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**Original Research Article**

# Awareness and screening practices of cervical cancer among nursing staff working in tertiary care hospital

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## ABSTRACT

**Background:** In India there are an estimated of 1,32,000 new cases and 74,000 deaths each year of cervical cancer. Out of all the female genital tract cancers, it is the only preventable cancer if detected at its early stages. More than one fifth of all new cases are diagnosed in India due to a lack of screening that allows detection of precancerous and early stage cervical cancer. Staff nurses if trained properly, can make aware and screen all the women coming to detect suspicious cases. The present study was carried to assess knowledge regarding cervical cancer, screening procedures and attitude and practices regarding prevention and screening of cervical cancer among nursing staff.
**Methods:** A cross-sectional study was carried out among the nursing staff between March to June 2016. A total of 215 nursing staff was enrolled in the study.
**Results:** Majority 75 (34.88%) of the participants were from 41-50 years of age and 147 (67.90%) were married. The majority of the participants received information about cervical cancer and screening from hospital 135 (71.05%) and 40 (21.05%) from the newspaper. Majority of females 68 (35.78%) said HPV infection as major risk factor for cervical cancer. Majority of the females 125 (65.78%) mentioned that discharge p/v is the main symptom. Majority of the participants 66 (38.82%) replied that married Women and sexually active 54 (31.76%) women must be screened.
**Conclusions:** It can be concluded that presently the knowledge and understanding of cervical cancer, as well as its screening process, is satisfactory, but there is a vast scope for improvement.

**Keywords:** Cervical, Cancer, Screening, Pap smear, Nurses

## INTRODUCTION

According to the International Agency for research on cancer (IARC), in India there are an estimated of 1,32,000 new cases and 74,000 deaths each year due to cervical cancer. Sexually transmitted infection with human papilloma virus (HPV) is fundamental to the development of cancer of the cervix. HPV prevalence increases with multiple sexual partners and poor genital hygiene. Cervical cancer is a deadly disease once it reaches the invasive stages, but out of all the female genital tract cancers, it is the only preventable cancer if detected at its early stages.[1,2] Almost 70% of the global burden falls in areas with lower levels of development and more than one fifth of all new cases are diagnosed in India. Cervical cancer has devastating effects with a very high human, social, and economic cost, affecting women in their prime.[3,4]

The disproportionately high burden of cervical cancer in developing countries is largely due to a lack of screening that allows detection of precancerous and early stage cervical cancer. The most efficient and cost-effective

screening techniques include visual inspection using either acetic acid or Lugol's iodine and DNA testing for human papilloma virus (HPV) DNA in cervical cell samples. A recent clinical trial in rural India found that a single round of HPV DNA testing was associated with about a 50% reduction in the risk of developing advanced cervical cancer and associated deaths.[5-7]

In absence of the organized screening program, routine screening of asymptomatic women is almost non-existent in India. In the public sector, the facilities for Pap smears are mostly limited to the tertiary care centres where the test is usually offered to women with symptoms of reproductive tract infections or advanced cervical cancer.[8,9] The only available activity has been to use opportunistic screening of those women who come to the health units for other reasons. Screening the women then becomes the responsibility of the medical worker who should know those eligible. Studies have shown that primary health nurses can be trained to screen women for cervical cancer.[10]

As the doctor to patient ratio is low in India i.e., 1:2000 according to MCI (Press information bureau, GOI M of HFW, Nov 2011), staff nurses if trained properly, can make aware and screen all the women coming to hospital for any of their problems, by Pap smear examination or at least by VIA like methods, to detect suspicious cases.[11] The screening coverage in India is 2.6-5%.[12] Nurses can provide health promotion counseling to the patients they serve in their day-to-day practice. They can fulfill a key role in health promotion and disease prevention, and they are in an ideal position to provide health education to young girls and women. It is necessary to make the nursing staff aware about cervical cancer, who can impart knowledge regarding cervical cancer and its prevention to the general public.[1]

The present study was carried out among the nursing staff of a tertiary health institute to assess their knowledge regarding cervical cancer and various screening procedures as they are important health personnel who can educate and sensitize women on the need for cervical cancer screening.

### *Aim and objectives*

1. To assess the knowledge among nursing staff about cervical cancer symptoms, risk factors, prevention and screening.
2. To find out the attitude and practices of nursing staff regarding prevention and screening of cervical cancer.

## METHODS

A cross-sectional study was carried out among the nursing staff of a tertiary care health institute in Aurangabad, India. The duration of the study was from March to June 2016. A total of 430 nursing staff was enrolled in the institute at the time of the study. 50% of the staff was randomly selected using a table of random numbers after department-wise stratification. The calculated sample size was 215. Verbal-informed consent was sought from the study subjects. A 31-item structured questionnaire was designed. However, provision for inclusion of open-ended responses was also made in the format. The selected nurses were interviewed by the investigator for seeking information about the socio-demographic profile, their knowledge about symptoms, risk factors and prevention, their attitude and practices regarding Pap smear as a screening device for cancer cervix.

### *Inclusion criteria*

The study population comprised of female nursing staff only those who are permanent employee of the institute and those gave consent of participation.

***Exclusion criteria:*** None

### *Statistical analysis*

The data was entered into MS Excel software was used to compute frequency and descriptive statistics related to demographic data. Proportion and Chi square was applied for the analysis and interpretation was taken. A p value of $<0.05$ was considered statistically significant.

## RESULTS

Table 1 shows that majority 75 (34.88%) of the participants were from 41-50 years of age group and total 189 (88%) were above the age of 30 years. 147 (67.90%) participants were married while 69 (32.10%) were unmarried. A total of 125 (58.13%) females has completed their post-graduation. 73 (50%) females were multiparous, 38 (26.02%) had one child and 35 (23.97%) were nulliparous. Majority of the participants 88 (40.92%) had used OCP, 41 (19.06%) participants had used IUCD and ligation methods each for contraception, while 54 (25.11%) participants though eligible have never used any of the methods (Table 1).

In the present study, the majority of the participants received information about cervical cancer from various contact points in hospital 135 (71.05%), 40 (21.05%) from the newspaper, radio 34 (17.89%) and from friends 26 (13.68%). Majority of females 68 (35.78%) said HPV infection as major risk factor for cervical cancer, 46 (24.21%) said STD, 36 (18.94%) gave multiple partners to be the risk factor and 15 (7.89%) said that early coitus is a risk factor. Majority of the females 125 (65.78%) mentioned that discharge p/v is the main symptom of cervical cancer, while 118 (65.78%) females gave postmenopausal bleeding, 104 (54.73%) postcoital bleeding, 85 (44.73%) said palpable mass and 64 (33.68%) females said that pain and menstrual cycle related complaints are symptoms denoting cervical cancer (Table 2).

**Table 1: Socio-demographic characteristics of study population (n=215).**

| Characteristics | | Participants | % |
|---|---|---|---|
| **Age (years)** | 20-30 | 26 | 12.09 |
| | 31-40 | 71 | 33.02 |
| | 41-50 | 75 | 34.88 |
| | 51-60 | 43 | 20 |
| **Marital status** | Married | 146 | 67.90 |
| | Unmarried | 69 | 32.10 |
| **Education** | Undergraduate | 125 | 58.13 |
| | Postgraduate | 90 | 41.86 |
| **Parity N=146** | Nullipara | 35 | 23.97 |
| | One child | 38 | 26.02 |
| | Multipara | 73 | 50.0 |
| **Contraception (multiple responses)** | OCP | 88 | 40.93 |
| | None | 54 | 25.11 |
| | IUCD | 41 | 19.06 |
| | Sterilization | 41 | 19.06 |
| | Barrier | 37 | 17.20 |

**Table 2: Responses related to awareness of cervical cancer (n=190).***

| Variables | | Participants | % |
|---|---|---|---|
| **Source of information** | Hospital | 135 | 71.05 |
| | Newspaper | 40 | 21.05 |
| | Radio/TV | 34 | 17.89 |
| | Others | 28 | 14.73 |
| | Friend | 26 | 13.68 |
| **Risk factors** | HPV | 68 | 35.78 |
| | STD | 46 | 24.21 |
| | Multiple partner | 36 | 18.94 |
| | Don't know | 25 | 13.15 |
| | Early coitus | 15 | 7.89 |
| **Symptoms** | Discharge p/v | 125 | 65.78 |
| | Postmenopausal bleeding | 118 | 62.10 |
| | Postcoital bleeding | 104 | 54.73 |
| | Mass | 85 | 44.73 |
| | Pain | 64 | 33.68 |
| | Menstrual complaints | 64 | 33.68 |
| | No symptom | 15 | 7.89 |

***** Number of participants who were aware of cervical cancer screening.

**Table 3: Responses related to cervical cancer screening (n=170).***

| Variables | | Participants | % |
|---|---|---|---|
| **Source of information** | Hospital | 119 | 70 |
| | Radio/TV | 25 | 14.70 |
| | Friend | 12 | 7.05 |
| | Newspaper | 9 | 5.29 |
| | Internet | 3 | 1.76 |
| | Others | 27 | 15.88 |
| **Who should be screened** | Married | 66 | 38.82 |
| | Sexually active | 54 | 31.76 |
| | >30 years | 29 | 17.05 |
| | Don't know | 25 | 14.70 |
| **Other screening methods** | Biopsy | 88 | 51.76 |

| | | | |
|---|---|---|---|
| | HPV | 42 | 24.70 |
| | VIA | 37 | 21.76 |
| | Don't know | 24 | 14.11 |
| **Did not perceived any need / Not advised by Doctor** | Embarrassing | 64 | 37.64 |
| | Cost factor | 25 | 14.70 |
| | Not indicated | 20 | 11.76 |
| | Not aware of facility | 83 | 48.82 |

*Number of participants who were aware of Pap smear as a screening method.

**Table 4: Knowledge and practice regarding Pap test.**

| Knowledge about Pap test as screening test for cancer cervix | Underwent Pap test | | Total |
|---|---|---|---|
| | **Yes, n (%)** | **No, n (%)** | **n (%)** |
| **Present** | 10 (5.88) | 160 (94.11) | 170 (79.06) |
| **Absent** | 2 (4.44) | 43 (95.55) | 45 (20.93) |
| **Total** | 12 (5.58) | 203 (94.41) | 215 |

$\chi 2$ - 0.14 p=0.70

In the present study, the majority of the participants 119 (70%) received information about cervical cancer screening from various contact points in hospital, other sources were radio/TV 25 (14.70%), friends 12 (7.05%) and newspapers 9 (5.29%). Majority of the participants 66 (38.82%) replied that married Women must be screened, others whom should be screened were sexually active 54 (31.76%), more than 30 years of age Women 29 (17.05%) and 25 (14.70%) had no knowledge. 88 (51.76%) women replied that cervical biopsy is another method of screening for cervical cancer other than PAP smear, other methods stated were HPV screening 42 (24.70%) and VIA by 37 (21.76%). The responses for not being self-screened were as follows, felt embarrassing 64 (37.64%), 25 (14.70%) and 20 (11.76%) said that screening is not needed or not indicated (Table 3).

A total of 170 (79.06%) participants had knowledge about Pap test as screening test for cancer cervix out of which 10 (5.88%) underwent Pap test. The difference was not statistically significant (Table 4).

## DISCUSSION

The present cross-sectional study was carried out among the nursing staff of a tertiary care health institute in Aurangabad, India. A 31-item structured questionnaire was designed. The selected nurses were interviewed by the investigator for seeking information about the socio-demographic profile, their knowledge about symptoms, risk factors and prevention, their attitude and practices regarding Pap smear as a screening device for cancer cervix.

In the present study, majority 75 (34.88%) of the participants were from 41-50 years of age group and total 189 (88%) were above the age of 30 years. Majority 147 (67.90%) of the participants were married while 69 (32.10%) were unmarried. A total of 125 (58.13%) females has completed their post graduation. 73 (50%) females were multiparous, 38 (26.02%) had one child and 35 (23.97%) were nulliparous. Majority of the participants 88 (40.92%) had used OCP, 41 (19.06%) participants had used IUCD and ligation methods each for contraception, while 54 (25.11%) participants though eligible have never used any of the methods of contraception.

These findings are similar to a study by Abiodun et al where they interviewed a total of 2,000 women, their ages ranged from 20 to 64 years with an average age of 32.7±10.6 years. Married women constituted 76.3% while 19.5% were single. Modern contraceptive use rate was 21.9% with 45.2% of users using Injectable contraception, 15.8% using oral pills and 14.95% using the male condoms.[13] Similarly, in a study by Devi et al, the age group of 31-40 years formed the largest 32%. 93% of the participants were married and about 47.6% had undergone tubectomy.[11]

In the present study, the majority of the participants received information about cervical cancer from various contact points in hospital 135 (71.05%), 40 (21.05%) from the newspaper, radio 34 (17.89%) and from friends 26 (13.68%). Majority of females 68 (35.78%) said HPV infection as major risk factor for cervical cancer, 46 (24.21%) said STD, 36 (18.94%) gave multiple partners to be the risk factor and 15 (7.89%) said that early coitus is the risk factor. Majority of the females 125 (65.78%) mentioned that discharge p/v is the main symptom of cervical cancer, while 118 (65.78%) females gave postmenopausal bleeding, 104 (54.73%) postcoital bleeding, 85 (44.73%) said palpable mass and 64 (33.68%) females said that pain and menstrual cycle related complaints are symptoms denoting cervical cancer.

In a study by Gupta et al they found that about 20% of the participants were not aware of cervical cancer as a disease.[9] While in a study by Gebrie among nursing staff it was revealed that the source of information regarding cervical cancer was regular courses in nursing (75.4%)

followed by health professionals/work/colleague (47.0%), books/magazines (40%), radio/television (30.8%), training (20%), and friends/relatives (14.6%). Regarding the respondents' knowledge of the main symptoms of cervical cancer, 51.2% respondents mentioned bleeding after intercourse, 48.1% pain during sexual intercourse, 41.5% offensive vaginal discharge, 37.3% abnormal bleeding between periods while 13.1% of the respondents stated that cervical cancer has no symptoms.[14] Similar findings were noted by Shah et al. [1]

In a study by Shekhar et al, 77% respondents knew that Pap smear is used for detection of cervical cancer. Only 23.4% knew human papilloma virus infection as a risk factor. Only 17 (7%) of the staff nurses had themselves been screened by Pap smear, while 85% had never taken a Pap smear of a patient.[15] Similar findings were noted by Rahman et al in a study amongst nurses.[16] While in a study by Thippeveeranna participants (98.6%) had heard about cervical cancer. Knowledge about the Pap smear was adequate in 88.8% of the respondents.[17] Similarly, in a study by Devi et al, of all the respondents, only 82% knew that cancer cervix is curable if detected early and 86% knew that Pap smear can detect cancer, where as only 70% knew that it can even detect precancerous lesions of the cervix. About 76% knew that it can present as post menopausal bleeding or irregular bleeding, but only 56% knew that it can even present as post coital bleeding. The risk factors like starting sex at an early age, having many sexual partners and multiparity were known to 60-70% of the respondents.[11]

In the present study, the majority of the participants 119 (70%) received information about cervical cancer screening from various contact points in hospital, other sources were radio/TV 25 (14.70%), friends 12 (7.05%) and newspapers 9 (5.29%). Majority of the participants 66 (38.82%) replied that married Women must be screened, others whom should be screened were sexually active 54 (31.76%), more than 30 years of age Women 29 (17.05%) and 25 (14.70%) had no knowledge. 88 (51.76%) women replied that cervical biopsy is another method of screening for cervical cancer other than PAP smear, other methods stated were HPV screening 42 (24.70%) and VIA by 37 (21.76%). The responses for not being self-screened were as follows, felt embarrassing 64 (37.64%), 25 (14.70%) and 20 (11.76%) said that screening is not needed or not indicated.

In a study by Gupta et al found that 19% knew that Pap smear is used for detection of pre-invasive cervical cancer and 30% of the respondents knew about HPV vaccine.[9] Similarly, in a study by Abiodun et al 74 (3.7%) of the women knew that cervical screening should be done at regular intervals while 95.3% had no idea at all. The major barrier to cervical screening was lack of awareness 95.5%, lack of interest (1.8%), lack of access to screening services (0.8%), cost (0.8%) and poor quality of services (0.5%).[13] Mutyaba found that 93% considered cancer of the cervix a public health problem and knowledge about Pap smear was 83% among respondents.[10] Similar findings were noted by Devi et al (2014).[11]

In the present study, a total of 170 (79.06%) participants had knowledge about PAP test as a screening test for cancer cervix out of which 10 (5.88%) underwent PAP test. The difference was not statistically significant. In a study by Shah et al, knowledge regarding Pap test was present in 88.4% of respondents.[1] Similar findings were documented in a study carried out by Owoeye Pap smear was the most popular screening test mentioned by respondents 100 (41.2%), while some respondents (8.5% of staff and 16.3% of students) wrongly believed that blood test is used for cervical cancer screening. There is a significant association between awareness and practice of cervical cancer screening amongst staff and students ($X^2$=29.4, p=0.00) and similarly in a study by Devi et al the attitudes about Pap smear screening showed that about 70% of the staff nurses thought that Pap smear testing is a doctor's procedure.[18] About 43.8% respondents stated that they did not get Pap smear because they had no symptom, while 15.34% stated that they feel shy to get screened and 16.2% stated that they were afraid of the possible outcome ($p<0.05$).[11]

## CONCLUSION

It can be concluded that presently the knowledge and understanding of cervical cancer, as well as its screening process, is satisfactory, but there is a vast scope for improvement. Most of the eligible participants did not get themselves screened which shows their negative attitude. Nursing staff, if properly aware of this disease, can educate the masses and hence increase health-seeking behaviour in women.

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## REFERENCES

1. Shah V, Vyas S, Singh A, Shrivastava M. Awareness and knowledge of cervical cancer and its prevention among the nursing staff of a tertiary health institute in Ahmedabad, Gujarat, India. Ecancermedicalscience. 2012;6(270):1-6.
2. Jemal A, Bray F, Melissa M, Ferlay J, Ward E, Forman D. Global Cancer Statistics. CA Cancer J Clin. 2011;61:69–90.
3. GLOBOCAN 2012. Latest world cancer statistics. The International agency for research on cancer, World Health Organization; 2013.
4. Singh GK, Azuine RE, Siahpush M. Global inequalities in cervical cancer incidence and mortality are linked to deprivation, low socioeconomic status, and human development. Int J MCH AIDS. 2012;1(1):17-30.

5. Gakidou E, Nordhagen S, Obermeyer Z. Coverage of cervical cancer screening in 57 countries: Low average levels and large inequalities. PLoS Med. 2008;5(6):e132.
6. Goldie SJ, Gaffikin L, Jeremy D, Goldhaber-Fiebert, Gordillo-Tobar A, Levin C, et al. Cost-effectiveness of cervical-cancer screening in five developing countries for the alliance for cervical cancer prevention cost working group. N Engl J Med. 2005;353:2158-68.
7. Dinshaw KA, Shastri SS, Patil SS. Cancer control programme in India: Challenges for the new millennium. Health Admin. 2001;17(1):10-3.
8. Basu P, Chowdhury D. Cervical cancer screening and HPV vaccination: A comprehensive approach to cervical cancer control. Indian J Med Res. 2009;130(3):241-6.
9. Gupta M, Yadav M, Agarwal N, Arora R. Awareness of cervical cancer screening among paramedical staff and students in an institution of Northern India. Nat J Community Med. 2013;4(2):333-6.
10. Mutyaba T, Mmiro FA, Weiderpass E. Knowledge, attitudes and practices on cervical cancer screening among the medical workers of Mulago Hospital, Uganda. BMC Med Edu. 2006;6:13.
11. Devi SS, Babu VA, Kumari DA. Nursing staff awareness of cervical cancer and pap smear screening in a remote medical college hospital in South India. Int J Res Health Sci. 2014;2(4):1085-90.
12. Awasthy S, Qureshi MA, Kurian B, Leelamoni K. Cervical cancer screening: Current knowledge and practice among women in a rural population of Kerala, India. Indian J Med Res. 2012;136:205-10.
13. Abiodun OA, Fatungase OK, Olu-Abiodun OO, Idowu-Ajiboye BA, Awosile JO. An assessment of Women awareness and knowledge about cervical cancer and screening and the barriers to cervical screening in Ogun State, Nigeria. IOSR J Dental Medl Sci. 2013;10(3):52-8.
14. Gebrie MH, Belete MA, Lemlem SB, Woreta HK. Knowledge, preventive practice and associated factors of female nurses' towards cervical cancer in the selected government hospitals in Addis Ababa, Ethiopia. J Diabetes Metab. 2015;6(7):569.
15. Shekhar S, Sharma C, Thakur S, Raina N. Cervical cancer screening: Knowledge, attitude and practices among nursing staff in a tertiary level teaching institution of rural India. Asian Pac J Cancer Prev. 2013;14(6):3641-5.
16. Hafizur Rahman, Sumit Kar. Knowledge, attitudes and practice toward cervical cancer screening among Sikkimese nursing staff in India. Indian J Med Paediatr Oncol. 2015;36(2):105-10.
17. Thippeveeranna C, Mohan SS, Singh LR, Singh NN. Knowledge, attitude and practice of the Pap smear as a screening procedure among nurses in a tertiary hospital in North Eastern India. Asian Pacific J Cancer Prev. 2013;14 (2):849-52.
18. Owoeye IOG, Ibrahim IA. Knowledge and attitude towards cervical cancer screening among female students and staff in a tertiary institution in the Niger Delta. Int J Med Biomed Res. 2013;2(1):48-56.

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