A Descriptive Study to Assess the Knowledge of Staff Nurses Regarding Human Papilloma Virus Vaccine for Prevention of Cervical Cancer in Selected Hospitals of Amritsar with a View to Develop SIM (Self Instructional Module)

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Abstract
Cervical cancer is the one of major woman's reproductive health problems, especially in developing countries, where over 80 percent of the 231,000 yearly deaths from cervical cancer occur. Cervical cancer, like many other illnesses, is a taboo subject in some communities. The concept of preventive screening inevitably raises fears about cancer for many women. The anxiety felt by women (often caused by misconceptions) demands time and attention from health care providers. Information providers to women prior to screening can help alleviate fear and anxiety associated with the screening. Therefore, researcher felt a need to conduct a study on staff nurses to assess their knowledge regarding human papilloma virus (HPV) vaccine for prevention of cervix cancer by providing self-instructional module. A descriptive-survey research design was used with simple random sampling technique to assess the knowledge of staff nurses regarding human papilloma virus vaccine for the prevention of cervical cancer. The study was carried out in Guru Nanak Dev hospital, Amritsar and Civil hospital Amritsar. The sample of study consisted of 100 staff nurses. A self-structured questionnaire was used to assess the knowledge of staff nurses regarding human papilloma virus vaccine for the prevention of cervical cancer. Analysis was done using both descriptive and inferential statistics. Findings of the study showed that majority 52% staff nurses had moderately adequate knowledge regarding human papilloma virus, followed by 43% of staff nurses who had inadequate knowledge regarding human papilloma virus and minority 5% had adequate knowledge regarding human papilloma virus in prevention of cervical cancer. The result revealed that only 5% of staff nurses had adequate knowledge regarding human papilloma virus vaccine for prevention of cervical cancer.

Keywords: Human papilloma virus vaccine, cervical cancer, knowledge, staff nurses

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INTRODUCTION
"There are challenges for countries In terms of cost and so on, but this vaccine is unique and offers tremendous possibilities"

Dr Teresa Agauda {WHO's coordinator for the initiative for vaccine research**}**
Cancer is derived from Latin word cancer meaning "crab". Historically this term was coined to describe neoplastic disease as a certain type of breast cancer, which resembled a crab with claw like growth embedded in the normal tissue. The cancer elicits immediate fear associated with vulnerability, helplessness; describe guilt and fear of death. Cancer refers to a class of diseases wherein, there is uncontrollable division and replication of cells or a group of cells, which at a later stage, intrude into adjacent cells and tissues (invasion) and ultimately spread to other parts of the body

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different from the location at which they arose (metastasis) [1, 2].

Thousands of women are dying each year from cervical cancer. However, these are senseless deaths which can be prevented from simple detection and protection. The cervix is a very important part of a woman's body that helps her to produce life. Education about the cause, effects, and treatments of cervical cancer can help in creating awareness [2, 3].

As per WHO estimates, cancer of the cervix uteri is the second most common cancer among women worldwide, with an estimated 193,000 new cases and 274,000 deaths in 2002. About 83% of the cases occur in developing countries, representing 15% of female cancers. Cervical cancer is the second most common cancer for women between the ages of 15 and 45 years and the third most common cause of cancer related deaths in women. It is a major and devastating cause of mortality worldwide with an estimated global incidence of 5 lakhs new cases and 2.7 lakhs deaths annually among women [3-7].

GLOBAL CERVICAL CANCER BURDEN

In 2009, cervical cancer was the 3rd most common cause of cancer death among women in the world, and had 493,243 new cases. Women at risk for cervical cancer are 2,336,986. 1 year prevalence is 243,884 of cervical cancer in 2009. Annual number of cervical cancer deaths is 273,505. In most developing countries, cervical cancer constitutes 34% of all women cancers. In India, the incidence of cervical cancer in females is 10,0000/year. It is the 1/5th of the world cancer occurrence among women [3-5].

Vaccines have now been introduced to prevent HPV infection, as they protect against the strains of HPV that are most likely to cause cervical cancer. In UK, the girls aged between 12 and 15 are routinely offered the HPV vaccine at school. It takes 15 to 20 years for cervical cancer to develop in women with normal immune system but it can develop more quickly (perhaps in only 5 to 8 years) in women with weakened immune systems. So it is still important for women to carry on with cervical cancer screening. The risk of having an abnormal papanicolou (pap)smear, for women who undergo routine screening, is 35% CIN 20% and ICC is <1%, whereas for women without routine screening the risk is up to 4%. The pap test is used to find cellular abnormalities in cervical tissue, aiding early diagnosis [3-5].

Cervical screening is very important to stop development of cervical cancer. This is one of few cancers that are preventable because pre-cancerous cell changes can be picked up before they have a chance to develop into cancer. More than 50% of sexually active women are exposed to at least one HPV type in their life time because oncogenic HPV infection is necessary for the development of cervical cancer. Prophylactic vaccines are likely to be of value as a primary prevention strategy. It is established that well organized cervical screening programs or widespread good quality cytology can reduce cervical cancer incidence and mortality. The introduction of HPV vaccines could also effectively reduce the burden of cervical cancer in the coming decades. In addition, male circumcision and the use of condoms have shown a significant protective effect against HPV transmission and may offer an alternative preventative strategy.

A first line of defence is to educate women about how to protect themselves against Human Papilloma Virus (HPV), a common infection that causes most cervical cancers. For women at risk of cervical cancer, secondary prevention is the key to save lives. Cervical cancer can

be prevented by using relatively inexpensive screening and the treatment technologies to detect abnormal cervical tissues before it progresses to invasive cancer. Protecting safe sex, regular screening tests and are the best ways to prevent the development of cervical cancer. Health education measures aimed at improving the use of condoms, reducing number of sexual partners and promoting safer sex strategies have been employed with the goal of decreasing the transmission of HPV [8].

These two vaccines are used for decreasing the HPV infection. These vaccines have shown a remarkable improvement in the control of cervical cancer. These vaccines are more efficacious when given to females before the onset of sexual activity while currently available HPV related diseases, they do not protect against all types of the virus and as with other new vaccines the duration of protection is still to be determined [5].

NEED FOR THE STUDY
Cervical cancer is one of the most easily diagnosed malignancies because of its long pre-invasive and preclinical course. Easy accessibility of cervix for examinations, accuracy and limited cost helps in detecting it at a very early stage with 80-90% cure rate. But unfortunately, in many cases patients seek medical advice when the disease is far advanced and not amendable to treatment resulting in poor control [7].

WHO recognizes the importance of cervical cancer and other HPV related diseases as global public health problems and recommends that routine HPV should be included in National immunization programme. Prevention of cervical cancer or other HPV related disease constitutes a public health priority. Include education about reducing behaviour that increases the risk of acquiring HPV infection and

information about the diagnosis and treatment of precancerous lesions and cancer [6, 7].

Oncogenic human papilloma viruses cause 99.7% of all cervical cancers. HPV types 16 and 18 are responsible for approximately 77% of cases and peak prevalence occurs in females younger than 25 years of age. High income countries have successfully reduced the cervical cancer burden by over 70% using one such approach of organized cytological based pap smears. In developed countries, use of two novel prophylactic vaccines and a number of other secondary preventive strategies are being practised. However, most of these interventions are currently not feasible in low income countries because of already limited health care infrastructure [8-11].

The recent implementation of HPV provides females with the opportunity to prevent infection. School nurses can play a key role in promoting HPV related information and be the primary source of knowledge and information for students, prior to the beginning of sexual activity in a student's life.

They can also promote regular cervical screenings for girls as the required information might not be apparent to many students and their parents, so that they can deal with such issues. And for that, school nurses need a firm understanding of HPV and its role in cervical cancer. A greater understanding of HPV disease and prevention among school nurses, students and parents may lead to greater reductions in the burdens of cervical and other HPV related diseases [8].

Nurses can provide health promotion counselling to the needs of the patients they serve. They can fulfil a key role in health promotion, prevention and maintenance whether nurses are working

with women as advanced practice nurses, certified nurse midwives or direct care nurses, they are in an ideal position to provide health education to young girls and women [1].

According to available results and findings of researches and clinical experience, the researcher has found that most of the cervical cancers are secondary to HPV infection and if there is an adequate knowledge regarding HPV among nurses. Then they can impart their knowledge to the society which can help us to reduce the cervical cancer due to HPV infection.

OBJECTIVES
- ✓ To assess the knowledge of staff nurses regarding human papilloma virus vaccine for prevention of cervical cancer.
- ✓ To associate the knowledge score of staff nurses regarding human papilloma virus vaccine with their selected demographic variables.
- ✓ To develop self-instructional module regarding human papilloma virus vaccine for prevention of cervical cancer.

METHODOLOGY
- ✓ A descriptive research design considered appropriate for the present study to assess the knowledge of staff nurses regarding human papilloma virus vaccine for the prevention of cervical cancer with selected variables such as age, qualification, job experience, source of information, place of working experience. A present study was conducted in Guru Nanak Dev Hospital, Amritsar and Civil

Hospital, Amritsar. The selection of the hospital was done on the basis of accessibility to the setting and availability of sample.
- ✓ A sample for study consisted 100 staff nurses was selected and selection was done on the basis of simple random sampling technique who were available in Guru Nanak Dev Hospital and Civil hospital, Amritsar, Punjab.
- ✓ The study was concerned to assess the knowledge score of human papilloma virus vaccine for the prevention of cervical cancer. Self-structured questionnaire tool was developed on the basis of extensive review of literature, exploring internet, self-observation and with the help of experts. It had following sections:
- ✓ Section A: Demographic information of study subjects.
- ✓ Section B: Self structured questionnaire to assess the knowledge of staff nurses regarding human papilloma virus vaccine for the prevention of cervical cancer.
- ✓ *Section A:* This section consisted of five items for obtaining personal information about the subjects such as age, qualification, job experience, source of information, place of working experience.
- ✓ *Section B:* Self structured questionnaire to assess knowledge of staff nurses regarding human papilloma virus for the prevention of cervical cancer. Tool items were 30. Tool was rated as inadequate moderate and adequate. Total score was obtained by adding individual items.

Section-A
Demographic Variables
Table 1: Frequency and Percentage Distribution of Demographic Variable age of Staff Nurses.

N=100

Sr no	Demographic Variables	Frequency	Percentage
1.	**Age**		
	a)21-30	25	25%
	b)31-40	32	32%
	c)41-50	24	24%
	d)51-60	19	19%

Table 1 reveals the frequency and percentage distribution of sample demographic variables. It shows that: According to age, majority 32% of staff nurses belong to age group 31-40, followed by 25% belong to age group 21-30, followed by 24% belong to 41-50 age group, and minority of staff nurses 19% belong to 51-60 age group.

Table 2: Frequency and Percentage Distribution of Demographic Variable Qualification of Staff Nurses.

N=100

2.	**Qualification**		
	a)ANM	22	22%
	b)GNM	34	34%
	c)BSc	18	18%
	d)P.BSc	13	13%
	e)MSc	13	13%

Table 2 reveals the frequency and percentage distribution of sample demographic variables. It shows that: According to qualification, majority of staff nurses i.e. 34% belong to GNM, followed by 22% were ANM, 18% belong to BSc, 13% belong to Post BSc, and least 13% belong to MSc.

Table 3: Frequency and Percentage Distribution of Demographic Variable Job Experience of Staff Nurses.

N=100

3.	**Job Experience**		
	a)0-5 years	24	24%
	b)5-10 years	28	28%
	c)10-15 years	25	25%
	d)more than 15 years	23	23%

Table 3 reveals the frequency and percentage distribution of sample demographic variables. It shows that: According to job experience, majority of staff nurses 28% belong to 5-10 years, followed by 25% staff nurses belong to 10-15 years, followed by 24% staff nurses belong to 0-5 years and minority of staff nurses 23% belong to more than 15 years.

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Table 4: *Frequency and Percentage Distribution of Demographic Variable Source of Information of Staff Nurses.*

N=100

4.	**Source of Information**		
	a)Health professionals	39	39%
	b)Mass media	36	36%
	c)Friends and neighbours	25	25%

Table 4 reveals the frequency and percentage distribution of sample demographic variables. It shows that:
According to source of information, maximum 39% staff nurses got the information from health professionals, followed by 36% staff nurses from mass media and least 25% staff nurses got the information by their friends and neighbours.

Table 5: *Frequency and Percentage Distribution of Demographic Variable Place of Working Experience of Staff Nurses.*

N=100

5.	**Place of Working Experience**		
	a)General medical ward	18	18%
	b)Emergency ward	28	28%
	c)General emergency ward	34	34%
	d)OPD	20	20%

Table 5 reveals the frequency and percentage distribution of sample demographic variables. It shows that:
According to place of working experience, majority 34% of staff nurses belong to general surgical ward, followed by 28% who belong to emergency ward, followed by 20% who belong to OPD and least 18% belong to general medical ward.

Table 6: *Mean, Mean Percentage, Standard Deviation (SD) Knowledge Score of Staff Nurses.*

Level of Knowledge	Mean	Mean Percentage	SD
Staff nurses	12.19	40.63%	4.8

The data depicted in Table 6 shows, mean (12.19), mean percentage (40.63%), standard deviation (4.8), and knowledge questionnaire.

Section-B
Objective Wise Analysis
Objective-1
To assess the knowledge of staff nurses regarding human papilloma virus for the prevention of cervical cancer.

Table 7: *Frequency and Percentage Distribution of Knowledge Score of Staff Nurses Regarding Human Papilloma Virus Vaccine for the Prevention of Cervical Cancer.*

N=100

Knowledge Level	Grading of Knowledge Score	F	%
Inadequate	0-10	43	43%
Moderate	11-20	52	52%
Adequate	21-30	5	5%

Maximum knowledge score: 30; Minimum knowledge score: 0.

The data presented in Table 7 revealed frequency and percentage distribution of staff nurses. Majority of staff nurses i.e. 43% had inadequately knowledge, followed by 52% had moderate knowledge, whereas minority 5% had adequate knowledge.

Objective-2
To associate the knowledge score regarding human papilloma virus vaccine with the selected demographic variables.

This section deals with association between the levels of knowledge of staff nurses.

Association between the Levels of Knowledge Regarding Human Papilloma Virus Vaccine with the Selected Demographic Variables

Table 8: *Association between the Levels of Knowledge Regarding Human Papilloma Virus Vaccine with the Age.*

Sr. No.	Demographic Variables	Total Frequency	Level of Knowledge						χ^2	df	Table Value
			Inadequate		Moderate		Adequate				
			F	%	F	%	F	%	χ^2		
1.	**Age in Years**										
a.	21-30	25	10	10%	14	14%	1	1%	1.93	6	12.59 NS
b.	31-40	32	12	12%	18	18%	2	2%			
c.	41-50	24	13	13%	10	10%	1	1%			
d.	51-60	19	8	8%	10	10%	1	1%			

Table 9: *Association between the Levels of Knowledge Regarding Human Papilloma Virus Vaccine with the Qualification.*

2.	Qualification	F	F	%	F	%	F	%	χ^2	df	Table Value
	a) ANM	22	14	14%	8	8%	0	0%	127.5	8	15.51 S
	b) GNM	34	21	21%	13	13%	0	0%			
	c) BSc	18	5	5%	13	13%	0	0%			
	d) PbBSc	13	3	3%	9	9%	1	1%			
	e) MSc	13	0	0%	9	9%	4	4%			

Table 10: *Association between the Levels of Knowledge Regarding Human Papilloma Virus Vaccine with the Job Experience.*

3.	Job Experience	F	F	%	F	%	F	%	χ^2	df	Table Value
	a)0-5 years	24	8	8%	15	15%	1	1%	3.64	6	12.59 NS
	b)5-10 years	28	11	11%	16	16%	1	1%			
	c)10-15 years	25	14	14%	9	9%	2	2%			
	d)>15 years	23	10	10%	12	12%	1	1%			

Table 11: *Association between the Levels of Knowledge Regarding Human Papilloma Virus Vaccine with the Source of Information.*

4.	Source of Information	F	F	%	F	%	F	%	χ^2	df	Table Value
	a) health professional	39	19	19%	19	19%	1	1%	2.32	4	9.49 NS
	b) mass media	36	15	15%	18	18%	3	3%			
	c) friends and neighbours	25	9	9%	15	15%	1	1%			

Table 12: *Association between the Levels of Knowledge Regarding Human Papilloma Virus Vaccine with the Place of Working Experience.*

5.	Place of Working Experience	F	F	%	F	%	F	%	χ^2	df	Table Value
	a) GMW	18	9	9%	8	8%	1	1%	2.45	6	12.59
	b) EW	28	14	14%	13	13%	1	1%			
	c) GSW	34	14	14%	19	19%	1	1%			NS
	d) OPD	20	6	6%	12	12%	2	2%			

Findings Related to Socio Demographic Variables

✓ Majority 32% of staff nurses belong to age group 31-40, followed by 25% belong to age group 21-30, followed by 24% belong to 41-50 age group, and minority of staff nurses 19% belong to 51-60 age group.

✓ Majority of staff nurses i.e. 34% belong to GNM, followed by 22% were ANM, and 18% belong to BSc, and 13% belong to Post BSc, and least 13% belongs to MSc.

✓ Majority of staff nurses 28% belong to 5-10 years, followed by 25% staff nurses belong to 10-15 years, followed by 24% staff nurses belong to 0-5 years, and minority of staff nurses 23% belong to more than 15 years.

✓ Maximum 39% staff nurses got the information from health professionals, followed by 36% staff nurses got the information from mass media and least 25% staff nurses got the information by their friends and neighbors.

✓ Majority 34% of staff nurses belong to general surgical ward, followed by 28% who belong to emergency ward, followed by 20% who belong to OPD, and least 18% belongs to general medical ward.

IMPLICATIONS

The findings of the present study have several implications which are discussed in following areas.

1. Nursing education,
2. Nursing service,
3. Nursing administration,
4. Nursing research.

Nursing Education

Nursing education emphasizes that health care system should pay more attention to train the nursing personnel on family centred care approach, role of community health nurse in quality assurance, consumer roles and involvement in health care services. Hence the use of education devise strategies should encourage involvement of nursing personnel in health programme to impart knowledge regarding human papilloma virus vaccine for the prevention of cervical cancer.

Planned health education programme by health professionals should be made an ongoing process in the primary health centre, school health services and in the community settings.

Nursing Service

Lack of knowledge among staff nurses is the major cause for increased morbidity

rates. Nursing plays very important role in imparting the knowledge regarding anatomy and physiology of the reproductive system, meaning of cancer and cervical cancer, purpose of cervical screening, risk factors for reproductive tract infection due to poor hygiene. Thus acquisition of knowledge helps in better outcome of health condition. The finding of the study indicates that the nurse in the practice area should encourage individual conversation with the nurse-to-be as part of the basic programme, enhancement of knowledge by providing guidelines. The nurse's involvement in awareness and cervical screening can be better health outcome to have healthy life of the females.

Nursing Administration
Instructions providing maternity services should review their policies and practices regarding knowledge of staff nurses. Nursing administration should necessarily involve in formulating policies, guidelines and health education for expectant staff nurses in hospitals as well as in the community settings. This study finding helps in reviewing policies at administrative level.

Nursing Research
It is essential to identify at present the level of knowledge of staff nurses regarding human papilloma virus vaccine for the prevention of cervical cancer to know the extent of information necessary to be given on talk. The extensive research must be conducted in this area to identify several more effective methods of education. This study also brings about facts that more studies need to be done in different settings, which is culturally acceptable as better teaching strategies of education. This study can be baseline for the future study.

RECOMMENDATIONS
The following recommendations are made on the thesis of the study:
- The study can be replicated on large sample to validate and generalize the findings.
- Similar study can be conducted in different settings like in community.
- Same study can be replicated by including attitude of staff nurses regarding human papilloma virus.
- The study can be conducted to assess the knowledge on HPV infection in women.
- An evaluative study can be conducted to assess the effectiveness of (SIM) on HPV vaccine for the prevention of cervical cancer to aware the nursing personnel.

REFERENCES
1. Black JM. *Medical Surgical Nursing, Clinical Management for Positive Outcome*. 6th Edn. India, Elsevier Science. 2001.
2. Williams Linda S. *Medical Surgical Nursing, Cervical Cancer.* 4th Edn. Jaypee Brothers Medical Publishers (p) Ltd. 996–997p.
3. Brunners, Sudharths. *Textbook of Medical Surgical Nursing, Cervical Cancer*. 11th Edn. Vol.2. Wolters Kluwer (India) Pvt Ltd. New Delhi. 2009; 1682–1685p.
4. Cason J, *et al.* Perinatal Acquisition of Cervical Cancer-Associated Papilloma Viruses. *Br J Obstet Gynecol.* 1996; 103(9): 853–858p.
5. Lazcano-ponce EC, *et al.* Barriers to Early Detection of Cervical-Uterine Cancer. *J Womens Health.* 2001; 8(3): 399–408p.
6. McCaffery K, Irwig L. Australian Women's Needs and Preferences for Information about Human Papilloma Virus in Cervical Screening. *J Med Screen.* 2005; 12(3): 134–141p.

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7. Yang BH, Zhang ZF. Cervical Cancer as a Priority for the Prevention in Different World Regions; An Evaluation Using Years of Life Lost. *Int J Cancer*. 2004; 109(21): 418–24p.

8. Dailard. *Indian J Med Paediatr Oncol*. 2006. Available at: www.ncbi.nlm.nih.gov/pubmed/17938013.

9. National Cancer Control Program and WHO India. Guidelines for Cervical Cancer Screening Programme. Government of India World Health Organization. Nov 2009. Available at http//www.cancer.gov/cancertopics.

10. World Health Organization. National Health Accounts, India. 29 Dec 2009. Available at: http://www.who.int/nha/country/ind/en/.

11. http://www.cancerresearchuk.org/about-cancer/