

Awareness of cervical cancer and its prevention among women attending a tertiary-care hospital in northern Delhi, India

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Background. Awareness of the natural course of cervical cancer, screening and timely intervention can help to reduce morbidity and mortality associated with this disease.

Objective. To assess the awareness about cervical cancer and the uptake of screening among adult women in northern Delhi, India.

Methods. A cross-sectional observational study ($N=401$) was conducted at a tertiary-care teaching hospital over a period of 3 months. A questionnaire was used to collect sociodemographic data and probe participants' awareness of cervical cancer, preventive measures and sources of information. Data were analysed using an independent t -test, with a significance level of $p<0.05$.

Results. The majority of participants (45%) were between 18 and 25 years old. Approximately a third (34%) were illiterate and 39.4% were educated only up to Grade 10. Almost all participants (99%) were married and 85.3% were unemployed. Only 31.9% of participants knew about cervical cancer, and of these only 26 (20.3%) were aware that cervical cancer is a preventable disease. Only 8.5% of the participants knew about Pap smears and only 1.6% had heard about the human papillomavirus vaccine. Participants indicated that health professionals were the main source of information. Only 2.2% of the entire sample reported having had a Pap smear before.

Conclusion. Low awareness of cervical cancer and its prevention was found among the study population. A national education and communication strategy is recommended to improve awareness.

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Carcinoma of the cervix is the most common cancer among women in India and the fourth most common cancer worldwide. The current incidence in India is 30 - 44.9 per 100 000 women, with the incidence in Delhi approximately 19.5 per 100 000 women.^[1,2] The disease is increasing rapidly and is estimated to reach an incidence of 68 per 100 000 in India by the year 2030.^[3]

Cervical cancer is associated with a well-detectable, treatable precancerous lesion and it is a good candidate for screening to reduce the burden of this deadly disease. The Papanicolaou (Pap) test has proven a useful and effective tool to reduce mortality through early diagnosis.^[4,5] In addition, the Pap test is relatively easy to perform, inexpensive and reliable. Despite this, cervical cancer screening coverage in India is only 3.1%.^[6]

This study investigated the awareness of cervical cancer among adult women in northern Delhi, India, and their attitude to and uptake of screening.

Methods

A cross-sectional observational study was conducted over a period of 3 months among women visiting a tertiary-care teaching hospital. According to a similar study among women attending healthcare facilities in Saudi Arabia,^[7] we calculated the required sample size as 401 using the formula $N=Z^2pq/d^2$, where:

N = desired sample size

Z^2 = standard normal deviate; usually set at 1.96, which corresponds to a 95% confidence interval

p = proportion of the target population estimated to have a particular characteristic

q = proportion of the target population without a particular characteristic (i.e. $1-p$)

d = degree of accuracy required, set at 0.1.

Women visiting our department were invited to participate in the study after the nature and purpose of the study had been explained. All interested participants were asked to provide consent to participation.

A questionnaire was used to collect basic sociodemographic information and data about participants' awareness of cervical cancer, its prevention, the Pap test and the human papillomavirus (HPV) vaccine. Questions also probed participants' sources of information, their willingness to undergo screening and barriers to screening. Participants were subsequently also informed about cervical cancer, the importance of screening and available facilities.

Statistical analysis was performed in SPSS (version 15). An independent t -test was used to test differences between the mean knowledge scores across sociodemographic categories such as education, employment and age. A significance level of $p<0.05$ was used.

Ethical approval

The protocol for this study was approved by the institutional ethics committee (ref. no: F5(59)/2017/BSAH/Committees/25/36).

Results

Of the total sample ($N=401$), 45% were between 18 and 25 years old. Approximately a third of the participants were illiterate ($n=136$;

Table 1. Information sources about cervical cancer and screening (N=34)

Information source	n (%)*
Health professional	21 (61.76)
Media	11 (32.35)
Internet	10 (29.14)
Friends and relatives	3 (8.82)
Books	1 (2.94)

*Percentages and numbers add up to more than 100% and 34, respectively, as participants could indicate more than one information source.

33.9%) and just more than a third ($n=158$; 39.4%) were educated to grade-10 level. Most were married ($n=398$; 99.3%) and unemployed ($n=342$; 85.3%).

Overall awareness of cervical cancer among the sample was low: only about a third of the participants ($n=128$; 31.9%) had heard of carcinoma of the cervix, and of these only 26 (20.3%) knew that it is a preventable disease. Only 34 participants across the whole sample (8.5%) knew about Pap smears and only 6 (1.6%) were aware of the HPV vaccine.

Close to two-thirds of the women who were aware of Pap smears ($n/N=21/34$; 61.8%) stated that they obtained information mainly from health professionals. The media and the internet were stated as information sources by 11 (32.3%) and 10 (29.1%) participants, respectively (Table 1; some respondents indicated multiple sources of information).

Uptake of screening was low, with only 9 participants (2.2%) from the total sample reporting to have had a Pap smear before. A screening rate of 17.6% ($n/N=6/34$) was found among participants who knew about cervical cancer. The major barrier to having a Pap smear was reported as a lack of knowledge (95.4%), followed by the absence of symptoms (4.1%).

When participants were informed about cervical cancer and Pap smears, 76.8% of women who had not undergone screening before ($N=392$) were willing to be screened. Among the remainder, the majority ($n=54$; 58.2%) stated that they did not think that they would get the disease. None of the 401 participants had had an HPV vaccination.

Discussion

Early detection is an important step in the prevention of cervical cancer. The success of a screening programme depends on its accessibility, cost and proper service, but awareness and attitude of the community are also important contributing elements.

The Pap smear is the most common test for detecting premalignant dysplasia and early-stage invasion, but it remains underutilised, particularly in developing countries. This situation may be due to a lack of knowledge and awareness to a large extent.

We assessed the awareness of cervical cancer and its screening, together with attitudes to and uptake of screening, among women attending a hospital in northern Delhi. The mean age (and standard deviation) in this study was 28.6 (12.2) years, which is less than the mean age (29.9 - 40 years) reported by a number of other studies.^[7-9] The target population for screening and maintenance of screening is women of reproductive age and older.

We found awareness levels of 31.9%, 8.5% and 1.6% about cervical cancer, Pap smears and the HPV vaccine, respectively. Similar rates have been reported by Singh *et al.*,^[6] Kumar *et al.*^[10] and Shrestha

et al.^[9] However, these rates contrast sharply with those reported in a study performed in London in 1998, where 76% of respondents were aware of cervical cancer being a common disease and 80% had had at least one Pap smear.^[11] This reflects a lower level of both awareness and uptake of screening in developing compared with developed countries.

The lack of knowledge we observed may be due, in part, to inefficient education campaigns and a lack of wide-reaching screening programmes. However, cultural or social barriers may also be contributing factors, as women in India may not be free to discuss or consider important gynaecological issues.

The uptake of Pap smears was extremely low among the women in our study – less than 5%. Similar findings were reported in studies from Mangalore, Rishikesh, Pondicherry and Bhopal.^[12,13] Lack of awareness of a screening test and absence of symptoms were the most common reasons for not undergoing screening.

Our results showed a screening rate of 17.6% among women who were aware of cervical cancer and Pap smears. This highlights the importance of awareness: the rate was considerably higher than that observed among women without knowledge of cervical cancer and Pap smears. Yet, the rate was still low, demonstrating that even women who were aware of the disease did not access screening.

It is also noteworthy that when the nature of cervical cancer and screening was properly explained to the participants, nearly 77% were willing to undergo a Pap smear. This suggests that not only awareness but also proper counselling and motivation are required to ensure an increase in screening.

Health professionals were cited as the main source of information about cervical cancer and screening, followed by the media and the internet. This is similar to findings by Aweke *et al.*,^[14] but contrasts with the observations of Kumar *et al.*,^[10] who found that the media was the most influential source. Promoting awareness of cervical cancer and screening through healthcare professionals and the media is essential for improving the uptake of this potentially life-saving intervention. Although cultural barriers cannot be overcome instantly, a concerted effort is needed to improve the unsatisfactory current screening rate.

Conclusion

Awareness of cervical cancer and its prevention is low and should be addressed to improve the attitude to and uptake of screening. Awareness and motivation are the preconditions required for screening. Notwithstanding the challenges of implementation, policies to improve education and communication about cervical cancer and screening are required nationwide to ensure that all communities benefit from screening.

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