

**AWARENESS OF CERVICAL CANCER AND VACCINATION AGAINST HUMAN  
PAPILLOMA VIRUS AMONG URBAN WOMEN****Sujata Banerjee<sup>1</sup>, Yogesh R. Yadav<sup>1</sup>, Pradnya Jadhav<sup>2\*</sup> and Sundaram Kartikeyan<sup>3</sup>**<sup>1</sup>Junior Resident, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India.<sup>2</sup>Assistant Professor, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India.<sup>3</sup>Professor and Head, Community Medicine Department, Rajiv Gandhi Medical College, Kalwa, Thane-400 605, Maharashtra, India.**\*Corresponding Author: Dr. Pradnya Jadhav**

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**ABSTRACT**

This cross-sectional interview-based descriptive study was conducted using convenience sampling on 568 married urban women with at least one living child to determine their awareness of cervical cancer and human papillomavirus vaccine. After explaining the purpose of the study to prospective respondents and obtaining their informed consent, a pre-tested and pre-validated questionnaire was used for interviewing the willing participants. The mean age of respondents was 26.79 +/- 6.51 years; they were married since 6.30 +/- 7.19 years with a mean parity of 1.80 +/- 1.01. 75.70% were Hindus, 74.29% lived in slums, 93.48% were homemakers and the self-reported monthly family income was between Rs. 10,000 and Rs. 20,000 for 42.78% of respondents. The educational attainment of 20.07% of respondents was 12<sup>th</sup> standard or higher. Only 06.34% were aware of cervical cancer, for whom the sources of information were health care personnel (13.89%), family and friends (27.78%) and the media (58.33%). 04.23% were aware of availability of a vaccine to prevent cervical cancer but none of the respondents had taken the vaccine. Due to social stigma associated with the sexually-transmitted human papillomavirus infection, awareness campaigns ought to educate the population at risk without causing panic.

**KEY WORDS:** Awareness, Cervical cancer, Human papilloma vaccine, Urban women.**INTRODUCTION**

The human papilloma virus (HPV) is a small DNA virus,<sup>[1]</sup> which infects the basal cells in the stratified squamous epithelium at the squamo-columnar junction of the uterine cervix. HPV may also infect the glandular epithelium of the endocervix, causing glandular neoplasms (adenocarcinoma in situ or invasive adenocarcinoma).<sup>[2]</sup> Out of more than 40 anogenital types of HPV, about 15 are oncogenic.<sup>[3]</sup> HPV types 16 and 18 cause nearly 70% of cervical cancers.<sup>[4]</sup> Cervical carcinogenesis can be assessed by multi-pronged methods: visually (colposcopy and related techniques), microscopically (cytology and histology), and molecularly (HPV DNA tests and serology). HPV-typing is essential, because non-oncogenic HPV infections can cause cytologic abnormalities without risk of cancer. HPV infection does not cause symptoms, such as, itching, burning and vaginal discharge.<sup>[5]</sup> Since most infections are not microscopically evident or visible to the clinician, molecular level studies of HPV infection are recommended.<sup>[6]</sup> HPV DNA assays, the standard tests for detection, provide a strong link of HPV transmission to numbers of sexual partners.<sup>[7]</sup> HPV

serology has a high level of specificity (non-infected women as well as virgins are sero-negative) but a low level of sensitivity (many infected women are not seropositive).<sup>[8]</sup>

HPV infections are easily transmitted, possibly through microscopic tears in the surface of epithelium occurring during coitus. Though infections of the introitus and vagina are as common as cervical infections, they seldom result in cancer.<sup>[9]</sup> Anal intercourse can cause anal HPV infections and anal neoplastic lesions in men and women.<sup>[10, 11]</sup> Since all oncogenic types are transmitted by the same sexual route, concurrent multiple infections are very common.<sup>[12]</sup>

Though the penile skin frequently harbours HPV, cancer is rare. Probably by reducing infection-prone non-cornified epithelium, male circumcision reduces the probability of HPV infection and slightly decreases the risk of cervical cancer among female sexual partners.<sup>[13]</sup> Only a fraction of penile cancers are HPV-related and the majority is related to chronic inflammation.<sup>[14]</sup> At present, there is no reliable method of measuring HPV

infection in the entire cornified epithelium of the penis. Examination of male partners of HPV-infected women is of unclear value.<sup>[15]</sup>

Condom use protects against some clinical sequelae of HPV infection and helps in clearance of infection and clinical symptoms, though it does not prevent primary HPV infection.<sup>[16-18]</sup> Three available prophylactic vaccines (bivalent, quadrivalent and 9-valent) vary in the number of HPV types they contain and target. These vaccines contain virus-like particles (VLPs) produced by the recombinant DNA technique, which creates the L-1 protein (that comprises the capsid of HPV). The vaccinated persons are protected by VLPs that can stimulate generation of high titres neutralizing antibodies, independent of cell-mediated immune response.<sup>[16]</sup> A high level of acceptance of HPV vaccine has been found among those who were aware of HPV and cervical cancer.<sup>[19-22]</sup>

The present study was conducted to determine the awareness of cervical cancer and HPV vaccine among urban women.

## MATERIALS AND METHODS

This cross-sectional interview-based descriptive study was conducted using convenience sampling on married urban women with at least one living child. After explaining the purpose of the study to prospective respondents, their informed consent was obtained. A pre-tested and pre-validated questionnaire was used for interviewing the women who were willing to participate in the study. The data were entered in Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, WA, USA) and analyzed using SPSS statistical software Windows Version 25.0 (IBM Corporation, Armonk, NY, USA). For discrete data, the percentage of responses and the standard error of difference between two sample proportions were calculated. For continuous data, the standard error of difference between two means was calculated. 95% Confidence interval (CI) was stated as: [Mean-(1.96)\*Standard Error] - [Mean+(1.96)\*Standard Error]. The statistical significance was determined at  $p < 0.05$ .

## RESULTS AND DISCUSSION

In all there were 568 respondents.

**Demographics:** The mean age of respondents was 26.79 +/- 6.51 years (95% CI: 26.25–27.32 years). They were married since 6.30 +/- 7.19 years (95% CI: 5.71–6.89 years). The mean age at the time of first sexual intercourse was 20.82 +/- 2.91 years (95% CI: 20.58–21.06 years). The mean parity of respondents was 1.80 +/- 1.01 (95% CI: 1.71–1.88), with 1.02 +/- 0.87 (95% CI: 0.95–1.09) living female children and 0.75 +/- 0.79 (95% CI: 0.69–0.82) living male children. 75.70% were Hindus, 74.29% lived in slums, 93.48% were homemakers and the self-reported monthly family income was between Rs. 10,000 and Rs. 20,000 for 42.78% of respondents. The educational attainment of

20.07% of respondents was 12<sup>th</sup> standard or higher. In a Delhi-based study<sup>[23]</sup> wherein 74.44% of the surveyed women were highly educated, 85% were aware of cervical cancer but only 32.4% considered it to be sexually transmitted, implying that educational attainment does not automatically translate into awareness of transmission of cervical cancer. Parental literacy has been associated with knowledge of cervical cancer and HPV infection amongst women.<sup>[24]</sup>

## Responses

Though 477 (83.98%) opined that the minimum age at marriage for females should be >20 years, only 44 (07.75%) were aware of problems due to early sexual intercourse. Only 36 (06.34%) of respondents were aware of cervical cancer, for whom the sources of information were health care personnel (13.89%), family and friends (27.78%) and the media (58.33%). A multi-city Indian survey reported that 23.8% of females were aware of cervical cancer, 28% knew about HPV and 23.8% knew that HPV was sexually transmitted.<sup>[25]</sup> According to the findings of a multi-city study<sup>[26]</sup> conducted in Tamil Nadu, a woman aged 25 years or less, has 2.4 times higher likelihood of knowing about the signs and symptoms of cervical cancer, as compared to a woman aged >25 years. Studies conducted in South-East Asian countries have reported low level of knowledge of sexually transmitted infections and HPV.<sup>[27,28]</sup> Low-level of HPV-related knowledge was also found in a study conducted in the United States.<sup>[29]</sup>

Four respondents (00.70%) revealed a family history of cervical cancer. 08 (01.41%) had discussed the disease with friends and neighbours. 24 (04.23%) were aware of availability of a vaccine to prevent cervical cancer but none of the respondents had taken the vaccine. A study<sup>[23]</sup> found that 59.8% of respondents had never heard about vaccine against cervical cancer and that 59 participants were unwilling to undergo free cervical cancer screening due to social stigma (27.1%), procedure being invasive (22.1%), and the belief that they cannot be affected by HPV (18.6%). 304 (53.52%) were willing to vaccinate their daughters. 201 women were not willing because they did not have a daughter, while 63 opined that their daughters will decide about vaccination when they grow up. In a Delhi-based study,<sup>[23]</sup> concern about post-vaccination complications was among the reasons given by 38.17% participants who were against HPV vaccination since it was a new vaccine.

In the present study, all the respondents (100%) felt that health care personnel can help create awareness on cervical cancer. Additional measures suggested for creating awareness were parental counselling (31.51%) and use of media (28.87%).

## CONCLUSION

The study revealed low levels of awareness of cervical cancer and human papilloma virus vaccine and none of the respondents had taken the vaccine. Awareness

campaigns should inform the facts without causing panic among women because of the social ramifications of HPV infections that are mainly sexually transmitted with possible long-term latency. Endorsement of screening programmes and HPV vaccination by celebrities can considerably change the perspectives of the population at risk.

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