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Knowledge, Attitude And Acceptability Of Human Papillomavirus Vaccine Among Adolescent Girls In Two Selected Secondary Schools In Obio-Akpor Local Government Area, Rivers State

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ABSTRACT
This study examined the awareness and the acceptability of the human papillomavirus vaccine by adolescent girls in two selected secondary schools in Obio-Akpor Local Government Area, Rivers State. A descriptive survey was adopted for the study with an estimated population of two thousand (2000) students from Rumuokwuta Girls' Secondary School and Federal Government College (FGC) Rumuokoro in Obio-Akpor Local Government Area in Rivers State. A purposive sampling technique and the Taro Yamane formula with a 95% confidence level were used to select a sample size of 100 students. Data was collected using a structured questionnaire with a reliability coefficient of 0.6. The data generated was sorted, coded, and analyzed using the statistical product for service solution (SPSS) version 23.0. Statistical tools such as frequency, percentage, and mean were used. The findings of the study showed that the respondents' knowledge of human papillomavirus has a significant relationship with the awareness of the human papillomavirus (HPV) vaccine. It was also discovered that the respondents' attitudes towards the HPV vaccine had a significant correlation with the acceptability of the human papillomavirus vaccine. It was recommended that female adolescents should be taught and encouraged to have the right attitude towards HPV vaccination. Also, with the growing rate of HPV, it was recommended that males should be educated to know the importance and be encouraged to allow their wives, daughters, and sisters to be vaccinated for a greater and healthier society.
Keywords: Acceptability, Adolescent, Awareness, Girls, Vaccine

INTRODUCTION

Cancer is a leading cause of death worldwide, with approximately 10 million fatalities estimated in 2020, accounting for nearly one in every six deaths (World Health Organisation, 2022). Most men and women — over 80% of sexually active people — are infected with HPV at some time in their life, although the majority of people are unaware of their infection (Cleveland Clinic, 2018). In low- and lower-middle-income nations, cancer-causing diseases such as the human papillomavirus (HPV) and hepatitis account for roughly 30% of cancer cases (WHO, 2022). HPV is a tiny, double-stranded DNA virus that belongs to the Papillomaviridae family and is divided into two categories: HPVs with a low risk (LR-HPVs) that cause anogenital and cutaneous warts, and high-risk HPVs (HR-HPVs) that cause oropharyngeal (oral, tonsil, and throat) cancers as well as anogenital cancers such as cervical, anal, vulvar, vaginal, and penile cancers (De Martel, Plummer, Vignat, Franceschi 2017). Of the more than 150 HPV genotypes, 13 genotypes have been shown to cause cervical cancer. Most cases of HPV-associated cancer are caused by HPV, genotypes 16 and 18 (Veins 2016). In the United States, HPV genotype 16 and 18 account for 66%

of cases of cervical cancer and HPV genotypes 31,33,45,52, and58 account for additional 15% of cases of cervical cancer 50-60% of cases are caused by HPV genotype 16 and 18,and 25% of cases are caused by HPV genotype.31,33,45,52,and 58. So also in South Africa (Forman, de-Martel, and Lancey 2012), affirm that HPV is the most common sexually transmitted infection (STI) among women worldwide. Cervical cancer, the third most common cancer in women (Bruni, Albero, Serrano, Mena, Gómez, Muoz, et al. 2019), is an HPV-related disease with the highest mortality rate in women after breast cancer (Bray, Ferlay, Soerjomataram, Siegel, Torre, Jemal 2018). Overall, the epidemiologic distribution of HPV infection and HPV-associated burden varies significantly around the world, and morbidity-related factors include geographic, socioeconomic, cultural, and genetic factors related to the viral genome variability, as well as intrinsic individual factors such as age, gender, anatomic site, and health status (LeConte, Szaniszlo, Fennewald, Lou, Qiu, Chen, et al. 2019).

HPV genotype, 31, 33, 45, 52 according to (Stenley 2008) epidemiological, molecular and clinical evidence have shown that cervical cancer is caused by human papillomavirus, a sexually transmitted infection, especially serotype 6, 11, 16 and 18.2 and 58 (Harins, 2015). Wierzbicka, Jozefiak, Jackowska, Sydlowski, Gozdzicka-Jozefiak (2014) reported that approximately 90% of cases of genital warts treated with HPV vaccine significantly reduce the incidence of anogenital cancer and genital warts. HPV vaccination may decrease the incidence of oropharyngeal cancer as well as the maternal transmittal of HPV to infants (Wierzbicka et al 2014). Sexually transmitted diseases (STDs) amongst adolescents are a worldwide growing health problem. Approximately one million people contract sexually transmitted infections every day and 50% of them are adolescents aged 15-24 years (Lazarus, Sihvonen-Riemenschneider, Laukamm-Josten, Wong & Liljestrand, 2010). STDs include many different sexually transmittable infectious diseases such as chlamydia, gonorrhoea, genital herpes, human papilloma virus (HPV), Human Immune Deficiency Virus (HIV), and syphilis. An STD is transmitted through vaginal, oral, and anal sexual contact as well as through blood products. STDs can also be transmitted from mother to child during childbirth. Untreated chlamydia and gonorrhoea can lead to salpingitis for women and epididymitis for men, which can affect fertility and in the worst case lead to sterility. Hepatitis B, genital herpes, HPV, and HIV are still incurable infections. HPV can lead to cervical cancer and HIV to premature death. The only way to protect oneself from contracting an STD is through consistent condom use (Vårdguiden, 2011). Markowitz and Hariri (2010) state that in the United States, the prevalence of vaccine-type HPV decreased 56% among females aged 14-19 years between 2006 and 2010 when the quadrivalent (the booster dose given to those that did not complete the recommended interval of at least 24weeks) was administered. Despite the benefits of the HPV vaccine, only 41.9% of females in the recommended age group and only 28.1% of males in the recommended age group have received all recommended doses (Reagan-Steiner, Yankey, Jeyarajah, Elam, Curtis, and MacNeil, 2016). It is the most common gynaecological cancer among women in Sub-Saharan Africa (Louie and de-Sanjose, 2009). It is estimated that 70,722 new cases of invasive cervical cancer occur annually in Sub-Sahara Africa (Parkin and Sitas, 2008).

Cervical cancer is a disease that affects 56.2 million Nigerian women aged 15 and above (Bruni et al. 2021). According to current statistics, 12075 women are diagnosed with cervical cancer each year, with 7968 dying from the disease. Cervical cancer is the second most common disease among Nigerian women and the second most common cancer among women between the ages of 15 and 44. Cervical HPV-16/18 infection is predicted to affect 3.5 percent of women in the general population at any given time, and HPVs 16 and 18 are responsible for 66.9% of invasive cervical malignancies (Bruni et al. 2021). Nigeria is home to over 206 million inhabitants. Each year, its population increases by nearly 5.5 million (World Atlas 2022). In Nigeria in a recent study conducted by (Ezeanochie & Olagbuji 2014), it was stated that 70% of mothers accepted HPV vaccination for daughters. Vaccination is one of the most cost-effective public health interventions as it prevents serious diseases (Ezeanochie, Olagbuji, 2014 and reviewed children immunization schedule of April 2009).

There is inadequate information regarding the prevalent rate of cervical cancer in Rivers State. This could be attributable to a lack of study in this area, as well as the misconception that the HPV vaccine will cause

sterility, or trouble with learning and memory (Penn Medicine 2016). The researcher observed while working at the University of Port Harcourt Teaching Hospital, that there were accounts of cases of sexual abuse in schools within the Rumuokwuta community which was said to be perpetrated by male teachers. Also in some women that were admitted for treatment of cervical cancer, there was a history of exposure to early sexual intercourse, multiple sexual partners, sexual abuse, and rape in their early teens. Based on this observation, the researcher was motivated to research the acceptability of the human papillomavirus vaccine that can prevent the disease.

Despite the growing emphasis on HPV awareness and understanding in works of literature, the majority of the existing research has focused on women, with few studies in men and adolescents. This study will thus aid in bridging the gap between adolescent girls' awareness and acceptability of the human papillomavirus vaccine, with the expectation that the findings, if widely disseminated, will aid policymakers in making appropriate decisions on how to increase the population's acceptability of the vaccine. The study provided answers to the following questions:

1. What is the level of the knowledge of HPV vaccine in the prevention of cervical cancer in the two selected secondary schools in Obio-Akpor Local Government Area, Rivers State?
2. What is the attitude towards HPV vaccination among adolescents in the two selected secondary schools in Obio-Akpor Local Government Area, Rivers State?
3. What are the factors that influence the acceptability of the HPV vaccine among female adolescent school girls in the two selected secondary schools in Obio-Akpor Local Government Area, Rivers State?

Hypotheses

The following hypotheses postulated were tested at 0.05 level of significance:

1. There is no significant relationship between attitudes towards HPV vaccine and the acceptability of the HPV vaccine among the female adolescents in the two selected secondary schools in Obio-Akpor Local Government Area, Rivers State
2. There is no significant relationship between the level of awareness of HPV vaccine and the prevention of HPV among the female adolescents in the two selected secondary schools in Obio-Akpor Local Government Area, Rivers State
3. There is no significant relationship between the knowledge of HPV and the attitudes towards vaccination among the female adolescents in the two selected secondary schools in Obio-Akpor Local Government Area, Rivers State.

METHODOLOGY

The research design used in this study is a descriptive study design with an estimated population of two thousand (2000) students from Rumuokwuta Girls' Secondary School and Federal Government College (FGC) Rumuokoro in Obio-Akpor Local Government Area in Rivers State. The target population of this study comprised students in JSS1, JSS2, and SS2. Which made up one hundred and thirty-four (134) students. Using the purposive sampling technique and the Taro Yamane formula with a 95% confidence level, the sample size for the study was 100 students. These groups of students were chosen because they fall within the researcher's age range of 10-18years of the target population. The instrument for data collection was a structured questionnaire with a reliability coefficient of 0.8. Data analysis was done with the aid of the Statistical Product for Service Solution (SPSS V-23). Statistical tools such percentage and Pearson correlation were used.

RESULTS

The results of the study were presented below:

Table 1: Knowledge of the human papilloma virus (HPV)

S/N	Question	Yes	No	I don't know
1	HPV is the virus that causes cervical cancer	48 (48%)	4 (4%)	48 (48%)
2	You get HPV infection only through having sex	27 (27%)	27 (27%)	46 (46%)
3	HPV is a common infection in female adolescent?	42 (42%)	10 (10%)	48 (48%)
4	Most female adolescent infected with HPV infection show symptoms	23 (23%)	23 (23%)	54 (54%)
5	Using condoms can completely prevent HPV infections	17 (17%)	32 (32%)	51 (51%)
6	Can HPV be cleared by the immune system?	17 (17%)	26 (26%)	57 (57%)
7	Is persistent HPV infection the necessary cause of cervical cancer?	37 (37%)	14 (14%)	49 (49%)
8	Having a single sexual partner can prevent HPV infection	24 (24%)	30 (30)	46 (46%)
9	Early sexual activity is a risk factor for HPV infection	54 (54%)	1 (1%)	44 (44%)
10	The HPV that causes cervical cancer and genital warts are of the same type	30 (30%)	8 (8%)	62 (62%)

The summary of the respondents' knowledge of human papilloma virus shows that 48 (48%) knows that HPV is the virus that causes cervical cancer, 27 (27%) said that one can get HPV infection only through having sex, 42 (42%) agreed that HPV is a common infection in female adolescent, 23 (23%) said most female adolescent infected with HPV infection show symptoms, while 17 (17%) agreed that using condoms can completely prevent HPV infections, 17 (17%) said HPV be cleared by the immune system also 27 (27%) said that persistent HPV infection is the necessary cause of cervical cancer, 24 (24%) said that having a single sexual partner can prevent HPV infection, 54 (54%) said that early sexual activity is a risk factor for HPV infection and lastly 30 (30%) said that The HPV that causes cervical cancer and genital warts is of the same type.

Table 2: Knowledge of Vaccines

S/N	Question	Yes	No	I don't know
11	I know there is a vaccine to protect against cervical cancer and genital warts	40 (40%)	30 (30%)	30 (30%)
13	Can HPV vaccines be given to a sexually active female adolescents?	40 (40%)	26 (26%)	34 (34%)
14	Do female adolescents need to be screened for HPV before getting vaccinated?	51 (51%)	21 (21%)	28 (28%)
15	Is it safe to have multiple sexual partners after a full course of HPV vaccination?	7 (7%)	65 (65%)	28 (28%)
16	The HPV vaccine is currently recommended for female adolescent only	30 (30%)	37 (37%)	33 (33%)
17	The HPV vaccine is recommended for males and females of every age group	27 (27%)	34 (34%)	39 (39%)
18	It is good to get vaccinated against HPV after becoming sexually active	33 (33%)	19 (19%)	48 (48%)
19	The HPV vaccine can provide 100% protection against HPV-related diseases	39 (39%)	18 (18%)	43 (43%)

The summary of the respondents' knowledge of human papilloma virus vaccine reveals that 40 (40%) knows there is a vaccine to protect against cervical cancer and genital warts, 40 (40%) agrees that HPV vaccines be given to a sexually active female adolescent, 51 (51%) said that female adolescent need to be screened for HPV before getting vaccinated, 7 (7%) said that it is safe to have multiple sexual partners after full course of HPV vaccination while 30 (30%) said that HPV vaccine is currently recommended for female adolescent only, 33 (33%) said that it is good to get vaccinated against HPV after becoming sexually active and 39 (39%) agreed that HPV vaccine can provide 100% protection against HPV-related diseases lastly on source of knowledge of HPV vaccine, 34 (34%) said it was from school courses, 29 (29%) from hospital, 16 (16%) said through family/friends, internet, television, while 9 (%) said through publications and lastly 12 (12%) said it was through other means not listed in the options.

Table 3: Attitude towards HPV Vaccination

S/N	Question	Strongly agreed	Agreed	Disagreed	Strongly disagreed
20.	I cannot be easily infected by HPV, since I have heard of the vaccine	35 (35%)	29 (29%)	19 (19%)	17 (17%)
21.	HPV infection is not a serious disease, and vaccination is not very important	3 (3%)	6 (6%)	31 (31%)	60 (60%)
22.	Preventing HPV infection is very much less important for women, since the vaccines are everywhere	3 (3%)	12 (12%)	50 (50%)	35 (35%)
23.	People who have multiple sexual partners after vaccination have a low risk of becoming infected with HPV	8 (8%)	9 (9%)	35 (35%)	48 (48%)
24.	I am sure that the HPV vaccine is not highly effective and safe	9 (9%)	23 (23%)	32 (32%)	36 (36%)
25.	It is preferable to vaccinate only women since women are the ones prone to having cervical cancer	23 (23%)	42 (42%)	24 (24%)	11 (11%)

The summary of the respondents' responses on attitude towards HPV vaccination shows that 64 (64%) said that they cannot be easily infected by HPV since they have heard of the vaccine, 9 (9%) said HPV infection is not a serious disease hence vaccination is not very important, 15 (15%) are of the opinion that preventing HPV infection is very much less important for women since the vaccines are everywhere, while 17 (17%) said people who have multiple sexual partners after vaccination have a low risk of becoming infected with HPV 32 (32%) are sure that the HPV vaccine is not highly effective and safe, lastly, 65 (65%) agreed that it is preferable to vaccinate only women, since women are the ones prone to having cervical cancer.

Table 4: **Factors that can affect the acceptability of HPV vaccines**

S/N	The following factors can make me not accept the HPV vaccine	Strongly Agree	Agree	Disagree	Strongly Disagree
26.	The vaccines are way too costly	19 (19%)	54 (54%)	15 (15%)	2 (2%)
27.	The vaccines are not beneficial to me now, since I am not sexually active.	28 (28%)	25 (25%)	24 (24%)	23 (23%)
28.	The vaccine is not made for people of my age	9 (9%)	18 (18%)	39 (39%)	34 (34%)
29.	I have adequate knowledge about the vaccines, therefore, I know I am not supposed to receive it	12 (12%)	14 (14%)	38 (38%)	36 (36%)
30.	My parents/guardian will consent to it	23 (23%)	44 (44%)	27 (27%)	6 (6%)
31.	I am not at risk of getting infected with HPV	26 (26%)	33 (33%)	27 (27%)	14 (14%)
32.	Health care workers giving the vaccine may not be supportive in giving the vaccine.	12 (12%)	35 (35%)	32 (32%)	21 (21%)

The summary of the respondents' responses on factors that can affect the acceptability of HPV vaccines indicated that 73 (73%) agreed that the vaccines are way too costly, 53 (53%) said the vaccines are not beneficial to them now, since not sexually active, 27 (27%) said that the vaccine is not made for people of

their age, while 26 (26%) said they have adequate knowledge about the vaccines, therefore, no need to receive it, 67 (67%) are of the opinion that their parents/guardian will have to consent to it, also 59 (59%) said they are not at risk of getting infected with HPV and lastly, 47 (47%) said that health care workers giving the vaccine may not be supportive in giving the vaccine.

Table 5: Pearson-r table showing the correlation between attitudes towards the HPV vaccine and the acceptability of the HPV vaccine

Variables	X	Std. Dev.	df	r	p-value
Attitudes on HPV vaccine	17.24	2.555	98	-0.300**	0.002
Acceptability	17.45	3.566			

**. Correlation is significant at the 0.01 level (2-tailed).

The result showed that the df.= 98, r = -0.300, p <0.05, therefore the hypothesis which stated that there is no significant relationship between the attitudes towards the HPV vaccine and the acceptability of the HPV vaccine is hereby rejected. This shows that there is a significant relationship between the attitudes towards the HPV vaccine and the acceptability of the HPV vaccine.

Table 5: Pearson-r table showing the significant relationship between the level of awareness of the HPV and the prevention of the HPV

Variables	X	Std. Dev.	df	r	p-value
Level of awareness of HPV	18.52	4.912	98	-0.354**	0.000
Prevention of HPV	17.45	3.566			

**. Correlation is significant at the 0.01 level (2-tailed).

The result showed that the df.= 98, r = -0.354, p <0.05, therefore the hypothesis which stated that there is no significant relationship between the level of awareness of the HPV and the prevention of the HPV is hereby rejected. This shows that the respondents' level of awareness of the HPV vaccine has a significant relationship with the prevention of HPV.

Table 6: Pearson-r table showing the correlation between the knowledge of HPV and the attitudes towards vaccination among the female adolescents in the two selected secondary schools in Obio-Akpor Local Government Area, Rivers State

Variables	X	Std. Dev.	df	R	Sign.
Knowledge of HPV	21.95	6.749	98	-0.280**	0.005
Attitudes towards vaccination	17.24	2.555			

**. Correlation is significant at the 0.01 level (2-tailed).

The result showed that the df.= 98, r = -0.280, significance <0.05, therefore the hypothesis which state that there is no correlation between knowledge of HPV and attitudes of adolescent towards HPV vaccination is hereby rejected. This shows that the respondents' knowledge of HPV was related with their attitudes towards human papillomavirus vaccination.

DISCUSSION OF FINDINGS

The findings also revealed that many of the respondents (40%) knows that there is a vaccine to protect against cervical cancer and genital warts, many (40%) also agreed that the HPV vaccine is given to a sexually active adolescent female, a majority (51%) said that female adolescents need to be screened for HPV before getting vaccinated and many of them also agreed that HPV Vaccine can provide 100% protection. This shows that they have good knowledge. This corroborates with Shao-Kai et al (2013) who conducted a study on HPV vaccine awareness acceptability and decision-making factors among Chinese

college students and found out that the students have knowledge about that vaccination but have an obstacle to assessing it which is the price.

The findings showed that the majority (64%) of the respondents said that they cannot be easily infected by HPV since they have heard of the vaccine, some of them (32%) said that the HPV vaccine is not highly effective and safe, many (65%) said that it is preferable to vaccinate only women since women are the ones prone to having cervical cancer. This shows that the respondents have a poor attitude towards HPV vaccination.

The study findings also revealed that majority (73%) of the respondents agreed that the vaccine is expensive, many (67%) opined that their parents/ guardian will have to consent to it, many (59%) said that they are not at risk in getting infected with HPV. This corroborates with Shao-Kai et al (2013) who identified the factors in his study as the cost, it also agrees with Perlman et al (2014) that the schools do not allow HPV vaccination because they did not wish to anger parents. So the researcher also finds out that, the female adolescents were ready to accept the uptake of the vaccine as their knowledge about human papillomavirus causes cervical cancer, genital, anorectal warts. This is in agreement with the pilot study carried out in South Africa, Lesotho, Tanzania, Botswana, and Zimbabwe (Perlman, Wamai, & Bain2014).

The cost of the vaccine is way too costly for students to afford. This also becomes a constraint on the parts of the students. Their parents or guidance will need to agree and have strong financial backings to be able to give the vaccine first and second dose and probably the third dose. These agree with the conceptual framework of modified vaccine Awareness, Acceptability and Adherence Model (by: Ingrid, Norman, Glenda, Jessica, Claude, and David. Source: sex health 2010) and (Perlman et al., 2014) that talks about the cost of the vaccine. It further corroborates with the study carried out in 2008 through 2011 in Sub-Saharan African countries, except Mauritania and Nigeria.

From the study conducted, the researcher finds out that teachers are skeptical about releasing students for the sensitization of the topic, maybe due to protecting the students' confidentiality and school rules. This is in agreement with what (Perlmal et al., 2014) stated that "there are instances of schools not allowing HPV vaccination because they do not wish to anger parents. There is also some culturally perceptive communication to a variety of relevant societal groups in addition to the target population which is JSS1&2 and SS2 and mothers/ guardians (including health care workers at various levels of the health system, other male and female relatives, community and religious leaders, traditional healers and educational officials) improve vaccine acceptability and uptake which is in agreement with the conceptual framework of modified vaccine Awareness, Acceptability and Adherence Model (Ingrid, Norman, Glenda, Jessica, Claude, and David. Source: sex health 2010) and (Perlman 2014).

As regards the reasons for acceptance and rejection of the HPV vaccine, adults were more likely to allow their children, to be vaccinated if they understood the pathogenesis of cervical cancer and modalities to reduce the incidence thereof and knew someone with cervical cancer. This is in line with the conceptual framework modified vaccine Awareness, Acceptability and Adherence Model (Ingrid, Norman, Glenda, Jessica, Claude and David. Source: sex health 2010) and (Perlman 2014). Vaccine availability and side effect of the vaccine is pain and some parents opine that the vaccine may cause infertility and make the female adolescent promiscuous. Parents are of the mind that long time study should be carried out on some group and monitored for at least ten years to rule out infertility. This also agrees with a pilot study conducted by (Agosti and Goldie, 2007), which states that there was no apprehension surrounding the targeting of young women by the government because this could be misconstrued as a way to control fertility. Lack of knowledge may compromise awareness of the severity of the disease and ultimately the acceptability and subsequent administration of HPV vaccination (Zhang et al, 2013). The findings also provided answers to the stated research hypotheses.

This result showed that the respondents' attitudes towards the HPV vaccine have a significant correlation with the acceptability of the HPV vaccine acceptability. These findings are in agreement with what Perlman, Wamai, and Bain discovered in their findings that pilot studies in South Africa, Lesotho, Tanzania, Botswana, and Zimbabwe demonstrated HPV vaccine acceptability and uptake to be high

(Perlman, Wamai & Bain, 2014). Also, there were occasional instances of schools not allowing HPV vaccination because they did not wish to anger parents. This may not be far away from the fact that certain factors within the societies have great influences on the parent's attitudes towards HPV vaccination and its acceptability.

CONCLUSION

Based on the findings of the study, it was concluded that, majority of the students have poor knowledge of human papillomavirus and HPV vaccine which in turn influenced their attitudes towards vaccination. It is worthy of mention that the findings of this study revealed that some of the students are willing to be vaccinated against human papillomavirus noting that factors that may affect vaccine acceptability is not a problem to them, as such, all hands must be on deck to help the younger generation be fully immunized against cervical cancer.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

1. The female adolescent should be taught and encouraged to have the right attitude towards HPV vaccination.
2. Health care workers should be ready to provide awareness to the masses at all times especially mothers on the advantages of the HPV vaccine in planning their care.
3. Looking at the economic situations of the majority of the citizens it is imperative for the government, non-governmental organizations to assist in subsidizing the cost of the vaccine for people at their grass root.
4. The government through the federal, state, and local ministry of health should partner with professionals advanced in the field of oncology and gynaecology in other to provide up-to-date training of staff especially those in the areas of female care.
5. Health care students (medical students, nurses, social workers, medical sociology, etc.), should be educated also at all levels to encourage and create awareness to their friends, family, and peers.

Implications of findings for nursing education/practice

Cervical cancer is an important public health problem. It is the most common gynaecological malignant neoplasm all over the world. Cervical cancer is a potentially preventable disease. It is therefore important to be aware of the risk factors, screening techniques, and available diagnostic options, with special attention to the management of the pre-invasive disease. Mass awareness should be carried out all over the state and nation at large targeting young females at their schools as well as the parent, at various places of gathering.

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