the personal experiences of various obstetricians and gynecologists about awareness of cervical cancer, its incidence, risk factors, prevention strategies, and management according to their practice and patient profiles.^[3]

CONCLUSION

Each year, more than half a million women are diagnosed with cervical cancer, and the disease results in over 3,00,000 deaths worldwide. High-risk subtypes of the human papilloma virus (HPV) are the cause of the disease in most cases. The disease is largely preventable. Comprehensive educational efforts and skill-building modules are needed of hour to keep every practicing obstetrician and gynaecologist regarding recent advances in screening and vaccination strategies for cervical cancer. Early detection and prompt treatment of preinvasive lesions help reduce the burden of this disease. Screening a woman for HPV can dramatically decrease her risk of dying from cervical cancer. New, rapid, low-cost HPV testing can allow for high-volume screening for the approximately 1.5 billion women who have never been screened. HPV screening can then be combined with high-resolution digital colposcopy. With proper screening of all patients, it is possible to achieve a decrease in mortality and morbidity due to the Ca cervix.^[4]

FUNDING

No funding sources.

CONFLICT OF INTEREST

None declared

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

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