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## An educational interventional study on knowledge, attitude of cervical cancer among nursing students of HKES' college of nursing, Kalaburagi

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### Abstract

**Introduction:** Cervical cancer is one of the most common cancers in women, with an estimate of 468,000 new cases annually in the world, 80% of these countries. India accounts for one-fifth of the world burden of cervical cancer the incidence of cervical cancer has declined in western countries following the introduction of screening programs which are often rudimentary or nonexistent in countries like India due to infrastructural, financial and personnel constraints. In developing countries like ours, more than three fourths of cervical cancer patients are diagnosed at advanced stages leading to poor prospects of long-term survival and cure.

### Objectives

1. To assess the awareness of nursing students on aetiology, symptoms, risk factors, and prevention of cervical cancer.
2. To assess the effect of educational intervention regarding risk factors, and prevention of cervical cancer

**Methodology:** An educational interventional study was done after calculate the sample size 110. Pretest awareness level was asses using a questionnaire and educational intervention was given and posttest date was collected after applying the same questionnaire. The statistical significance was set at 5% ( $p < 0.05$ ). Appropriate statistical test was applied to determine the effectiveness of educational intervention.

**Results:** A total 110 nursing girl students belonging to 3<sup>rd</sup> and 4<sup>th</sup> year BSC were registered for our study. About 63.6% nursing students were aware about the disease. More improvement in their knowledge was seen in areas related to disease, screening methods, Prevention aspects, vaccine and symptoms with mean paired differences of 1.36, 2.064, 0.209, 1.055 and 1.067 respectively.

**Conclusion:** This study highlights inadequate knowledge about cervical cancer, its screening and prevention amongst the nursing students. Implementation of the educational sessions was successful in improving their knowledge. Study highlights the need to undertake similar community based studies about awareness and education interventions.

**Keywords:** Ca cervix, Educational Interventional study, Knowledge, Attitude

### Introduction

Cervical cancer is one of the most common cancers in women, with an estimate of 468,000 new cases annually in the world, 80% of these countries.<sup>1</sup> India accounts for one-fifth of the world burden of cervical cancer<sup>[2]</sup>. The incidence of cervical cancer has declined in western countries following the introduction of screening programs which are often rudimentary or nonexistent in countries like India due to infrastructural, financial and personnel constraints<sup>[3]</sup>. In developing countries like ours, more than three fourths of cervical cancer patients are diagnosed at advanced stages leading to poor prospects of long-term survival and cure<sup>[4]</sup>.

Overall, the most commonly reported types of cancer in India were cervical, breast, lip/oral cavity, lung, and esophagus. The lifetime risk of being diagnosed with cancer or dying from cancer before age 75 years was similar for males and females, with males experiencing a slightly lower lifetime risk of developing cancer (10%) before age 75 years as compared to females (11%)<sup>[5]</sup>. Most women with cervical cancer present with advanced disease, resulting in low cure

Rates [6]. Cervical cancer is an infection-related cancer caused primarily by the human papilloma virus (HPV). There are more than 100 different types of HPV [7].

Several tests have been developed to screen women for cervix pre-cancers and cancers. The choice of the test will depend on its technical performance, cost-effectiveness, the available resources and the socio cultural settings in which it is to be used [8].

Conventional cytology based screening with pap smear test developed by George Papanicolaou has been the mainstay of cervical cancer prevention worldwide since the 1950's. Pap test has repeatedly demonstrated good specificity ranging from 86% to 100%.<sup>9</sup>Cytology based screening programmes are labor intensive and logistically burdensome. They require multiple visits by the women for various reasons like screening, obtaining the results follow up investigations and treatment in case of abnormal smears. Thus, despite the low consumable cost, high quality cytology is expensive in absolute terms and may not necessarily be the most cost-effective option for screening [10].

If early diagnosis is made at a pre-cancerous stage, invasive cervical cancer can be prevented. Medical personnel, health-care authorities and women must join hands together to make the screening program a success.<sup>11</sup>The success and benefit of a public health program to control and prevent cervical cancer will depend to a great extent on the level of awareness of the potential beneficiaries about different basic aspects of the disease especially to the health workers [12].

Comprehensive health education programmes by health workers, nurses are more likely to be beneficial to encourage screening [13]. Therefore, nurses have an important task of imparting information on risk factors, detection of early signs of cervical cancer and encourage women to perform cervical cancer screening regularly. This can be achieved by conducting additional education programmes for nurses [14].

Currently, scanty information is available on knowledge base of the Indian nurses on cancer of the uterine cervix. The epidemic of cervical cancer can be reduced with the proper awareness and practice of cervical cancer prevention measures. Hence, this study would like to determine the awareness and practice of cervical cancer prevention measures among nursing college students of Kalaburagi city, India.

**Objectives**

1. To study the awareness of nursing students on aetiology, symptoms, risk factors, and prevention of cervical cancer.
2. To study the effect of educational intervention regarding risk factors, and prevention of cervical cancer.

**Methodology**

**Study subjects:** All nursing students of H K E S' College of Nursing, Kalaburagi.

**Inclusion criteria**

1. All those students who are available on the days of the study
2. All those students who are willing to participate in the study

**Exclusion criteria**

1. All the male students of the college

**Study design**

An educational interventional study.

**Sample size**

In a study done in India, the magnitude of awareness of cervical cancer among paramedical students was 80% [15]. For estimating sample size for the present study it proposed to assume the same prevalence rate of 80%, the required sample size for the study has been estimated to be 100 with alpha error of 5%.

The sample size has been estimated employing the below mentioned formula.

$$n = \frac{Z^2_{\alpha/2} p q}{L^2}$$

Where Z is level of significance, which is 1.96 at 95% CI.

Where p=80 and q=100-p, 95% CI.

L is allowable error /relative precision, which is 10.0% of p

$$n = \frac{(1.96)^2 \times 80 \times 20}{(8.0)^2}$$

n=100

Assuming 10% non- response, the sample size for the present study was agreed to be 100+10=110.

**Method of statistical analysis**

The data was entered in Microsoft office 2010 excel sheet. Data analysis was done by using SPSS version 20.0. Quantitative variables such as age were expressed in terms of descriptive statistics such as mean and standard deviation as required. The statistical significance was set at 5% (p < 0.05). 't' statistical test was applied to determine the effectiveness of educational intervention. Mann whitney U test was applied to determine the factors which are influencing the level of knowledge. Pearsons correlation was done to determine the correlation between the knowledge and attitude.

**Methodology**

An interventional study was conducted amongst B.Sc. Nursing students and diploma nursing students in H K E S' college of nursing, Kalaburagi during the period of September 2017 to assess their knowledge on etiology, symptoms, risk factors, screening and prevention of cervical cancer. Institutional Ethical committee approval and informed consent of the subjects was obtained prior to the start of the study. Permission to undertake study among nursing students was obtained from the respective Principal. All those students who were available on the days of the study and willing to participate in the study were included as study samples.

**Pre-Test:** To evaluate different aspects of basic knowledge and awareness on cervical cancer, the nursing students was offered a structured questionnaire to collect information. Confidentiality was ensured by asking them not to write their names. All the students answered the questionnaire voluntarily and independently in their own classes under the

supervision of interviewers (authors). First part of the questionnaire was to collect information on age, socioeconomic status and family size. The second part contains questions pertaining to, knowledge, aetiology, symptoms, different risk factors, screening methods and prevention. To grade the overall knowledge we have used Cervical Awareness Scale which consist of 11 questions containing questions related to etiology and risk factors.

**Intervention:** Educational intervention was conducted through one session of 60 minutes. The training was conducted by participatory learning approach which included icebreaking, lectures using power-point, chalk and talk and question-answers. The topics discussed were related to prevalence and causation of cervical cancer, symptoms, risk factors, screening methods and prevention. **Post-test:** The same questionnaire was administered to the study subjects after 48hrs of the session.

**Results**

**A total 110 nursing girl students belonging to 3<sup>rd</sup> and 4<sup>th</sup> year BSC were registered for our study.**

**Table 1:** Distribution based on age of the students

Age in years	Frequency	Percent
18	11	7.3
19	24	16.0
20	33	22.0
21	12	8.0
22	24	16.0
23	6	4.0
Total	110	73.3

The above table shows that majority of the students 22%

**Table 5:** Effect of Educational intervention among the nursing students

Characteristics	Mean score		Paired difference		t-value	Significance (p value)
	Pre	Post	Mean	SD		
Knowledge about the disease	2.86	4.23	1.36	1.607	-8.900	0.00
Knowledge about the lifestyle prevention	4.85	4.65	0.209	2.367	0.922	0.358
Knowledge about the vaccine	0.85	1.90	1.055	1.116	9.914	0.00
Knowledge about the symptoms	3.60	6.25	2.65	2.632	10.54	0.00
Knowledge about cytology	1.15	2.34	1.182	1.473	8.417	0.00
Knowledge about screening	1.54	3.64	2.064	1.64	13.12	0.00
Attitude towards the disease	1.62	2.62	1.00	1.401	7.85	0.00

**Table 6:** Comparison of overall knowledge about the disease with the age group using CAM scale

CAM scale	AGE in years	N=110	Mean Rank	p-value*
Pre test	>20	66	52.35	0.203
	≤20	44	60.23	
Post test	>20	66	53.53	0.424
	≤20	44	58.45	

\*Mann Whitney test

Although the mean rank was higher in the age >20 yrs group when compared to the mean rank of the ≤20 age group there was no significant difference between the two group. Similar findings were observed both the pretest and posttest group.

were in the age group of 20 years followed by 16% in both 19 years and 22 years.

**Table 2:** Distribution based on marital status of the students

Marital status	Frequency	Percentage
Married	10	6.7
Unmarried	100	66.7
Total	110	73.3

The above table shows that majority of the students 66.7% were married followed by 6.7 % unmarried.

**Table 3:** Distribution based on area of the students

Area	Frequency	Percentage
Rural	61	40.7
Urban	49	32.7
Total	110	73.3

The above table shows that most of the students 40.7% were from rural area and 32, 7% were from urban area.

**Table 4:** Distribution based on socioeconomic status of the students

Socioeconomic status	Frequency	Percentage
II	32	21.3
III	56	37.3
IV	20	13.3
V	2	1.3
Total	110	73.3

The above table shows that most of the students 37.3% were belonging to class III followed by 21.3%, 13.3%, and 1.3% belonging to class II, class IV, and class V respectively.

**Table 7:** Comparison of overall knowledge about the disease with marital status using CAM scale

CAM scale	Marital	N=110	Mean Rank	P value*
Pre test	Married	10	59.00	0.715
	unmarried	100	55.15	
Post test	Married	10	50.50	0.600
	unmarried	100	56.00	

\*Mann Whitney test

Although the mean rank was higher in married group when compared to the mean rank of the unmarried group there was no significant difference between the two groups. Similar findings were observed both the pretest and posttest group.

**Table 8:** Comparison of overall knowledge about the disease with SES using CAM scale

CAM scale	SES2	N=110	Mean Rank	P value*
Pre test	Upper SES	31	54.15	0.708
	Lower ses	79	56.03	
Post test	Upper SES	31	56.44	0.846
	Lower SES	79	55.13	

\*Mann Whitney test

Although the mean rank was higher in lower SES when compared to the mean rank of the Upper SES group there was no significant difference between the two groups. Similar findings were observed both the pretest and posttest group.

**Table 9:** Comparison of overall knowledge about the disease with area using CAM scale

CAM scale	Area	n=110	Mean Rank	P value*
Pre test	urban	61	61.26	0.034
	Rural	49	48.33	
Post test	Urban	61	51.47	0.136
	Rural	49	60.52	

\*Mann Whitney test

Although the mean rank was higher in urban when compared to the mean rank of the rural group there was a significant difference between the two groups before intervention. But after intervention there was no significant difference between rural and urban groups.

**Table 10:** The correlation of mean score of KAP of cervical cancer among respondents (pre-test)

		mean±SD	Knowledge	Attitude
Knowledge	Pearson correlation	2.86±1.62	1	0.121
	Sig.(2-tailed)			0.02
Attitude	Pearson correlation	1.62±1.44	0.121	1
	Sig.(2-tailed)		0.02	

There was a correlation between the mean scores of knowledge and attitude (r=0.121,p=0.02)

**Table 11:** The correlation means score of KAP of cervical cancer among respondents (Post-test)

		mean±SD	Knowledge	Attitude
Knowledge	Pearson correlation	4.64±1.40	1	-.340
	Sig.(2-tailed)			.000
Attitude	Pearson correlation	2.62±1.60	-.340	1
	Sig.(2-tailed)		.000	

There was a correlation between the mean scores of knowledge and attitude (r=0.340, p=0.00).

### Discussion

It was observed that very few (11.5%) of the participants could correctly answer the questions pertaining to aetiology of cervical cancer. In a study done by Urasa M among nurses in a hospital in Tanzania 38.7% could correctly identify HPV infection as the aetiology [16]. These results are similar to other studies done elsewhere showing less than Satisfactory knowledge about the cause of cervical cancer in the community as well as Among the health professionals [17]. Our study observed that less than a quarter of them could correctly tell what HPV is. Low level of awareness regarding the same was observed in study conducted by Cristina H Rama *et al.* in Brazil [18].

These results again show insufficient knowledge of HPV

infection being the cause of cervical cancer in health professionals, even though 98% of cervical cancer in our part of the world is due to HPV infection, as reported in a study done by Das B C *et al.* in India [19].

Only 60% of the students in our study were aware of any screening method being available and only 9.3% could correctly answer the method available. Adele *et al.* in their study among nurses observed that 65.5% of them were aware of Pap smear as a screening test for cervical cancer [20].

Higher level of knowledge was observed regarding the different risk factors of cervical cancer. Similar findings were observed in a study done in Kolkata by A Saha *et al.* [21] and Teresa Joy *et al.* in their study in India [20].

Here we observed that only a (63.6%) were aware of the symptoms of cervical cancer. On the basis of these findings it can be expected that considering the knowledge about this disease in the nursing students, the knowledge in general population of our country will be even less. This emphasizes the need to increase the awareness about cervical cancer in nursing students who are involved in the primary care of general patient population and form an important source of guidance for them

Majority of them (64.2%) said that cervical cancer is preventable but only 20.6% of them were aware of the available vaccine. Low level of awareness (9%) about vaccine was also observed in a study done in Karachi by Syed Faizan Ali *et al.* [17]. Similar findings were noted by Muhammad Ehsanul Hoque conducted among university students in South Africa [22].

Significant improvement was seen in the knowledge post-intervention by application of paired *t*-test. More improvement in their knowledge was seen in areas related to disease, screening methods, Prevention aspects, vaccine and symptoms with mean paired differences of 1.36, 2.064, 0.209, 1.055 and 1.067 respectively.

Papa *et al.* in their study on educational intervention on women also concluded that their knowledge regarding Human Papilloma Virus, cervical cancer and screening statistically improved after the intervention [23].

Similar results were noted by Lin *et al.* in their study that educational program led to improvement of Taiwanese women’s knowledge and practices related to cervical cancer screening [24]. Thani *et al.* in their study done on school teachers concluded that the study intervention had a significant positive impact on women’s knowledge about cervical cancer screening and also they commented, “those exposed to educational sessions showed some improvement in their knowledge regarding Pap smear test” [25].

Taiwanese AI in their study concluded that improve awareness of the population have resulted in early detection of and improved survival from cervical cancer in a backward rural region in western India [26]. This therefore highlights the need for continuing educational intervention amongst the nursing students.

### Conclusion

This study highlights inadequate knowledge about cervical cancer, its screening and prevention amongst the nursing students. Implementation of the educational sessions was successful in improving their knowledge. Continuing Educational interventions should be started at the institute level which highlights the importance of screening and prevention of cervical cancer in women. Nursing staff

especially if properly aware of this disease can educate masses, increase the health seeking behavior in women and thus reduce the burden of cervical cancer. Study highlights the need to undertake similar community based studies about awareness and education interventions.

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### Limitation

Owing to the limitation of time, we could not assess the change in the practice.

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