

# Screening of Healthy Women Using Visual Inspection with Acetic Acid For Detection of Cervical Cancer

Suchitra A Rati<sup>1</sup>, Jayashree Pujari<sup>2</sup>

<sup>1</sup>Prof. Vice Principal, HOD, <sup>2</sup>Associate Professor Department of Community Health Nursing, BLDEA'S Shri B M Patil Institute of Nursing Sciences-Vijayapur

## Abstract

**Background:** Cervical cancer is the fourth most common cancer in women worldwide and second most common cancer in developing and under developing Nations. the higher incidence of cervical cancer in developing countries is mainly because of lack of resources ,lack of effective screening technologies and poorly organized health care delivery in the rural area

**Objective:** To determine the prevalence of cervical precancerous lesion among healthy women

**Materials and Methods:** The study was conducted for 600 Healthy women who were selected by using purposive sampling technique .the prevalence of precancerous cervical lesion was assessed by Visual Inspection with acetic acid and the data was analyzed by using inferential and descriptive statistical methods

**Result:** It was also observed that prevalence of cervical Precancerous lesions in healthy women was 5.0%. It means that 30(5.0%) out of 600 healthy women had risk of cervical precancerous lesions in this present study. Among the study samples who suspected to be positive, off them 10(3.3%) had two or less quadrant involved, and 5 (1.7%) had three quadrants involved, About action taken 30(5.0%) were referred for confirmation, 230(38.3%) followed up after 3 years, 340(56.7%) had referred medical treatment and VIA test after six monthsThe study result shows that Reveals that prevalence of cervical Precancerous lesions was highly associated with visual examination findings such as cervicitis, white discharge, and abnormal findings .**Conclusion:** The study results conclude that VIA test can be used as a alternative screening technique for early diagnosis of precancerous lesion among women at low resource setting

**Key words:** Healthy women, precancerous lesion, VIA Test

## Introduction

Death Rate from Cervical Cancer Higher Than Thought

Cervical cancer is a major public health problem in developing countries such as India and it has lead to the greatest economic and social impact on the population .It mainly affect the women in reproductive age group <sup>1</sup> “Cervical cancer is a taboo issue in many places as it is linked to sexual transmission. Unless women come forward and break this stigma and come forward for the health check up, we contribute to larger number of mortality and morbidity related to oral cancer <sup>10</sup>

Cervical cancer is the fourth most common cancer in women worldwide and second most common cancer in women living in less developed regions <sup>3</sup>, which preferably effects the women within the age group of 18 to 45 years and it is commonly caused by human papilloma virus .the higher incidence of cervical cancer in developing countries is mainly because of lack of resources ,lack of effective screening technologies and poorly organized health care delivery in the rural area <sup>2</sup>

India with a population of 436.76 million women aged 15 years and above are at the risk of developing oral cancer .it has been estimated that every year 122844 are diagnosed with cervical cancer and 67477 people die

with cervical cancer as per the statistics of 2012 .<sup>3</sup>

According to World Health Organization (WHO) Report estimated 530 000 new cases of cervical cancer globally (estimations for 2012), with approximately 270 000 deaths (representing 7.5% of all female cancer deaths). More than 85% of these deaths occurred in low- and middle-income countries <sup>4</sup>

Cancer preferably occurs in the middle aged women in the age group of 40 -50 years and mostly occurs in people with low socio economic status who are incapable to undergo regular health check up because of financial inadequacy, 80% of the new cervical cancer cases occur in developing countries, like India which contributes about one fourth cases of the globe every year<sup>11</sup>.It is estimated that about 9 million new cancer cases are diagnosed every year and over 4.5 million people die from cancer each year in the world .INDIA: The estimated number of new cancers in India per year is about 7 lakhs and over 3.5 lakhs people die of cancer each year. Out of these 7 lakhs new cancers about 2.3 lakhs (33%) cancers are tobacco related. There would be about 1.5 lakhs cancer cases at any given time in Karnataka and about 35,000 new cancer cases are added to this pool each year.<sup>3</sup>

Many studies have highlighted that the main reason for poor coverage of screening campaign of cancer of cervix in India is due to lack of information ,unavailability of resources even various preventive methods are available in India ,The Study depicts that none of the woman have received HPV Vaccine and unaware of benefits of it .almost eighty five percent of females and had poor knowledge and expressed community clinical outreach services helps in enhancing and active participation in such screening programmes <sup>15</sup>.

Many advanced evidence based screening programmes are available for detecting precancerous lesions ,if these are treated effectively by simple treatment can prevent preceding into invasive cervical cancer<sup>13</sup>.Periodical implementation of population based screening programmes in developed country has been reduced 85% of incidence and mortality related to Ca

of cervix. Whereas only 5% of women were screened in developing countries annually with expenditure of 5% resources leading into diagnosing at 3<sup>rd</sup> or 4<sup>th</sup> stage with estimation of 60 to 80% of cases<sup>12</sup>.

Revolution in lifestyle and socio-demographic characteristics are pleasuring variety of iceberg diseases among pupils located in middle income countries acquiring second most carcinoma of cervix among famines alone. Many of the research studies have highlighted lack in accessibility of material and badly structured heath care units are important reason for elevation in occurrence of new cases. The popularized cancer center TATA Memorial uttered that alertness and utilization of simple screening methods of precancerous lesions of cervix at peripheral area by help of VIA or VILI might bring down incidence of cervical cancer<sup>14</sup>.

A Study by Awasthy S et.al on awareness and practice of Screening related to CA of cervix among female residing in rural area of Kerala reveals that majority were unacquainted about risk factors of Cervical cancer .even though 3/4<sup>th</sup> study participants were aware about screening test for early detection only around 7% have undergone pap test .two studies of Tamilanadu and Maharashtra reveals that only 2.6 % coverage of screening among women in age group of 18-69 at India .<sup>16</sup>

### Objectives Stated and objectives achieved

- To determine the prevalence of cervical precancerous lesion among healthy women
- To find out the association between the precancerous lesions with selected demographic lesions

### Hypothesis

H<sub>0</sub>: There is no significant association between the prevalence of precancerous lesion with selected demographic variables

H<sub>0 1</sub>: There is significant association between the prevalence of precancerous lesion with selected demographic variables

## Materials and Methods

**Research Variable:** Cervical Precancerous Lesions

**Baseline Variables:** Age, Occupation, Marital status, Age at Marriage, Number of pregnancy, last menstruation, Miscarriage, income of family, Nature of discomfort

**Source of data:** Data is collected from Healthy woman from selected rural area of Vijayapur District

**Research design-**Descriptive Research design

**Setting:** Study was conducted in selected Community health center of Vijayapur District

**Sample:** In this study the sample consist of Healthy women

**Sampling Technique:** In this Study the sampling Technique used was Purposive sampling Technique

**Sample size:** The sample size for the present study consist of 600 healthy women

## Result and Discussion

**Table No 1: Association between cervical Precancerous lesions with selected demographic variable.**

Sl. No	Demographic variables	Precancerous lesions		Chi-square value	d.f	P-value
		Negative	Positive			
1	Age					
	18-24	94	04	3.06	3	0.38(NS)
	24-30	128	12			
	30-36	96	06			
	≥ 36	252	08			
2	Age at Marriage					
	15-18	324	20	0.417	1	0.51(NS)
	18-21	238	10			
3	Education Status					
	Non Formal	160	06	5.84	4	0.21(NS)
	Primary	158	14			
	Secondary	152	06			
	PUC	70	00			
	Degree Above	30	04			
4	Last Menstruation					

**Cont... Table No 1: Association between cervical Precancerous lesions with selected demographic variable.**

	Less than 15 days	206	14	0.92	2	0.62(NS)
	15-30 Days	290	14			
	More Than 30 days	74	02			
5	No. of. Pregnancies					
	NIL	58	02	3.98	2	0.13(NS)
	1-2	204	04			
	> 2	308	24			
6	Miscarriage					
	Yes	370	26	3.05	1	0.08(NS)
	No	200	04			
7	Income					
	5000-10000	274	16	0.29	2	0.8(NS)
	10000-15000	190	10			
	≥15000	106	04			
8	Religion					
	Hindu	464	22	5.25	3	0.15(NS)
	Muslim	90	04			
	Christian	10	02			
	Others	06	02			
8	Occupation					
	Housewife	256	10	1.34	3	0.71(NS)
	Coolie	236	16			
	Private Job	56	02			
	Government Job	22	02			

It was clear that cervical Precancerous lesions were not associated with any of the selected demographic variables & does not have its influence on occurrence of cervical Precancerous lesions among healthy women

A Cervical visual inspection with acetic acid as an alternative screening test for cervical cancer detection VIA and Pap smear tests were performed on 468 women in Iran. The result shows that 43 patients had positive VIA and 23 patients had positive Pap smear results.

Sensitivity, specificity, positive predictive value and negative predictive value of VIA were 66.7%, 55.1%, 18.6% and 91.5%, respectively and for Pap smear test they were 75%, 82.1%, 39.1% and 95.5%, respectively. Test accuracy for VIA and Pap smear were 56.7 and 81.1, respectively. It concludes that VIA has high sensitivity but low positive predictive value. By considering the low price of this test and its availability, it can be proposed as

a screening method in cervical cancer.<sup>7</sup>

The study conducted by Bhattacharyya et.al, reveals that the incidence of CIN is more[30%] in Poor economical condition with enhancement of cervical cancer upto 3% in the similar group with reason of lack of personal hygiene, low standard of living conditions, early age sexual contact, lack of education and multiple relationship.<sup>13</sup>

**Table no – 2: Association between cervical Precancerous lesions with visual examination findings**

Sl.NO	Visual Examination	Precancerous lesions		Chi-square value	d.f	P-value
		Negative	Positive			
	Normal	472	12	16.74	1	0.0001(S)
	Abnormal	98	18			
	Cervicitis					
	Absent	240	22	5.64	1	0.01(S)
	Present	330	08			
	Veginitis					
	Absent	464	30	3.3	1	0.06(NS)
	Present	106	0			
	White Discharge					
	Absent	570	18	116.3	1	0.0001(S)
	Present	0	12			
	Others					
	Absent	244	14	0.70	1	0.40(NS)
	Present	41	1			

Table no 2, Reveals that prevalence of cervical Precancerous lesions was highly associated with visual examination findings such as cervicitis, white discharge, and abnormal findings. Although the Pap smear remains the most common screening test for cervical cancer, many less developed countries do not have adequate resources to implement cytology-based prevention

programs. An alternative, low-cost test, visual inspection using acetic acid (VIA), has emerged for use in low-resource settings where it can be performed by auxiliary health professionals. VIA is similar to colposcopy in that acetic acid is applied and any acetowhite lesion is visualized<sup>9</sup>. By considering the low price of this test and its availability, it can be proposed as a screening method

in cervical cancer.

A study by A Omole –Ohonsi recommends that VIA can be adopted as alternative screening technique especially at poor resource setting with hopes for better services to needy women<sup>12</sup>

### Recommendations

In northern part of Karnataka the data related to prevalence of cervical cancer is not available. By considering the low price of VIA test, it can be proposed as a screening method in cervical Precancerous lesions.

Screening helps for early treatment and prevents further complications. Hence it can be used as alternative screening modality for cervical cancer in low resource locations.

A similar study can be conducted on a large sample may help to draw more definite conclusions and make generalization

A similar study can be undertaken for sensitization of women to undergo screening of precancerous lesion

### Conclusion

Presently cervical cancer has become most common among women dragging second position among mortality among females .many evidence based low resource setting screening techniques are available still many of the health centers had delayed in implementation leading into severity of it among women this can be resolved by adopting simple low cost technique that is VIA

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**Ethical Clearance Certificate:** ethical clearance certificate were obtained from institutional ethical

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