

Association of risk factors of carcinoma cervix with abnormal pap results among women attending a tertiary care hospital of jharkhand: A cross sectional study



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ABSTRACT

Background: Cervical cancer has become a vital cause of cancer mortality among women worldwide. It is the fifth most common cancer overall and second most common cancer among women worldwide. **Aims and Objectives:** To assess the frequency of established risk factors of cervical cancer among study subjects and to find out the association between socio demographic variables and risk factors with results of pap smear test. **Materials and Methods:** Hospital based cross sectional study was conducted in Pathology department of Rajendra Institute of medical sciences, Ranchi for 3 months (September – November 2017) on total of 106 women who gave consent. **Results:** All the women (n = 106) were married, 68 out of 106 (64.2%) were Hindus, 57 out of 106 (53.8%) were non Tribals 60.4% were from urban area and most of them 62 out of 106 (58.49%) were housewives. Amongst risk factors, 69 out of 106(65.09%) had their first sexual intercourse before 18 years of age, only 11 out of 106 (10.4%) were addicted to smoking and 42 out of 106 (39.62%) had past history of STIs. Educational status and Socio economic status was found to be significantly associated with abnormal pap smear results with p value <0.05. **Conclusion:** Most of the women were from non tribal ethnicity and urban background and illiterate with the mean age of 37.9 ± 10.56 years. Educational status and Socio economic status were significantly associated with abnormal Pap results

Key words: Risk factors; Carcinoma; Cervix; Pap test

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INTRODUCTION

Cervical carcinoma is one of the most common and dreaded diseases of women, and in India, it accounts for one fourth of total cervical cancer cases occurring globally.¹ It is one of the principal causes of cancer mortality among women globally,² amounting to 17% of all female cancer deaths between 30 – 69 years.³ Despite being most preventable cancer, it is still the world's second leading cancer killer of women.⁴ India accounts for about 25% of cervical cancer cases reported from the world. Every year in India, 122,844 women are being diagnosed with cervical cancer while 67,477 die from

the disease.⁵ According to National Institute of Cancer Prevention and Research, one woman dies of cervical cancer every 8 minutes in India.⁶ India also has the highest age-standardized incidence of cervical cancer in South Asia at 22, compared to 19.2 in Bangladesh, 13 in Sri Lanka, and 2.8 in Iran. India has a population of 469.1 million women aged ≥ 15 years, all of them being at the risk of developing cancer.⁷ The established risk factors of cervical cancer are increasing age, lower socio-economic status, non-maintenance of personal hygiene, lack of literacy, multiple sexual partners, tender age at marriage and first child birth, high parity and long-term use of hormonal contraceptive.⁸ Other factors which may

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account to increased risk are co-infection with Chlamydia trachomatis, HIV and Herpes simplex virus type-2, immunosuppression, and certain dietary deficiencies such as deficiency of vitamin A, C, E and selenium.^{9,10} Human Papilloma Virus (HPV) is though a necessary cause but not sufficient cause of cervical cancer. In India, about 75% of population resides in rural area where along with factors like multiparty, early age at marriage, poor genital hygiene, other factor like negligence by patient to initial symptoms like leucorrhoea, post coital bleeding due to unawareness, illiteracy and lack of adequate screening facilities prevail which increases incidence among Indian women.¹¹ The usual 10-20 years of natural history of progression from mild dysplasia to carcinoma cervix makes this cancer as relatively early preventable disease. Incidence among women having parity ≥ 3 are more.¹² Screening for this cancer is effective, feasible and affordable way for its early detection.¹³ Cytological screening technique serves as a simple and cost effective way to detect these dysplastic lesions at earliest stage.¹⁴ Pap smear test is the most commonly used test and has been recognized as the first line of investigation in screening of cervical cancer. It is a simple, safe, economical and reliable technique.¹³ Studies on cervical cancer are sparse from Jharkhand and since this cancer is emerging as a deadly disease so the present study was conducted with the objectives to assess the frequency of established risk factors of cervical cancer among study subjects and to find out the association between socio demographic variables and risk factors with results of Pap smear test.

MATERIALS AND METHODS

This was a hospital based cross sectional study conducted in the department of Pathology, Rajendra Institute of Medical Sciences, Ranchi among women aged above 21 years attending the Pap test laboratory of pathology department between 11am to 4pm on all working days of the week for a duration of 3 months (September - November 2017) and giving consent for study. Severely ill patients were excluded from the study. Period of data collection was 1 month during which a total of 106 women attended pathology department and gave consent. Hence the sample size was 106 chosen by total convenient sampling. Subjects were interviewed at the time they came to collect their reports so that detailed interview and the report results could be recorded together. Data was collected using a semi-structured pretested questionnaire comprising of questions on socio demographic characteristics, risk factors and final pap test results. Templates were generated on MS - Excel sheet and data analysis was done using SPSS version 20.0 software. The statistical tests used were descriptive statistics and

Pearson's Chi-square test and P value of less than 0.05 was considered significant. Ethical clearance was obtained from institutional ethics committee prior to start of the study. Informed written consent was taken from the study subjects after explaining the purpose of the study.

RESULTS

Total of 106 women participated in the present study out of which 57 (53.8%) were non Tribals, 64 out of 106 (60.4%) resided in urban areas and most of them 68 out of 106 (64.2%) were Hindus, 42 out of 106 (39.6%) were illiterate, all of them were married and none belonged to upper class of socio economic status according to modified BG Prasad classification of January 2017. Table 1 shows the socio demographic characteristics of the study participants. The distribution of risk factors in terms of mean and standard deviation of age is shown in Table 2. The mean age of the study participants was 37.9 ± 10.56 years and age at 1st sexual intercourse and 1st child birth was 18.27 ± 2.8 years and 19.69 ± 2.17 years respectively. Table 3 shows the frequency distribution of various risk factors. It was found that history of smoking was present in 11 out of 106 (10.4%) and majority 90 out of 106 (84.9%) never used any oral contraceptive pills. Total number of women diagnosed with inflammatory

Table 1: Socio demographic profile (n=106)

S.No.	Variable	Frequency	Percentage	
1	Ethnicity	Tribal	49	46.2%
		Non tribal	57	53.8%
2	Residence	Rural	42	39.6%
		Urban	64	60.4%
3	Religion	Hindu	68	64.2%
		Muslim	17	16%
		Saran	08	7.5%
		Christian	13	12.3%
4	Education	Illiterate	42	39.6%
		Primary	30	28.3%
		Secondary	20	18.9%
		Senior-secondary	11	10.4%
		Graduate	03	2.8%
5	Occupation	Student	13	12.26%
		Housewife	62	58.49%
		Dailywage labour	24	22.64%
		Service class	07	6.6%
6	Marital status	Married	106	100%
		Un married	0	0%
7	Socio economic status	Class 1	00	0%
		Class2	12	11.3%
		Class 3	28	26.4%
		Class 4	34	32.1%
		Class 5	32	30.2%

lesions are shown in Figure 1. Table 4 and Table 5 shows the association of socio demographic variables with the Pap test results it is seen that education status and socio economic status is significantly association with abnormal pap smear result findings with p value of <0.05. Table 6 shows the association of established risk factors with abnormal pap smear results. It is seen that none of the risk factors are significantly associated with Pap smear test results.

representing about 6.6% of all female cancers. During 2018, about 311365 women died of cervical cancer which accounts for 3.2% of all deaths due to cancer in women. About 90% of these deaths occur in low and middle income countries.¹⁶ The present study was conducted to find out the association of established risk factors of cervical cancer with its occurrence and it was found that the mean

DISCUSSION

Cervical cancer is the fourth most frequent cancer in women with about 5,70,000 new cases diagnosed in 2018,

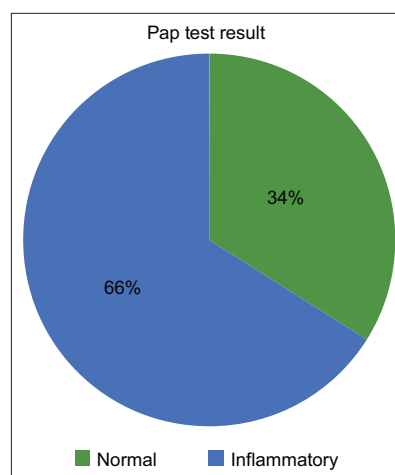


Figure 1: Findings of pap smear test (n = 106)

S. No.	Variables	Mean (years)	Standard Deviation
1.	Age of the subject	37.9	± 10.56
2.	Age at Marriage	18.09	± 1.99
3.	Age at 1 st sexual intercourse	18.27	± 2.8
4.	Age at 1 st child birth	19.69	± 2.17

S. No.	Established risk factors	Frequency	Percentage	
1	Maintenance of menstrual hygiene	Adequate	81	76.42%
		Poor	25	23.58%
2	Age at 1 st sexual intercourse	≤18 years	69	65.09%
		>19 years	37	34.91%
3	History of smoking	Present	11	10.4%
		Absent	95	89.6%
4	Past history of STIs	Yes	42	39.62%
		No	64	60.38%
5	Use of OCPS	Never consumed	90	84.9%
		Taken occasionally	13	12.3%
		Taken regularly for >8 years	03	2.8%

s. no	Variables	Pap smear results		P value	
		Normal	inflammatory		
1	Ethnicity	Tribal	16 (32.7%)	33 (67.3%)	0.792
		Non tribal	20 (35.1%)	37 (64.9%)	
2	Residence	Rural	18 (42.9%)	24 (57.1%)	0.117
		Urban	18 (28.1%)	46 (71.9%)	
3	Education	Illiterate	08 (19.0%)	34 (81.0%)	<0.001
		Primary	15 (50%)	15 (50%)	
		Secondary	04 (20%)	16 (80%)	
		Above secondary	09 (64.29%)	05 (35.71%)	

Table 5: Association of SES with Pap smear results (n=106)

SES	Pap smear results		P value
	Normal	Inflammatory	
Upper middle	08 (66.7%)	04 (33.3%)	0.015
Middle	09 (32.1%)	19 (67.9%)	
Lower middle	06 (17.6%)	28 (82.4%)	
Lower	13 (40.6%)	19 (59.4%)	
Total	36 (34%)	70 (66%)	

Table 6: Association of Risk factors with Pap results (n=106)

S. No.	Risk factors	Pap smear results		P value
		Normal	Inflammatory	
1	OCP consumption			0.935
	Never consumed	30 (33.3%)	60 (66.7%)	
	Taken occasionally	05 (38.5%)	08 (61.5%)	
	Taken regularly for >8 years	01 (33.3%)	02 (66.7%)	
2	Smoking habit			0.859
	No	32 (33.7%)	63 (66.3%)	
	Yes	04 (36.4%)	07 (63.6%)	

age of study participants was 37.9 ± 10.56 years and age at 1st sexual intercourse and 1st child birth were 18.27 ± 2.8 years and 19.69 ± 2.17 years respectively whereas in a study done by Vijay Manohar Bhagat et al.,¹⁵ mean age was 37.54 years which is similar to the findings of this study. Cervical cancer most commonly affects women in their most productive age group 25-45 years.¹⁶

In the present study it was found that illiteracy is significantly associated with abnormal pap smear findings. This is important as illiteracy will lead to poor genital and menstrual hygiene and poor awareness about the symptoms of inflammatory lesions. A study done by Thakur et al., in Himachal Pradesh² also have similar findings where illiteracy was documented as a cause for early age at marriage, high parity, poor dietary intake, poor utilization of health services in addition to factors mentioned in the present study.

Socioeconomic status has a directly proportional role in practices of healthy behaviour such as practice of proper genital hygiene, level of knowledge and understanding and also the acceptability of services by government to prevent cervical cancer. In the present study it was found that poor socio economic status was significantly associated with the presence of inflammatory pap smear findings with p value < 0.05.

CONCLUSION

Cancer of the uterine cervix is one of the preventable cancers among women. Prevention can be by early screening and awareness generation among women. Among the established risk factors, educational status and the socio economic status of women were found to be significantly associated with presence of inflammatory lesions.

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Authors contribution:


AK: Concept of study, draft of study proposal and literature review, statistical analysis and interpretation of results. **SS:** Literature review, preparation of questionnaire, planning analysis, manuscript preparation. **VK:** Planning analysis, Interpretation of results and review of manuscript.

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