



**Cervical Cancer screening in a Tertiary care Hospital in Rajnandgaon, Chhattisgarh:
Barriers and Challenges in Rural scenario**

Meena Armo¹, Chandrashekhar Indoria², Ekata Thakur¹

- 1- Department of Obstetrics & Gynecology, BRLSABVM Government Medical College
Rajnandgaon, Chhattisgarh, India
- 2- Department of Pathology, BRLSABVM Government Medical College Rajnandgaon,
Chhattisgarh, India
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ABSTRACT

Background:

Cervical cancer is a potentially preventable cancer, although it is a major cause of morbidity and mortality in resource-poor settings. This study was therefore undertaken to assess the knowledge and practice among rural women regarding cervical cancer screening and its prevention, to find out barriers influence the utilization of screening tests and HPV vaccination. Attempt was also made to identify the risk factors for cervical cancer, to do cytological screening and to detect premalignant, malignant lesions in the study population.

Methods: It was a cross-sectional questionnaire-based study, conducted from January 2018 to December 2019 in the Department of Obstetrics and Gynecology at Government Medical College & Hospital Rajnandgaon, the only tertiary care center in the district which provides cervical cancer screening facility. A total of 897 women, aged 21-65 years were screened and assessed. Qualitative data were presented as frequencies and percentages by using SPSS version 21.

Results: Of the total, 6.8% (61) had heard about cervical cancer screening while only 0.6 % (6) women gave history of uptake of some cytological screening in the past. None of them were ever heard of Pap test, HPV DNA test & HPV vaccination. However, 7% (35) out of 506 HPV DNA samples and 8.4% (33) out of 391Pap samples came positive in the study group.

Conclusions: Effective health education is needed to cross the barrier of ignorance among health care givers and seekers. Strengthening of existing health system, qualitative research, clinical audits in facilities and monitoring are also mandatory.

Keywords: Cervical cancer screening, Cervical cancer, Knowledge



INTRODUCTION

India accounts for almost one-fourth of cervical cancer incidence and deaths with an estimated 96,922 new cases and 60,078 deaths in 2018 (Source: GLOBOCAN 2018).

Although the data from cancer registries in India indicates a steady decline in the incidence and deaths in urban population with implementation of screening programme as cancer cervix has long pre-invasive stage which can be early detected and appropriately treated.

However, its prevalence is alarming in rural population which could be due to lack of medical facilities, poor infrastructure & trained personnel, hence rural and older women are least likely to get screened and treated, therefore more likely to develop invasive cancer and die from it.¹

Moreover, people living below poverty line are mainly dependent on National Health Insurance Program for free medical as well as surgical services, they prefer hysterectomy over conservative treatment for gynaecological problems.²

This study was therefore undertaken to assess the knowledge and practice among rural women regarding cervical cancer and its screening, to find out barriers those influence the utilization of screening tests and HPV vaccination. Attempt was made to screen the study population to detect premalignant, malignant lesions and to identify the risk factors for cervical cancer as well.

METODOLOGY

It was a prospective cross-sectional questionnaire-based study, conducted from January 2018 to December 2019, in the Department of Obstetrics and Gynecology at BRLSABVM Government Medical College Rajnandgaon, after getting approval from 'Institutional Ethics Committee'. A total of 897 women were included in the study.

Inclusion criteria

- Women ≥ 21 -65 years, who attended gynecological OPD with complains
- Women ≥ 30 -65 years, relatives of the OPD patients and mitanins (ASHAs), regardless of gynaecological complain and willing to participate.

Exclusion criteria

- Women < 21 year and > 65 year
- Treated cases of carcinoma
- Women with history of hysterectomy



Informed written consent was taken from all the respondents. Before collecting samples for Pap and HPV test predesigned questionnaires were asked in detail through face-to-face interviews in local language. During the study period, total 506 HPV DNA samples and 391Pap samples were collected. Women were thoroughly explained either individually or in a group by resident doctors or consultants regarding the need of screening, about the procedure and further management if required. Finally, all the parameters were analyzed separately and discussed. Qualitative data were presented as frequencies and percentages by using SPSS, version 21.

RESULTS

In the study, total women screened were 897. Majority (63.2%) were between 31-50 years of age group. Most of them were literate (67.8%), and from rural background (54.8%) and lower class (Table 1). Most of them (55.7%) were symptomatic, were not achieved menopause (78.8%). Majority of them (54.7%) were married at younger age, were having parity ≥ 3 (60.3%). Most of them (53.0%) were not using any form of contraception while majority of them (81.1%) were not using sanitary pads during their menstrual cycle. Incidentally, 86.7% women were found addicted to “Gudakhu”, a tobacco containing toothpaste routinely used by rural women of state. (Table 2, Figure 2)

Of the total, 10.9 % (98) had heard of cervical cancer, while 6.8% (61) had heard about its screening. Unfortunately, only 0.6 % (6) women gave history of some screening for cervical cancer in the past. None of them were ever heard of Pap test, HPV DNA test & HPV vaccination. Only 62.42% (560) showed willingness to undergo cervical cancer screening in future and 40% (359) showed willingness to vaccinate their teenagers (Figure1). However, it was more difficult to counsel and educate asymptomatic older population than symptomatic younger ones. (Table 3, Figure1)

In the study, 35(7%) out of 506 HPV DNA samples and 33(8.4%) out of 391Pap samples came positive. It needs to be mentioned that despite multiple reminder phone calls only 17 out of 68 positive cases came for follow up and treatment. (Table 4) Women were offered, cryotherapy, thermocoagulation, Colposcopy, biopsy, loop electrosurgical excision procedure or conization (cone biopsy), hysterectomy depending on the clinical extent of their lesions.



Table 1: Demographic Details (N=897)

Variable		Frequency	Percentage (%)
Age	=30	160	17.8
	31-40	336	37.4
	41-50	231	25.7
	51-60	120	13.3
	>60	50	5.5
Marital status	Married	810	90.3
	Separated /widow	87	9.6
Residence	Rural	492	54.8
	Sub-urban /urban	405	45.1
Education	Illiterate	288	32.1
	Literate	609	67.8
Income group	<1000	169	18.8
	1000-5000	548	61.09
	>5000	180	20.06



Table 2: Behavioral and reproductive characteristics (N=897)

Variable		Frequency	Percentage (%)
Gynecological complains	No	397	44.2
	Yes	500	55.7
Menopause	No	707	78.8
	Yes	190	21.1
Age of marriage	<11	15	1.6
	11-14.5	126	14.0
	15-18	350	39.0
	>18	406	45.2
Duration of marriage	1-10 years	150	16.7
	11-20 years	374	41.6
	21-30 years	273	30.4
	>30 years	100	11.1
Parity	0	50	5.57
	1	64	7.10
	2	242	26.97
	3	361	40.24
	=4	180	20.06
History of sterilization/contraception	Tubectomy	308	34.33
	Condom	113	12.59
	Nothing	476	53.06
Use of sanitary pad	No	574	81.18
	Yes	133	23.17
Smoking	Yes	18	2.00
"Gudakhu" (tobacco-containing toothpaste)	Yes	778	86.73



Table 3: Knowledge, practice and attitude of women regarding cervical cancer and its screening (N=897)

Variable	Frequency	Percentage(%)
Have you heard about cervical cancer?		
No	799	89
Yes	98	10.9
Have you heard about screening for cervical cancer?		
No	836	93.1
Yes	61	6.8
Where did you hear about screening (N=41)?		
Health professionals	46	5.1
Friends/Relatives	11	1.2
Media /News papers	4	0.4
Have you heard about Pap test/ HPV DNA test /HPV infection/HPV vaccination?		
No	897	100
Yes	Nil	0
Have you been screened for cervical cancer earlier?		
No	891	99.3
Yes	6	0.6
If you have not been screened, what was the reason (N=897)?		
No symptoms	268	29.8
No knowledge	456	50.8
Not advised	173	19.2
Attitude towards future screening		
Negative /neutral	337	37.5
Positive	560	62.4
Attitude towards future vaccination		
Negative/neutral	538	60.0
Positive	359	40.0



Figure 1
Reasons for showing negative attitude towards screening

- Anxiety ,fear about the possibility of being diagnosed with cervical cancer
- Embarrassment
- Pain and discomfort
- Lack of information about screening sites
- No consent from husband /father /son

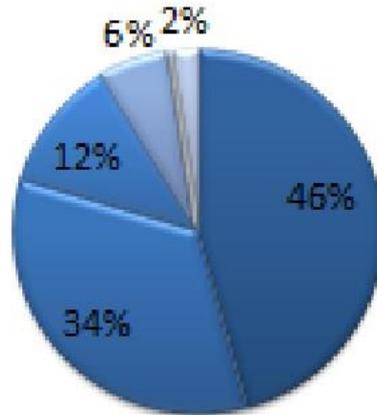


Figure 2: Risk factors identified for Cancer Cx

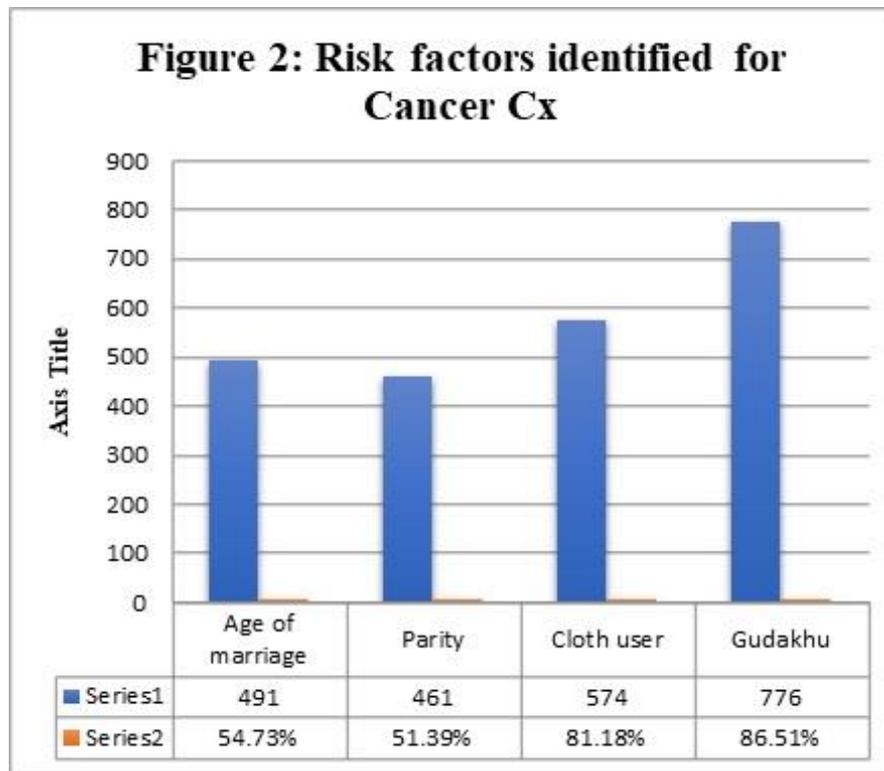




Table 4: Chief complaints on presentation

Chief complaints	Frequency	Percentage(%)
Vaginal discharge	383	42.7
Pain in lower abdomen	204	22.8
Something coming out of vagina	227	25.3
AUB	73	8.1
Postmenopausal bleeding	10	1.1

Table 5: Cytology Report (N=897)

Variable	Frequency	Percentage(%)
HPV DNA test(N=506)		
Positive	35	7
Negative	471	93
Pap test(N=391)		
Unsatisfactory	23	5.8
NIML	94	24
Inflammatory	192	49
Nonspecific	49	12.5
AUSCUS	13	3.3
ASC-H	0	0
LSIL	8	2.0
HSIL	10	2.5
SCC	2	0.5

DISCUSSION

Our college is a newly formed undergraduate government medical college and only centre in the district which has been providing cervical cancer screening facility since January 2018. The level of knowledge about cancer cervix and its screening was found to be very low in the study in contrast with study done in urban setting of Raipur which is a capital of our state. It is also low as compare to studies done in southern states of India, Nepal, Bangladesh and China as well where the awareness level was much better.³⁻⁶



Past uptake of Pap test was also found to be very low (0.6%) as compare to result reported by other study.⁷ No symptoms, lack of awareness and fear were the reasons for avoiding screening in the study population which is similar to studies done in rural setting of Kerala and Tamil Nadu.^{5, 8}

Although community-based studies have also reported, that only 2%- 6.9% of rural women got screened in India.⁹ This could be explained fairly by the differences in the educational status, social behaviour, media exposure and availability of health facilities among respondents.³⁻⁶

In the study, none of the women had ever heard of name of any screening method, HPV infection and vaccination. This signifies inadequate counselling by the health care providers regarding the subject among rural population. This also indicates underutilization of social media by care provider and care seeker.^{5,8}

However, risk factors identified for cancer cervix in the study were marriage at younger age, large no of childbirth, use of cloth during menstruation, poor utilization of family planning practices similar as reported by study done in North India and West Bengal, which suggests further need of screening and early detection efforts towards at risk group^{10,11}

Incidentally, 86.7% women were found addicted to “Gudakhu” tobacco containing toothpaste routinely used by the rural women in the state, however the association between smokeless tobacco and pre-malignant or malignant cervical lesion has not been adequately reported.¹²

The importance of screening and prevention had been thoroughly explained to the participants prior to collection of samples, despite the fact 62.42% showed willingness to undergo cervical cancer screening while 40% showed willingness to vaccinate their teenagers in the future. This is probably because of non-availability of screening methods in the nearby PHC or CHC, lack of awareness about cervical cancer, its screening methods and HPV vaccination among health care providers, Mitanins and ANMs.

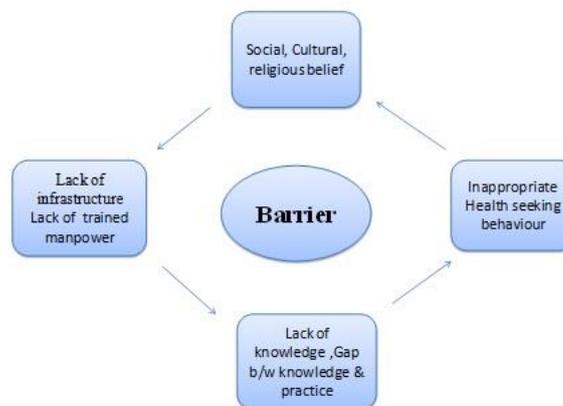
However, it had also been observed that attitude was better among symptomatic, younger women, women living in suburban areas, women using family planning and having contact with the health-care system as compared to asymptomatic, older women, women living in remote villages, indicating that previous contacts with reproductive health services may increase awareness, making women more responsive to cervical cancer screening. Older women may be less responsive to awareness activities because they believe that detection and treatment make no difference to them. Therefore, strategies to promote cervical cancer screening should pay particular attention to incorporating messages specifically targeted at older women.^{13, 14, 15}



There is a little evidence of HPV positivity in the state.¹⁶ In our study, 35(7%) women found positive out of 506 women screened by HC2 HPV DNA test which needs further research. It has been established so far that cytological screening reduces the incidence of cervical cancer. Although screening in urban areas revealed a low incidence of squamous intraepithelial lesion (SIL), but the situation is alarming in rural population.^{17, 18} However, 33(4.6%) out of 391Pap samples came positive for SIL in our study which is quite encouraging. Moreover only 10(2.2%) women found positive for HSIL in contrast with the result reported by other studies done in South India.^{19, 20} It indicates the need of regular cytological screening in this region so as to cover major population to know the actual prevalence of HSIL.

Unfortunately, compliance of follow up at one year was very poor in the study. Despite making multiple reminder calls to the respondents only 17 (25%) out of 68 positive cases came for treatment similar as other studies, the reason could be confusion, miscommunication, unable to understand the information provided by the physician or nurse etc. We do not know the exact reason for less compliance among these women, but clearly efforts are needed to ensure that there is family support for treatment.^{14, 15}

Figure 3: Barriers to uptake of cervical cancer screening among rural population



Rural health system: Strength and solution

Mitanin or ASHA workers, ANMs and National Health Insurance Program form the back bone of the rural health system. In the majority of cases, Mitani whom women had first contacted has a greater influence on the selection of the gynaecologist as well as hospital. They really need proper education and training.



People living below poverty line are mainly dependant on National Health Insurance Program (Ayushman Health Yojna) for free medical as well as surgical services. Cervical cancer screening tests & HPV vaccination should be included in insurance program to reduce financial burden and to extend the facility among rural population. There is also a need of community-based intervention to promote HPV vaccination coverage.

This study has some limitations and measurement bias. Since it was a cross sectional study conducted among women attending a tertiary care hospital from nearby villages, so it is not a representation of any particular rural area. Although large number of women screened by Pap and HPV DNA test for the first time and large number of women came to know what Pap, HPV test and vaccination were, that too for the first time in the whole district which the strength of our study.

CONCLUSIONS

In summary, present study population shows low knowledge about the disease, lack of knowledge about screening and lack of familiarity with the concept of prevention. Although number of risk factors for cervical cancer, prevalence of HPV infection and premalignant lesions were well recognized. Hence, effective health education is needed to cross the barrier of ignorance among health care givers and seekers. One major issue is to determine how to obtain high levels of attendance to achieving adequate coverage of screening as well as HPV vaccination among rural population. The other key elements are defining a referral system for women with abnormal cytology, management guidelines and follow up of patients. However further research is needed to have a clear database in this regard.

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