

# Effect of Structured Education on Knowledge Regarding Prevention of Cervical Cancer among A.N.M. Students

Nootan R. Mali<sup>1</sup>, Ramling Mali<sup>2</sup>

<sup>1,2</sup> Associate professor, Department of Medical Surgical Nursing,  
Institute of Nursing Education & Paramedical Sciences, Dombivli (E), India

**Abstract:** *Nursing is an integral part of the health care system and nurses direct their energies towards the promotion, maintenance & restoration of health. Cervical cancer is the 2nd leading cause for the mortality amongst women in cancer death. Therefore study was aimed to assess the effectiveness of structured education on knowledge regarding prevention of cervical cancer among A.N.M. students*  
**Objectives:** *To assess the knowledge regarding prevention of cervical cancer among A.N.M. before and after education, and To find out the Correlation between knowledge with the selected socio-demographic variables. Methodology: A quasi-experimental, single group pretest-post test design was used, on 80 ANM student nurses from School of Nursing with convenient sampling technique. Results: The findings showed that ANM student nurses have deficit knowledge regarding prevention of cervical cancer. Conclusion: The finding of the study shows that ANM student Nurses knowledge regarding prevention of cervical cancer was inadequate thus structured education helps to enhance the knowledge of ANM student nurses regarding prevention of cervical cancer to equip them in care of women in rural area as female field worker.*

**Keywords:** Knowledge, Prevention of Cervical Cancer

## 1. Introduction

Cervical cancer is the second largest cause of cancer deaths in women worldwide. Awareness of cervix cancer, its causes and the screening program can help in reduction of morbidity & mortality among women & helps to reduce disease burden on health care services [1].

Cervical cancer is cancer of the cervix i.e. the opening of the uterus, extending into the upper end of the vagina [2]. Cancer of the uterine cervix is still the most common cancer among women in India. The most significant risk factor for cervical cancer is infection with the human papillomavirus (HPV) which can be transmitted during sex[3] Other risk factors includes the changing sexual behavior in young adults might lead to another wave of cervical cancers. Early age at first intercourse, multiple sexual partners, poor sexual hygiene, repeated child birth smoking, immunodeficiency, having a history of cancer etc are some of the reproductive risk factors for cervical cancer. Cervical cancer usually grows slowly over many years it may present with vaginal bleeding but symptoms may be absent until the cancer is in its advanced stages. Before true cancer cells develop, the tissues of the cervix undergo changes called dysplasia, or precancerous these precancerous have the propensity to invade and become cancerous. They can invade tissues more deeply, into either the vagina or the uterus, and ultimately metastasize to other parts of the body that a pathologist can detect in a Pap smear. These changes range from mild dysplasia or cervical intraepithelial neoplasia (CIN1) to moderate (CIN2) to high-grade lesions (CIN3). They can also resemble cancer cells without invasion, also known as carcinoma in situ [4].

The naming and classification of cervical carcinoma precursor lesions has changed many times over the 20th century. The World Health Organization classification

system was descriptive of the lesions, naming them mild, moderate or severe dysplasia or carcinoma in situ (CIS). The term, Cervical Intraepithelial Neoplasia (CIN) was developed to place emphasis on the spectrum of abnormality in these lesions, and to help standardize treatment. It classifies mild dysplasia as CIN1, moderate dysplasia as CIN2, and severe dysplasia and CIS as CIN3. The most recent classification is the Bethesda System, which divides all cervical epithelial precursor lesions into two groups: Low-grade Squamous Intraepithelial Lesion (LSIL) and High-grade Squamous Intraepithelial Lesion (HSIL). LSIL corresponds to CIN1, and HSIL includes CIN2 and CIN3. More recently, CIN2 and CIN3 have been combined into CIN2/3[5].

The cancer mostly affects middle- aged women (between 40 and 55 years), especially those from the lower economic status who fail to carry out regular health check-ups due to financial inadequacy. In urban areas, cancer of the cervix account for over 40% of cancers while in rural areas it accounts for 65% of cancers as per the information from the cancer registry in Barshi [6] Many study has shown the severity of the disease at Worldwide & the human papilloma virus (HPV) has been linked to at least 70% of all cervical cancer. It is now evident that persistent infection with high-risk human papillomavirus .The FDA recently approved the HPV vaccine Gardasil for the preventive control of HPV, with continued progress in the field of vaccine development, HPV therapeutic vaccines may provide a potentially promising approach for the control of lethal HPV-associated malignancies [7]

## 2. Need for the Study

India has more cervical cancer cases than any other country in the world. The World Health Organization (WHO) estimates that every year more than 130,000 Indian women

are diagnosed with cervical cancer and more than 74,000 die from it. This makes cervical cancer the leading cause of cancer related deaths in India and represents approximately 1/4 of the world's total cervical cancer cases and mortality. The WHO estimates that only about 5 percent of women in the developing world have been screened for cervical disease in the previous five years, compared to 40-50 percent in the developed world [8].

Human papillomavirus (HPV) is the most commonly sexually transmitted infection in the United States. The quadrivalent vaccine now available to protect against it. Many research study has shown that Educational methods are effective on knowledge, attitude, and practice of married women [9] Similar study conducted in Malawians related to fighting against cervical cancer & reported that the knowledge of primary health worker is very poor resulting most of the time mortality is high & quality of life is poor due to unnoticed & undiagnosed cases of cervical cancer [10]. ANM'S are the back bone of the health care services in rural part of the India & shouldering major responsibilities in prevention of the diseases. Researcher felt there is a need to assess the effectiveness of structured education on knowledge regarding prevention of cervical cancer among A.N.M. students.

### **3. Review of Literature**

#### **3.1 Literature Related to Epidemiology Of Cervical Cancer**

India has more cervical cancer cases than any other country in the world. This makes cervical cancer the leading cause of cancer related deaths in India and represents approximately [8]. Relative risk was elevated among women reporting multiple sexual partners' .A history of an abnormal Papanicolaou smear. Neither age at first coitus nor number of births was predictive of risk of *in situ* disease [11]. The incidence and mortality rates of cervical cancer have declined over 80% in developed countries since the advent of successful screening programs; there has been no such trend in developing countries [11]. One out of every five women in the world suffering from this disease belongs to India. More than three-fourths of these patients are diagnosed at advanced stages leading to poor prospects of long-term survival and cure. It is estimated that there were 112,609 new Cervical Cancers in 2004 and this number is expected to rise to 139,864 in 2015 [12].

#### **3.2 Literature related to knowledge attitudes and intentions in prevention of cervical cancer:**

Cervical cancer is a preventable disease hence the knowledge awareness about cervix cancer of women will definitely reduce the incidence of cervical cancer. Attendance of a gynecology clinic, on HPV, cervix cancer awareness and the knowledge and willingness to use HPV vaccine for themselves or their children is very important to protect them from cervical cancer. In Belgium, women who are childless or poorly educated and especially young women should be the targets of campaigns that motivate them to prevent HPV-induced cervix cancer [13].

Cervical cancer is a preventable disease resulting from infection with high-risk types of sexually transmitted human papillomaviruses (HPVs). Participation in cervical cancer prevention programs, including Pap and HPV screening and HPV vaccine acceptance, is crucial for limiting the incidence of cervical cancer. Hispanic women suffer the highest cervical cancer incidence rates in the United States. Health care providers should be prepared to share information with patients that supports and promotes informed decision making about HPV testing and vaccines and their complementary roles in cervical cancer screening and prevention [14].

Worldwide, cervical cancer is the second most common type of cancer among women. Understanding the risks of acquiring HPV and the increased risk for cervical cancer may lead to enhanced vaccine acceptance. This knowledge of prevention strategy will reduce the risk of cervical cancer among women [15]. The role of nurses plays an important role in prevention of cervical cancer as they are key person in health care delivery system. Nurses' knowledge, attitudes and information needs regarding human papillomavirus prevention and to determine factors associated with their willingness to recommend human papillomavirus vaccines are important. Targeted educational efforts are needed to ensure nurses' involvement in the prevention of human papillomavirus-related diseases [16].

Despite knowledge of the gravity of cervical cancer and prevention by screening using a Pap smear, attitudes and practices towards screening were negative. The medical workers who should be responsible for opportunistic screening of women they care for are not keen on getting screened themselves. There is need to explain/understand the cause of these attitudes and practices and identify possible interventions to change them. Medical students leave medical school without adequate skills to be able to effectively screen women for cervical cancer wherever they go to practice. Medical students and nurses training curricula needs review to incorporate practical skills on cervical cancer screening [17].

#### **3.3 Literature related to effects of educational methods on the knowledge, in prevention of cervical cancer**

Female students who participated in this study showed significant increase in their knowledge of HPV one month after a brief educational intervention. If such an intervention can easily be provided in school or a health care setting, it can significantly increase their knowledge base about an infection that is both extremely common and can have a great impact on their health. HPV education should be explored as an inexpensive and easily applied preventative measure for cervical cancer [18].

The nurses retained a significant amount of knowledge two years after this training. In developing countries, inexpensive, community-based educational programs using radio broadcasts and lecture presentations can increase cervical cancer knowledge and improve screening behavior [19]. Education program in prevention of cervical cancer should also be replicated for all female groups including unmarried working women or female adolescents,

university girls to prevent the risk of cervical cancer among females & to eliminate the risk factors A new model in the cervix cancer prevention & prevention education of HPV linked to cervix cancer is effective for unmarried university students in the short term and intermediate duration [20].

### **3.4 Literature related to screening, progress and perspectives in prevention of cervical cancer**

Cervical screening in women aged 20-24 has little or no impact on rates of invasive cervical cancer up to age 30. Some uncertainty still exists regarding its impact on advanced stage tumors in women under age 30. By contrast, screening older women leads to a substantial reduction in incidence of and mortality from cervical cancer. These data should help policy makers balance the impact of screening on cancer rates against its harms, such as overtreatment of lesions with little invasive potential [21].

The women with positive findings on one or both tests underwent colposcopy. Both sensitivity and specificity for VIA were found to be higher in this study concluded that sensitivity and specificity of VIA is high comparable with that of cytology making it a feasible method of screening in countries where access to cytopathology is limited [22]. Bellinson concluded that the sensitivity of VIA equaled or exceeded reported rates for conventional cervical cytology and encouraged continued research into the possibility to treat method for cervical cancer screening [23].

Ngelangel concluded that the acetic acid visualization and VIAM methods are recommended for initial cervical cancer screening in the Philippines [24]. Lawrence looked at the acceptability of cervical screening using direct visual inspection after acetic acid application followed by immediate cryotherapy for CIN among women in rural Guatemala.. This study shows that the “see-and-treat” method with VIA could be accepted by patients in developing countries [25]. Ashing-Giwa K concluded that VIA with acetic acid is very sensitive for ectocervical lesions; with its low cost and ease of use making it very advantageous for a primary screening method in developing countries [26].

Age is an important factor for the allocation of treatment and for survival for patients with invasive cervical cancer. This study adds that elderly patients with malignancies are treated differently, and often have inferior outcomes, compared with younger patients. Several Geriatric patients often tolerate treatment well, and aggressive therapy for patients with cervical cancer should not be withheld based on age alone [27].

## **4. Aims and Objectives**

“To assess the effectiveness of structured education on knowledge regarding prevention of cervical cancer among A.N.M. students

### **4.1 Objectives**

- 1) To assess the knowledge regarding prevention of cervical cancer among A.N.M. students before and after intervention in selected nursing institute.
- 2) To find out the Correlation between knowledge of ANM students with the selected socio-demographic variables.

### **4.2 Assumptions**

1. The ANM students have very little Knowledge regarding prevention of cervical cancer.
2. ANM students are very enthusiastic to learn regarding prevention of cervical cancer.
3. Structured education program on prevention of cervical cancer will help to improve the knowledge among ANM students.

### **4.3 Hypothesis**

- H0:* There will be no significant difference between pre and post test knowledge score regarding prevention of cervical cancer among A.N.M. students.
- H1:* There will be significant difference between pre and post test knowledge score regarding prevention of cervical cancer among A.N.M. students.

## **5. Methodology**

Research methods refer to steps, procedures and strategies for gathering and analyzing data in research involved. Research methodology is a way to systematically solve the research problem. It is a science of studying how research is done scientifically [28]. The study was conducted in two phases:

**Phase I:** Includes assessing the existing knowledge of ANM student nurses regarding “prevention of cervical cancer”.

**Phase II:** Of the study, structured education on, “prevention of cervical cancer was developed and its effectiveness determined.

## **6. Research Approach**

The research method adopted for the study was an evaluative approach.

### **6.1 Variables**

#### **1. Independent variable:**

In this study, the independent variable is the structured education on knowledge regarding “prevention of cervical cancer”

#### **2. Dependent variable:**

The dependent variable in the study is knowledge score for the structured education.

#### **3. Extraneous variable:**

In this study the extraneous variables are treated as independent variable.

## 6.2 Research Design

In one group pretest posttest design was used.

A. *Pretest Treatment Posttest*

Day 1 Day 1 Day 7

O1 X O2

**Keys:** O1- Pre-test knowledge score  
O2- Post-test knowledge score  
X- Treatment variable (structured education)

## 6.3 Setting of the Study

The study was conducted at the, Nootan School of Nursing, Raigad & Aparna institute of Nursing education Karad. These institutes were chosen because this was convenient to the investigator; these institutes are affiliated with Government hospital & recognized by Maharashtra & Indian nursing council.

## 6.4 Population, Sample And Sampling Techniques

### i. Population

The study population consisted of the ANM student nurses studying at Nootan School of nursing Raigad & Aparna institute of nursing education Karad district.

### ii. Sample size:

Sample size for this study was 80.

## 6.5 Sampling technique

In present study purposive sampling technique was used.

## 6.6 Sampling Criteria

### Inclusion criteria

1. Student Nurses studying at Nootan School of Nursing Raigad & Aparna Institute of Nursing Education, Karad.
2. Nurses who are willing to participate in the study.
3. Nurses who are present at the time of data collection.

### Exclusion criteria

1. Those who are not willing to participate in the study.
2. Those who are not attending during the study.

### Description of the final instrument

The Questionnaire consisted of two sections.

#### Section I:

This section included items seeking information on demographic background, age, educational qualification, marital status, residential area, experience of imparting health education on prevention of cervical cancer, getting knowledge through media & the participant's involvement in nursing care with patient suffering from cervical cancer.

#### Section II:

Consisted of 41 items categorized under the following broad areas Anatomy and physiology, Disease, Causes, Signs and symptoms, Diagnostic tests, Prevention & Treatment modalities

## 6.7 Data Collection Process

The study was conducted from **01/04/2010 to 10/05/2010**. The investigator personally contacted each selected subject and their informed written consent was obtained after explaining the purpose of the study. Questionnaire was administered to each one, who was asked to fill it then and there. After pretest, structured education was provided to the student in a group. The posttest was conducted after 9 days.

## 7. Results

The demographic data

The table 1 shows various sample characteristics and their frequency & percentage n=80

Sr.No	Description	Frequency	%	p value
1.	Age in Years			
	16-20	55	68.8	.789
	20-25	19	23.8	
	25-30	3	3.8	
	30 & above	3	3.8	
2.	Marital status			
	Married	9	11.2	.411
	Unmarried	71	88.8	
3.	Education			
	SSC	26	32.5	.399
	HSC	49	61.3	
	BA/B.Sc/ B.Com	4	5.0	
	Other(Specify)	1	1.2	
4.	Residence			
	Urban	20	25.0	.424
	Rural	60	75.0	
5.	Previous involvement in Health Education			
	Yes	14	17.5	.287
	No	66	82.5	
6.	Prior come across Patient of Cervical Cancer			
	Yes	5	6.2	.551
	No	75	93.8	
7.	Received information through media			
	Yes	42	52.5	.203
	No	38	47.5	

Majority 68.8 % of the samples were in the age group of 16-20 (Years), 23.8 % of them were from 20-25 (Years), 3.8 % were from 25-30 (Years), 3.8 % were from above 30 (Years). ANM nursing students 11.2 % of them were Married, While 88,8 % of them were unmarried

ANM students were having educational qualification of SSC 32.5%, HSC 61,3%, 5% Graduate & 1.2 others respectively. Majority 75 % of the subjects from rural area & 25% subjects from urban area. While 17.5 % of the samples were having previous experience of imparting health Education on prevention of cervical Cancer and 82.5% samples are not having any experience of imparting health Education on prevention of cervical Cancer. 93.8 % of the total samples had no previous exposure to patients with cervical cancer & only 6.2 % of the samples are exposed to patients with cervical cancer



**Table 2:** scores of ANM student nurses regarding knowledge on prevention of cervical cancer

Description /score	Pre teaching		Post teaching	
	Freq.	%	Freq.	%
1-19(poor)	75	93.8	0	0
20-29 (average)	5	6.2	39	48.8
30 & above(good)	0	0	41	51.2

In this table 2 it can be observed that pre instructional teaching 75 (93.8%) samples scored in the poor range of 1 – 19 in the pretest, but in the posttest the data shows that 0 (0%) samples scored in the range of 1 – 19. Thus the structured education was able to improve the scores from poor to good.

In this table 2 it can be observed that pre instructional teaching 5 (6.2%) samples scored in the average range of 20 – 29 in the pretest, but in the posttest the data shows that 39 (48.8%) samples scored in the range of 20 – 29. Thus the structured education was able to improve the scores from average to good.

In this table 2 it can be observed that pre instructional teaching 0 (0%) samples scored in the good range of 30 and above in the pretest, but in the posttest the data shows that 41 (51.2%) samples scored in the range of 30 and above. Thus the structured education was able to improve the scores without any score to good.

A paired t – test was used to calculate the effect of the structured education on the knowledge of student nurses regarding prevention of cervical cancer. The result shows that there is a highly significant difference between the pretest & posttest knowledge scores. The pretest and posttest knowledge scores were compared in each area of as per the blue print. A paired ‘t’ test was used to find the difference between the knowledge scores.

## 8. Discussion

The findings showed that ANM student nurses have deficit knowledge regarding prevention of cervical cancer. The total pretest mean score secured by ANM student nurses are 13.45 on a scale of 1-30. The total posttest mean score secured by ANM student nurses are 28.92 on a scale of 1-30. This shows that the knowledge deficit is around 15.47 % and also this proves  $H_1$ . Subjects had knowledge about anatomy & physiology (M=3.9250), disease (M=2.2375), Causes (M= .8625) score signs & symptoms (M=.7750) score, diagnostic treatment (M= 1.1250) Prevention (M= 4.5250) This shows that the knowledge level of all subjects were inadequate in all areas of prevention of cervical cancer.

It also shows that the ANM student nurses knowledge was very poor in the area of causes, signs & symptoms & good in the area of anatomy & physiology. This finding is comparable to that of post instructional teaching. She found that the baseline knowledge of the subjects about the prevention of cervical cancer was poor in the areas of causes, signs & symptoms etc. The knowledge scores may be good in the which was mainly related to anatomy & physiology most of the student nurses are studied theses

topics The current study reinforces the finding that there is a need for incorporation of more content of prevention of cervical cancer in syllabus of ANM training programme and need for the structured education among ANM students. Thus the finding suggests that the student nurses do not have 100% knowledge regarding prevention of cervical cancer. It is a very important aspect because without knowledge on prevention of cervical cancer student nurses cannot be prepared for assuming responsibility of women health in 10000 populations as Female Health worker which is major health problem among female.

In order to find the relationship between pretest knowledge and selected variable chi – square test was used. The study shows that there is no significant relationship between age, educational qualification, residential area, & marital status on the existing knowledge of student nurse regarding prevention of cervical cancer, exposure to the patient with cervical cancer & getting information through media regarding prevention of cervical cancer.

There was insignificant ( $P < 0.05$ ) association between the level of knowledge of the student nurses and all socio-demographic variables. Since the calculated value of p (0.000) is less than 0.05

Effectiveness of a structured education in terms of gain in knowledge on the prevention of cervical cancer of student nurses:

There was a significant difference between pretest and posttest mean knowledge scores. To find out the significance between the pre & posttest knowledge score, the paired ‘t’ test was used. It was found that there is a highly significant ( $p=0.000$ ), Mean score difference between the pretest & posttest knowledge score is (M=15.47). This suggests that the structured education has enabled the student nurses to gain knowledge. Further analysis was made for each area to find out the difference between the means. The ‘p’ value was found to be highly significant in all areas.

*Gain in knowledge following administration of the structured education:*

Based on the finding of the study that all the subjects showed an increase in the posttest scores, it could be stated that knowledge through structured education or any other educational material could help to enhance the knowledge of student nurses.

## 9. Conclusion

That ANM student nurses did not have 100% knowledge about the prevention of cervical cancer. They require further education & information because all of them need to enhance their knowledge about the prevention of cervical cancer. There was a highly significant increase in the knowledge of the subjects after the introduction of structure education The paired ‘t’ test computed between mean posttest knowledge score and mean posttest knowledge score, which indicated a highly significant difference in the

knowledge scores in all the areas. Thus it is concluded that the structured education program on knowledge is effective as a teaching strategy.

## **10. Future Scope/Nursing Implications**

Nursing is a service oriented profession and it must advance and keep pace with the advancing technology, newer problems, evidence based practice and growing demands of consumers. The findings of this study have implications for nursing practice, nursing education, nursing administration and nursing research.

### **10.1 Nursing Practice**

When professional liability is recognized, it defines the parameters of the profession & the standards of professional conduct. Nurses should therefore enhance their professional knowledge. The role of nurses has expanded rapidly within the past ten years to include expertise specialization, autonomy & accountability. The patient is considered the consumer of nursing & health care. Thus the nurses who are in the clinical area & the community at large, nurses are the key person of health care services & need to be aware of all types of health problems & their preventive strategies & nurse's responsibility towards them. All the nursing personnel can be provided structure education program to improve their knowledge and integrate it into their practice. Nurses may be able to apply the knowledge in to practice & assume responsibility & accountability for their patients & eventually help to improve the reproductive health of the women & can prevent morbidity & mortality of women due to cervical cancer.

### **10.2 Nursing Education**

Education is the key to the development of excellent nursing practice. Education faces tremendous challenges in keeping pace with changes in nursing practice to maintain its high quality. Nurses must be lifelong learners and they should be given an opportunity for continuing education. Nurses with higher education deliver cost effective care. The educators need to remember that more emphasis is to be given when educating the students about the all aspects of nursing care but more emphasis should be given on the preventive aspects as the stitch in time saves nine. Topic of Cervical cancer should be included in the curriculum of ANM student nurses. Nurse educators when equipped with proper knowledge this will enhance the professional standards of nursing care & education.

### **10.3 Nursing administration:**

The nursing administrators may apply the to improve their knowledge in order to ensure that the nurses may detect the cervical cancer at early stage & improve the quality of life a structured education may be provided to female field worker / ANM nurses , who are working rural area,

## **10.4 Nursing research**

Research plays a vital role in nursing. There is a need for extended and intensive nursing research in the areas women's health problems. India is still lacking in health care services and mortality is high due to the cervical cancer , which is preventable in nature in interior part of the country where the high end health facilities are inadequate & out of reach from community. Extensive research is needed in this area so that student nurses can become more aware about the prevention of cervical cancer & can utilize knowledge in nursing services.

## **11. Suggestions**

1. ANM Working in district places should emphasis on the subject matter related to legal prevention of cervical cancer as it is major health problem in India & it is today's need.
2. The ANM curriculum does not cover many aspects of cervical cancer & its prevention.. It should be upgraded as much as possible.
3. Regular in-service/ workshops ,conferences, educational materials related to prevention of cervical cancer & advance treatment modalities should be provided to the ANM & other diploma & degree courses nurses.

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## Author Profile



**Ramling Mali** is working as Associate Professor, Department of Medical Surgical Nursing, Institute of Nursing Education & Paramedical Sciences, Dombivli (E)

**Nootan R Mali** is working as Associate professor in Department of Medical Surgical Nursing, Institute of Nursing Education & Paramedical Sciences, Dombivli (E)