

## AWARENESS OF CERVICAL CANCER AMONG ADULT FEMALES IN THE URBAN RESETTLEMENT AREA OF GAUTAM BUDDH NAGAR DISTRICT: A CROSS-SECTIONAL STUDY

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### ABSTRACT

**Background:** Cervical cancer is the fourth most common cancer in women globally with around 660 000 new cases and around 350 000 deaths in 2022. More than 80% of instances of cervical cancer in India are caused by the high-risk HPV strains HPV 16 and HPV 18. Early marriage, having multiple sexual partners, having numerous pregnancies, poor genital cleanliness, starvation, using oral contraceptives, and ignorance are epidemiological risk factors. Awareness about the same is lacking in women of different strata. So this study was planned to evaluate the level of awareness and knowledge about cervical cancer, HPV infection, and preventive measures among female adults in the urban area. **Materials and Methods:** A cross sectional study was conducted in urban resettlement colony of Gautam Buddha Nagar District including 454 females above 18 years of age during June to September 2024 using simple random sampling aiming to explore their knowledge regarding cervical cancer, screening, and preventive measures through a questionnaire and descriptive data analysis. **Result:** The study revealed that only 42% of the adult female population was aware of cervical cancer, while about 95% were not aware of the HPV vaccine and the appropriate age for vaccination. Additionally, only 11% of the participants were aware of cervical cancer screening. The report also highlighted the reliance on the internet as a major source of information and the lack of knowledge about symptoms and risk factors. **Conclusion:** The report concludes by underscoring the pressing need for educational interventions to enhance awareness and knowledge regarding cervical cancer, HPV infection, and preventive measures amongst the study population.

## INTRODUCTION

Cervical cancer is the fourth most common cancer in women globally with around 660 000 new cases and around 350 000 deaths in 2022.<sup>[1]</sup> The highest rates of cervical cancer incidence and mortality are in low- and middle-income countries. This reflects major inequities driven by lack of access to national HPV vaccination, cervical screening, treatment services, social and economic determinants. The main cause of cervical cancer is infection with certain high-risk strains of the human papillomavirus (HPV). More than 80% of instances of cervical cancer in India are caused by the high-risk HPV strains HPV 16 and HPV 18.<sup>[2,3]</sup> Early marriage, having multiple sexual partners, having numerous pregnancies, poor genital

cleanliness, starvation, using oral contraceptives, and ignorance are the other epidemiological risk factors.<sup>[2,3]</sup> The symptoms are very variable including heavy bleeding, dyspareunia, weight loss etc. Regarding vaccination women typically know very little about immunization procedures and the cervical cancer vaccine. The human papillomavirus (HPV) vaccination guards against a few types of cancer. Common sexually transmitted infections (STI) HPV can cause malignancies of the vagina, vulva, penis, anus, and throat in addition to cervical cancer. Additionally, immunization can guard against genital warts. Ages 9 to 45 are the recommended range for HPV vaccination.<sup>[4]</sup> There are currently a variety of methods available to prevent cervical cancer, including screening and immunization. It was

discovered that these tactics were economical in lowering cervical cancer-related morbidity and death.<sup>[5]</sup> Awareness about the same is lacking in women of different strata in our area. So this study was planned to evaluate the level of awareness and knowledge about cervical cancer, HPV infection, and preventive measures among female adults in the urban resettlement colony of Gautam Buddh Nagar District.

## MATERIALS AND METHODS

The methodology of the study involved a cross-sectional approach, encompassing 454 females above 18 years of age in an urban resettlement area during June to September 2024. The research aimed to explore the knowledge of the participants regarding cervical cancer, including risk factors, screening, and preventive measures, through the utilization of a semi-structured questionnaire. The sample size was calculated using the formula,  $\text{Sample size} = 4 * P * Q / D^2$ , where P represented the awareness percentage as 61 %, <sup>[6]</sup> Q was the complement of P, and D was the absolute error taken as 5 percent. The study aimed to achieve a sample size of 454, including a 20% non-response rate. The area had 8 colonies, so we used population proportion to size (PPS) using simple random sampling to select the study participants. The inclusion criteria for the study encompassed all women above 18 years of age, while the exclusion criteria included those who did not provide consent and those who were not mentally sound. This data collection method facilitated the analysis of various factors such as awareness of screening methods, risk factors, and preventive measures, providing a comprehensive understanding

of the knowledge levels within the studied population. Descriptive analysis of the collected data was conducted to derive insights into the awareness and understanding of cervical cancer among the study subjects. Microsoft Excel and IBM SPSS were used for analysis.

## RESULTS

**Socio-Demographic Details:** The socio-demographic profile of the study participants revealed a predominantly young adult female population. Most of the participants (50.4%) were between the ages of 18-30, followed by those aged 31-45 (35.2%), 46-60 (11.7%), and 61-75 (2.6%). Most of the study participants (93%) identified as Hindu, followed by a smaller proportion (6.8%) who identified as Muslim. The marital status distribution showed that 80% of the women were married, 17.2% were unmarried, and 2.8% were either divorced, separated, or widowed. In terms of family structure, most individuals lived in nuclear families (63.7%), followed by joint families (24.2%) and three-generation families (12.1%). Occupationally, most women were homemakers (70.8%), with a significant portion being unemployed (13%) and a smaller percentage being semi-skilled (9.6%), skilled (5.06%), or semi-professional (1.54%). The educational level of the participants varied, with a notable percentage being illiterate (26.6%) and a significant portion educated up to high school (35%). The socio-economic status of the participants was predominantly lower middle (39.6%) and upper lower (54%), with a smaller percentage in the upper middle category (6.4%).

**Table 1: Table representing distribution of study subjects according to socio demographic profile (N=454)**

Age Group(years)	Frequency	Percentage
18-30	229	50.4%
31-45	160	35.2%
46-60	53	11.7%
61-75	12	2.6%
Total	454	100.0%
Religion		
Hindu	422	93%
Muslim	31	6.8%
Others	1	0.2%
Total	454	100%
Marital Status		
Married	363	80.0%
Unmarried	78	17.2%
Divorced/Separated/Widowed	13	2.8%
Type of family		
Nuclear	289	63.7%
Joint family	110	24.2%
3 -generation family	55	12.1%
Occupation		
Homemaker	321	70.8%
Unemployed	59	13%
Semi-skilled	44	9.6%
Skilled	23	5.06%
Semi professional	7	1.54%
Education		
Illiterate	121	26.6%
Just Literate	20	4.4%

Primary	16	3.5%
Middle School	24	5.2%
High school	159	35%
Intermediate	80	17.6%
Graduate	24	5.2%
Socioeconomic status*		
Upper Middle	29	6.4%
Lower Middle	180	39.6%
Upper Lower	245	54%

\*According to modified BG Prasad Scale 2023

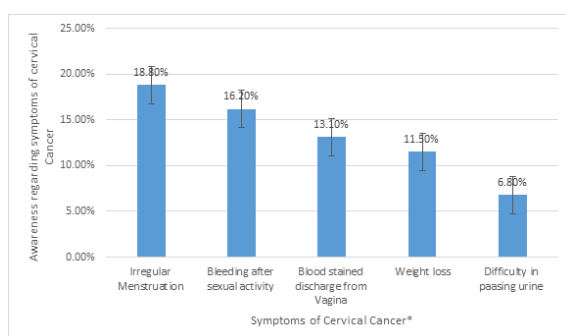
**Awareness of cervical cancer:** The findings were concerning, as they indicated a significant knowledge gap regarding cervical cancer and related preventive measures within the adult female population. Only 42% (191 individuals) of the participants were aware of cervical cancer, suggesting that a majority of the women in the study area lacked basic knowledge about the disease as seen in table number 2. The study delved into the sources of information that study

subjects relied upon to gather knowledge about cervical cancer and HPV. The findings revealed that among the participants who were aware of cervical cancer (191 individuals), internet was the most prominent source as 56%, followed by healthcare providers (46%) and personal networks family and friends being 30% and education institute constitute only 11 % and TV /radio merely 6.8%.

**Table 2: Table representing awareness about cervical cancer among the study subjects (N=454).**

	Yes (percentage)	No (percentage)
Awareness of cervical cancer among the study subjects	191(42.3%)	263(57.9%)
Awareness about cervical cancer screening among study subjects(n=191)		
Have you heard of Screening for cervical cancer?	50(26.2%)	141(73.8%)
Have you heard of PAP test?	40(21%)	151(79%)
Have you heard of other tests for screening of cervical cancer?	4(2%)	187(98%)
Awareness regarding HPV vaccine among study subjects (n=191)		
Have Your Heard about HPV vaccine?	20(10.5%)	171(89.5%)
n=20		
Awareness regarding correct age of HPV Vaccination	6(30%)	14(70%)
Awareness regarding correct dose of HPV Vaccination	5(25%)	15(75%)

The study assessed the awareness of study subjects regarding the symptoms of cervical cancer. Among the participants who were aware of cervical cancer (191 individuals), the findings indicated varying levels of knowledge about the symptoms. The awareness levels regarding specific symptoms are depicted in [Figure 1].

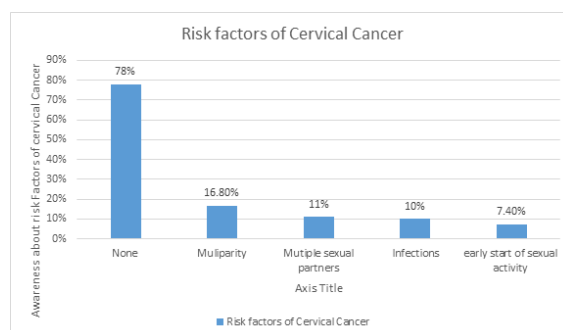


**Figure 1: Figure representing the awareness about symptoms of cervical cancer among the study subjects (n=191)**

\*Multiple responses

Among the study subjects who were aware of preventive measures for cervical cancer and HPV infection (191 individuals), good genital hygiene came out to be 78 % as a preventive measure followed by use of condoms (10.4%) and 13 % of the study subjects didn't know any of the preventive

measures .Hardly 6.6% said that there is a vaccine to prevent cancer .These data reflect the varying levels of awareness among the study participants regarding different preventive measures for cervical cancer and HPV infection. The data underscores the importance of enhancing knowledge and understanding of all preventive measures to effectively combat these health concerns. Figure 2 represents the awareness about the risk factors for cervical cancer. A major chunk, 78% didn't know about the risk factors. Only 18 % said that multiparty and multiple sexual partner (11%) can be one of the cause as seen in [Figure 2].



**Figure 2: Figure representing awareness regarding risk factors of cervical cancer among study subjects (N=191)**

\*Multiple responses

The awareness of the study subjects regarding HPV vaccine was also low. Out of the total 191

participants, only 10.5% (20 individuals) had heard about the HPV vaccine, while the majority, 89.5% (171 individuals), had not heard about it. Hardly 30% of the study population know the correct age of giving the vaccine, rest of them either don't know or had incorrect information. When asked if they knew where to get the HPV vaccine, only 8.9% (17 individuals) responded positively, with 75.4% (144 individuals) indicating they did not know where to obtain the vaccine. Additionally, only 1% (2 individuals) reported that they or their family members had been vaccinated against HPV, while the majority, 90.6% (173 individuals), had not received the vaccine. This data highlights a significant gap in awareness and uptake of the HPV vaccine among the study subjects.

## DISCUSSION

We conducted a cross sectional study on 454 females above 18 years of age with the aim to explore the participants' awareness regarding cervical cancer, including risk factors, screening, and preventive measures, through a questionnaire. About 50 percent of the participants belonged to 18-30 age group and 70 % of them were home makers. Only 35 % were high school pass similar to the findings of Reichheld,<sup>[7]</sup> Sain et al,<sup>[8]</sup> Ritu Yadav,<sup>[9]</sup> and Chanadana.<sup>[11]</sup> In our study we found that only 42.1% of the study subjects had ever heard of cervical cancer which is similar to the study done by Kadian L,<sup>[6]</sup> Suman et al,<sup>[13]</sup> Neha Taneja,<sup>[14]</sup> and more in comparison to the studies done by Chandrika, K,<sup>[15]</sup> Reichheld A,<sup>[7]</sup> Bathija GV,<sup>[10]</sup> Hombaiah Chandana,<sup>[11]</sup> Srivastava AN,<sup>[12]</sup> and very less in comparison to Ritu Yadav,<sup>[9]</sup> Cunningham MS,<sup>[16]</sup> Abd Manap,<sup>[17]</sup> Sneha.<sup>[20]</sup> This low level of awareness is a critical issue, as it implies that many women may be unaware of the risk factors, symptoms, and screening methods for cervical cancer, which could lead to delayed diagnosis and treatment. The findings revealed that among the participants who were aware of cervical cancer (191 individuals), internet was the most prominent source as 56%, followed by healthcare providers (46%) and personal networks family and friends being 30% and education institute constitute only 11 % and TV /radio merely 6.8%. These findings are very much different from the studies done in South India and Haryana.<sup>[7,9]</sup> The timings of conduction of study plays a major role in these differences. When asked about the symptoms of cervical cancer, the most common response came out to be irregular menstruation followed by bleeding after sexual activity and blood stained discharge from vagina these responses matches with the findings of study done in 2020,<sup>[7,11]</sup> and 2021,<sup>[6]</sup> and less in comparison to study done in 2024.<sup>[9]</sup> This highlights the need for increased education and awareness campaigns to ensure that individuals recognize the various symptoms associated with cervical cancer and seek timely medical attention for early detection

and treatment. The preventive measures came out to be Good genital hygiene (78%), use of condoms (10.4%) followed by PAP test 4.7% and vaccine (3.6%). About 13.4 percent had no clue how to prevent this particular disease that matches with the findings of Reichheld.<sup>[7]</sup>

When asked about the Awareness regarding HPV vaccine, out of those 42 % who have ever heard of cervical cancer, merely 10 percent of those have known or heard about HPV Vaccine which is very less in comparison to Kadian.<sup>[6]</sup> When asked if they knew where to get the HPV vaccine, only 8.9% (17 individuals) responded positively, with 75.4% (144 individuals) indicating they did not know where to obtain the vaccine. Hardly 30% of the study population know the correct age of giving the vaccine, rest of them either don't know or had incorrect information. Additionally, only 1% (2 individuals) reported that they or their family members had been vaccinated against HPV, while the majority, 90.6% (173 individuals), had not received the vaccine. This data highlights a significant gap in awareness and uptake of the HPV vaccine among the study subjects.

## CONCLUSION

In our study a significant knowledge gap regarding cervical cancer and related preventive measures within the adult female population was found. Only 42% of the participants were aware of cervical cancer, suggesting that a majority of the women in the study area lacked basic knowledge about the disease. The data suggests that while some participants were aware of common symptoms like irregular menstruation and bleeding after sexual activity, there were gaps in knowledge about other important signs of cervical cancer. The data underscores the importance of leveraging multiple channels to disseminate accurate and comprehensive information about cervical cancer and HPV to enhance awareness and promote preventive measures among the population.

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