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Original article

Study of Knowledge, Attitude and Practice of Cervical Cancer Screening among the staff nurses at Rural Hospital (Loni)

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ABSTRACT

Background: Cervical cancer is one of the most common cancers among women worldwide. The incidence rate in Indian women between 25 to 44 years is about 3.5%, and age standardised incidence rate is 22 per 1,00,000 women. In rural areas, it is a major health problem, where the disease is diagnosed usually at a late stage. Cervical cancer has a long window for diagnosis, during which the precancerous lesions can be diagnosed by various screening methods. Pap smear is one such method. It is cost effective and can be done easily in an outpatient set-up. For satisfactory implementation of the screening programme for early diagnosis of pre-cancerous lesions, the services of the nursing staff can be utilised to educate and motivate all eligible women of the community to take Pap smear. The present study was conducted to assess the knowledge about cervical cancer and Pap smear practice among the nursing staff of the rural hospital in Maharashtra, India.

Materials and Method: This is a cross-sectional descriptive study performed during 1st December, 2020 and 28th February, 2021. A total of 320 staff nurses participated in the study. A structured questionnaire was given to each of them after obtaining verbal consent. The answered questionnaires were collected for further analysis.

Results: Majority of the participants were between 21 and 35 years of age. 91.56% of the participants were married, 97.19% (N=311) were aware about cervical cancer, while 88.75% (N=284) were aware about Pap smear. Among the 311 respondents, 35.05% knew that Human papillomavirus is a causative agent of cervical cancer, and 33.75% are aware about HPV vaccination. Even though 47.19% of the 284 participants were trained to take Pap smear, 48.51% of those trained had not taken any Pap smear. Among the married group, 37.06% (N= 293) had undergone Pap smear screening themselves.

Conclusion: Though the knowledge about cervical cancer and Pap smear is adequate among the participants, the practice is not satisfactory. The nursing staff need to be encouraged, educated and trained to practice the screening method for themselves and for other women of the community so that the morbidity and mortality from cervical cancer is controlled.

Keywords: cervical cancer, Pap smear, knowledge, practice, nursing staff

INTRODUCTION

Globally, cervical cancer is the fourth most common cancer in women. In 2018, about 5,70,000 women were diagnosed with the disease worldwide, and about 3,11,000 women died [1]. Worldwide, the standardised incidence rate was 13.1 per 1,00,000 women, but it varied

widely among the different countries, ranging between 2 to 7.5 per 1,00,000 women. In India, where cervical cancer is a major health problem, about 97,000 cases were reported with 60,000 deaths [2]; every year, about 1,20,000 new cases occur. The incidence rate in Indian women between 25 to 44 years is about 3.5%, and age standardised incidence rate is 22 per 1,00,000 women. This is greater than Bangladesh and Sri Lanka. It is more prevalent in rural areas than urban areas [3,4].

Cervical cancer is the final stage of the human papilloma virus infection. It takes about ten to fifteen years for the precancerous stage to become invasive cancer. Screening provides the opportunity to diagnose the early precancerous lesion that can be treated easily [5]. The screening coverage in India is low, but there are national guidelines. So, the early detection rate is low, and majority of the patients report at an advanced stage [6]. Pap smear is a reliable screening method, being the oldest tool with a good success rate worldwide [4]. At present, this screening coverage in India is low and limited to mostly opportunistic screening. Data collected for different cancer registries in India show that cervical cancer is still occupying the second position with high risk of mortality [7].

If the national guidelines for screening are followed, then even in low resource settings, the incidence rate of cervical cancers can be reduced. Women of the reproductive age group in developed countries have the screening practice of 82%, while in India, it is only 2.6% for the same group [8]. Also, at present, the doctor population ratio in India is 1:1456 against WHO Recommendation of 1:1000 [9]. So, to implement the screening programme, staff nurses can be inducted in the activity after proper training [10]. Moreover, induction of the large workforce of nursing staff available in India will be advantageous in the present scenario [11]. Excluding the screening programme, they can motivate the women in society by educating them and by training other health workers. For successful implementation of such induction, it is necessary to assess their knowledge, attitude and practice so that the benefits of improvement are solidified through proper training [10,11,12].

The objective of the present study is to assess the knowledge, attitude and practice regarding the screening method for cervical cancer (Pap smear) among the nursing staff working in the teaching hospital of a rural medical college, so that recommendations for improvement at the level of nursing staff involvement can be implemented.

MATERIALS AND METHOD

This is a cross-sectional descriptive study carried out from 1st December 2020 to 28th February 2021. Three hundred and twenty staff nurses working in Rural Hospital, Pravara participated in the study. A questionnaire was constructed based on previous studies [13] and distributed to the selected participants. Upon obtaining verbal consent, the participants were requested to complete responses. The questionnaire was designed to assess: the knowledge about cervical cancer; screening method (Pap smear) for cervical cancer; and practices regarding the screening method.

The data entry was done in Microsoft Excel 2019 with a double data entry check, followed by initial preliminary analysis. The final analysis was done in IBM SPSS Statistics for Windows, Version 21.0, released in 2012, by IBM Corp., Armonk, NY.

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RESULTS

TABLE 1: SOCIO-DEMOGRAPHIC VARIABLES OF THE PARTICIPANTS

CHARACTERISTICS OF THE DEMOGRAPHY OF PARTICIPANTS		
Characteristic	*Frequency*	*Percentage*
Age Groups		
21 - 35 Years	*235*	*73.44%*
36 - 45 Years	*54*	*16.88%*
46 - 55 Years	*31*	*9.69%*
Marital Status		
Married/Widow/Divorced	*293*	*91.56%*
Unmarried	*27*	*8.44%*
Marriage Duration		
0 - 5 Years	*98*	*30.63%*
6 - 20 Years	*154*	*48.13%*
21 - 35 Years	*41*	*12.81%*
Unmarried	*27*	*8.44%*
Highest Nursing education		
ANM	*36*	*11.25%*
GNM	*252*	*78.75%*
Degree	*32*	*10.00%*
Parity		
Unmarried	*27*	*8.44%*
Nulligravida	*38*	*11.88%*
Primigravida	*7*	*2.19%*
Single child	*109*	*34.06%*
More than one child	*139*	*43.44%*
Contraception use		
No	*157*	*53.58%*
Yes	*136*	*46.42%*
If 'Yes' to contraceptive use, method of contraception used		
Condom	*57*	*41.91%*
Pills	*12*	*8.82%*
Copper - T	*47*	*34.56%*
Injection	*4*	*2.94%*
Tubal Ligation	*46*	*33.82%*
Comorbidities		
Yes	*26*	*8.13%*

TABLE 2: KEY DESCRIPTIVE STATISTICS

Description	Mean; SD	Range (years)
Age (*All; N=320*)	32.33; 7.59	21 - 55
Age at Marriage (*Married; N=293*)	22.52; 3.13	18 - 34
Duration of Marriage (*Married; N=293*)	10.46; 7.74	0.08 - 34

TABLE 3: KNOWLEDGE ABOUT CERVICAL CANCER

Knowledge factor	Yes (N)	Yes %
Aware of Cervical Cancer (N=320)	***311***	*97.19%*
Witnessed a case of CA Cervix among family/friends (N=320)	***125***	*39.06%*
Have knowledge about HPV Vaccine (N=320)	***108***	*33.75%*
Knowledge about symptoms of Cervical Cancer (N=311)		
Irregular Vaginal Bleeding	***277***	*89.07%*
Persistent lower backache	***206***	*66.24%*
Discomfort, pain or bleeding during sex	***213***	*68.49%*
Persistent diarrhea	***71***	*22.83%*
Vaginal bleeding after menopause	***259***	*83.28%*
Persistent lower abdominal pain	***255***	*81.99%*
Blood in the stool or urine	***119***	*38.26%*
Unexplained weight loss	***225***	*72.35%*
Knowledge about risk factors for Cervical Cancer (N=311)		
Infection with HPV	***109***	*35.05%*
Smoking cigarettes	***151***	*48.55%*
Patients with HIV/AIDS or transplant	***144***	*46.30%*
Long term use of contraception	***184***	*59.16%*
Infection with chlamydia	***80***	*25.72%*
Having sex at early age	***185***	*59.49%*
Having many children	***164***	*52.73%*
Not having regular Pap smear	***165***	*53.05%*

TABLE 4: PRESENCE OF AWARENESS ABOUT PAP SMEAR

	Yes (N)	Yes %
Awareness regarding Pap smear (N=320)	***284***	*88.75%*
	No (N)	No %
	36	*11.25%*

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TABLE 5: KNOWLEDGE ABOUT PAP SMEAR IN DETAIL

Source of acquired knowledge about Pap smear	***N***	***%***
Nursing Training	242	85.21%
While working in hospital	200	70.42%
Electronic media	64	22.54%
Magazine and Journals	34	11.97%
Seminars	28	9.86%
Friends and Relatives	31	10.92%
Total (multiple responses allowed)	***599***	
Pap smear is a screening method for	***N***	***%***
CA Cervix	88	30.99%
Precancerous Lesions	36	12.68%
Both 1 & 2	160	56.34%
Total	***284***	***100.0%***
Pap smear is taken by	***N***	***%***
Doctors	111	39.08%
Doctors and Nurses	7	2.46%
Doctors and Healthcare Workers	1	0.35%
Healthcare Workers	10	3.52%
Nurses	4	1.41%
All of the above	151	53.17%
Total	***284***	***100.0%***
Previously heard about HPV	***N***	***%***
Yes	106	37.32%
No	178	62.68%
Total	***284***	***100.0%***
Pap smear is taken for	***N***	***%***
Married women of any age	46	16.20%
Married women above 30 years	114	40.14%
Married women above 21 years	40	14.08%
Women who are sexually active for more than 3 years	84	29.58%
Total	***284***	***100.0%***
Ideal screening interval for Pap smear	***N***	***%***
One Year	108	38.03%
Two Year	52	18.31%
Three Year	105	36.97%
Once in lifetime	18	6.34%
Not Answered	1	0.35%
Total	***284***	***100.0%***
Whether participant is trained to take Pap smear	***N***	***%***
Yes	134	47.18%
No	150	52.82%
Total	***284***	***100.0%***
Number of Pap smear taken since training	***N***	***%***
None	65	48.51%
1 - 20	50	37.31%
21 - 40	13	9.70%
> 41	6	4.48%
Total	***134***	***100.0%***
Willingness for Pap smear training	***N***	***%***
Yes	245	76.56%
No	31	9.69%
Unsure	44	13.75%
Total	**320**	**100.0%**

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TABLE 6: CERVICAL CANCER SCREENING PRACTICE – PAP SMEAR DONE FOR SELF

Features of Pap smear done for self	Yes (N)	Yes %	No (N)	No %
Ever had Pap smear done for self (N = 293)	*91*	*31.06%*	*202*	*68.94%*
Result of Pap smear for those who had Pap smear done for self (N=91)				
Normal	*63*	*69.23%*		
Abnormal	*15*	*16.48%*		
Do not know	*13*	*14.29%*		
Whether gynaecological exam done in last 12 months (N=293)	*58*	*19.80%*	*235*	*80.20%*
Did the examination include a cancer prevention examination (N=58)	*21*	*36.21%*	*37*	*63.79%*
Willing to have Pap smear now at Gynaecology Out-Patient Department (N=293)	*139*	*47.44%*	*154*	*52.56%*
Reason for unwillingness to have a Pap smear done (N=154)				
Having menstruation	*16*	*10.39%*		
Pregnant	*12*	*7.79%*		
Hesitant/reluctant to have an internal examination	*16*	*10.39%*		
Apprehension for pain/trauma	*12*	*7.79%*		
Apprehension for results	*18*	*11.69%*		
Asymptomatic (do not have any problem, so do not need it)	*80*	*51.95%*		

TABLE 7: CROSSTABULATION FOR AGE AGAINST SCREENING PRACTICE OF HAVING PAP SMEAR DONE FOR SELF

Crosstabulation for age against screening practice of having Pap smear done for self						χ^2 (p - value)
Age in groups			Cervical Cancer screening practice - ever had Pap smear done for self		Total	
			No	Yes		
Age in groups	21 - 35 years	Count	163	46	209	37.63 (< 0.00)
		% within age in groups	78.0%	22.0%	100.0%	
	36 - 45 years	Count	31	22	53	
		% within age in groups	58.5%	41.5%	100.0%	
	46 - 55 years	Count	8	23	31	
		% within age in groups	25.8%	74.2%	100.0%	
Total		Count	202	91	293	
		% within age in groups	68.9%	31.1%	100.0%	

The table above indicates that there is a strong association between age and those nurses who ever had a Pap smear done: $\chi^2 = 37.63$, $p < 0.00$. Thus, with increasing age, more nurses got Pap smear done for self.

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A total of 320 nurses participated in this study. Socio-demographic variables of the participants is given in Table 1. The age range was 21 years to 55 years (mean age was 32.33 years with a standard deviation of 7.59 years; given in Table 2). Of the 320 participants, 293 were married, while 27 were unmarried. Mean age at marriage was 22.52 years, with a standard deviation of 3.13 years. Mean duration of marriage was 10.46 years, with a standard deviation of 7.74 years.

Various factors pertaining to knowledge about cervical cancer are depicted in Table 3. Majority of the nurses (N=311; 97.19%) were aware about cervical cancer as a disease entity. Nine of the participants stated ignorance about the disease. In the sample of 320 participants, 125 (39.06%) had witnessed cervical cancer among family and/or friends. To check the knowledge about the symptoms for cervical cancer, multiple responses were chosen by the participants. Irregular bleeding per vaginum was identified by 277 (89.07%) respondents, followed by post-menopausal bleeding identified by 259 (83.28%) respondents. Other symptoms identified were persistent lower abdominal pain (N=255; 81.99%), unexplained weight loss (N=225; 72.35%) and post-coital bleeding (N=213; 68.49%).

Most of the participants identified more than one risk factor for cervical cancer. The most common factors identified were having sex at an early age (N=185; 59.49%), and long-term use of contraception (N=184; 59.16%). Majority were also aware of having many children (N=164; 52.73%) and not having regular Pap smear (N=165; 53.05%) as risk factors. Only 35.05% (N=109), however, identified infection with HPV as a risk factor. This is also seen when assessing knowledge about HPV vaccine, where only 108 of all participants (33.75%) claimed awareness. Awareness regarding Pap smear was also assessed (results shown in Table 4). It was seen that 88.75% (N=284) of the participants were aware.

The level of knowledge about Pap smear for the 284 participants was assessed, and it is depicted in Table 5. Majority of the participants (N=242; 85.21%) had acquired the knowledge about Pap smear during training, whereas 70.42% (N=200) learnt it while working in the hospital. Of the 284 participants, 56.34% (N=160) recognised Pap smear as a screening method for both cervical cancer and precancerous lesions, and 53.17% (N=151) are aware that doctors, nurses and all trained healthcare workers can take Pap smear. Human Papilloma Virus (HPV) causing the cancer of cervix is known to 106 participants (37.32%). According to 114 participants (40.14%), women above 30 years can get their Pap smear taken; and 84 participants (29.58%) selected the option ‘women who are sexually active for more than 3 years irrespective of age’. Ideal screening interval of 3 years was marked by 105 participants (36.97%), while 108 (38.03%) said the screening should be done every year.

In terms of training, 134 participants (47.18%) were trained in taking Pap smear. Of these, 65 (48.51%) did not take any Pap smear; 50 (37.31%) had taken between 1 and 20 smears; 13 (9.70%) had taken 21 to 40 smears; and 6 (4.48%) had taken more than 41 smears. All the participants (N=320) were offered training to conduct cervical screening (Pap smear). Of these, 245 (76.56%) were willing to get trained.

Attitudes of participants towards Pap smear taken for themselves was also analysed for married participants (N=293) and is depicted in Table 6. Of the 293 participants, 91 (31.06%) had got Pap smear done for self. Of these, 63 (69.23%) had a normal result, 15 (16.48%) had an abnormal result, and 13 (14.29%) did not follow-up on the result. Among the married participants, 58 (19.80%) had a Gynaecological exam done within the past year, of which, 21 (36.21%) got Pap smear done for themselves.

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All the married participants were also offered Pap smear test in the Gynaecological outpatient department of the hospital. Of the 293 participants, 139 (47.44%) agreed, and 154 (52.56%) did not agree. The most common reason to not have Pap smear done was being asymptomatic (N=80; 51.95%), followed by being apprehensive for results (N=18; 11.69%); having menstruation and reluctance to have internal examination were the next common reasons (N=16; 10.39%). Table 7 shows that there is a strong association between age and Pap smear done for self. More participants had Pap smear done for self as age increased.

DISCUSSION

Cervical cancer is a major health problem in India, especially in rural areas, where majority of women are not aware of the disease entity. This problem can be reduced by inducting the healthcare workers, particularly the staff nurses in screening programme. An early diagnosis of the precancerous lesion through screening is required to prevent incidence of advanced stage of cervical cancer. This can be achieved by sensitising the staff nurses about the important aspect of screening.

The most common symptom of cervical cancer is post-coital bleeding, abnormal vaginal bleeding, and malodorous vaginal discharge. Backache, urinary and bowel symptoms occur at an advanced age [14]. In this study, 97.19% of the participants were found to be aware of cervical cancer. The symptoms of irregular bleeding and post-menopausal bleeding were identified by 89.97% and 83.28% of the participants respectively. Persistent lower abdominal pain, discomfort or pain during sex, and unexplained weight loss were selected as symptoms by 81.99%, 68.49% and 72.35% of the participants respectively. Satisfactory level of awareness about cervical cancer has been noted in different studies [8,10, 11-12, 14-21]. In the study by Shah et al [15], 86.5% of the participants mentioned menstrual abnormality and 94.2% mentioned abnormal vaginal discharge as the symptom of cervical cancer.

The risk factors for cervical cancer are early onset of sexual activity, HPV infection, infection with chlamydia and other sexually transmitted diseases, immunosuppressed states, for example, HIV, high parity and prolonged use of oral contraceptive pills (OCPs), and smoking [14]. In this study, more than one risk factor was identified by the participants. Having sex at an early age (early marriage) and long-term use of OCPs were both identified by 59% of the respondents. Multiparity was identified by 52.7%, and not having regular Pap smear was identified by 53% of the participants.

Human Papilloma Virus (HPV) is the most important cause of cervical cancer, but was recognised by only 35% of the respondents. This shows inadequate knowledge about the aetiology of cervical cancer in the study population. In different studies by Devi et al [16], Singh [10], and Goyal [8] 76.9%, 54.1% and 38.6% of the respondents, respectively, knew that HPV is a risk factor for cervical cancer. For prevention of cervical cancer, the HPV vaccine plays a vital role. It is available in India. In this study, 108 participants (33.75%) were aware about it. To promote the preventative aspect, the staff nurses are expected to have better knowledge and introduce the vaccine in the general population as no government policy is available at the moment. Studies by Shekhar [11], Devi [16], Dulla [20], and Thakar [21] show that 25.5%, 58.4%, 36.2% and 43.28% of the respondents were aware of the HPV vaccine. This indicates that awareness of the HPV vaccine is moderate and educational programmes need to be arranged for improvement.

Pap smear is a reliable screening method for precancerous lesion and cervical cancer. In this study, among the 320 participants, 284 (88.8%) had knowledge about Pap smear. Knowledge of Pap smear has been found to be satisfactory in similar studies [8, 10-12, 15-18]. In a study conducted

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in Pakistan [14], awareness about Pap smear was 40% among the participants and another study in Southern Ethiopia [20] showed awareness of Pap smear as a screening method among 30.8% of female health workers. These differences might have occurred because of sociodemographic differences, level of knowledge and attitude towards the cervical screening methods of participants.

In this study, the participants acquired knowledge from multiple sources: the main source of knowledge was during nursing training (242 respondents; 85.2%), and working in the hospital was the next major source of knowledge (200 respondents; 70.4%). In other studies, the main source of knowledge regarding Pap smear is nursing training institutes and different contact points in hospitals [8, 10-11, 16 – 19, 21].

FOGSI has recommended that screening should start at 25 years for good resource and 30 years for low resource settings. The frequency for cytology (Pap smear) is 3 years for satisfactory follow-up [4]. An Australian study also suggests that the interval can safely be reduced to 3 years as it is equally effective and reduces the burden for investigation and treatment procedures [22]. American Cancer Society recommends that the screening process start by 25 years, with a frequency of once every 3 years [23]. In the present study, 40.14% of the participants have chosen the option of Pap smear to be taken for women above 30 years and 36.97% of the respondents have marked the frequency for screening as 3 years. Also, 29.58% of the participants have marked that women who are sexually active for more than 3 years (regardless of age) should have Pap smear.

In the studies by Singh and Shekhar et al, 54.1% and 40.5% of the respondents, respectively, answered that Pap smear has to be done for women above 21 years or those who are sexually active for more than 3 years (whichever is earlier) [10-11].

In the present study, 53.2% of the participants have marked that doctors, nurses, and trained healthcare workers can take Pap smear. Other studies have shown that majority of the respondents marked that only doctors can take Pap smear [10-11, 16]. Nursing staff has to be reoriented and encouraged to motivate and do the screening for the community. In the present study, 47.18% of the participants are trained to take Pap smear. Among them, 48.51% has not taken any Pap smears. In the study by Singh [10], out of 82 married participants, 39 and 32 participants had taken Pap smear respectively. This shows a need for reorientation and sensitisation. The healthcare staff need to be provided with an opportunity to utilise their training. Among the married group, only 31.06% had Pap smear done for self. Being asymptomatic was the most common reason for not getting Pap smear done for self. Similar low results are seen in other studies [8-11, 13-18]. This indicates a low uptake of cervical screening practice in spite of good awareness. This negative attitude has to be changed by redesigning the teaching programmes, organising seminars and workshops.

CONCLUSION

In the present study, the staff nurses were found to have adequate knowledge about cervical cancer, but the awareness and knowledge about screening method (only Pap smear was assessed) was moderate. This reflected a negative attitude that resulted in a low uptake of practice.

RECOMMENDATION

Nursing staff plays a pivotal role in healthcare services. The lack of depth of the knowledge of screening programmes needs to be improved by organising workshops and reorientation programmes. In addition, the cervical cancer prevention issue can be included in the curriculum during training. With positive attitude and in-depth knowledge, they can enlighten the community to utilise the screening

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services for early diagnosis and treatment of cervical cancer and precancerous lesions.

STUDY LIMITATIONS

The present study has limitations. The answers given by the respondents are based on recall and recognition factors that can be biased. Social desirability bias can influence the participants' answers, and is therefore another limitation. The study is done in a rural hospital, so the findings cannot be extrapolated to a larger scale such as that of the state or the country.

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