HPV Vaccination in Sri Lanka-

An analysis to build a strategy for awareness building

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Abstract

Aims &Objectives: *In 2017, Human Papilloma Virus (HPV) vaccination was introduced to Sri Lanka's National Immunization schedule, according to which, young females aged 10 years of age are getting two doses of HPV vaccine before reaching 13 years of age. This has brought cervical cancer prevention under spot light. This study aimed to evaluate women's knowledge, attitudes and practices regarding cervical cancer and this paper will be discussing on awareness of HPV and vaccination among the sample.*

Methodology: The descriptive cross sectional study was carried out at the Colombo South Teaching Hospital in 2010. Female indoor patients who were admitted in three wards, aged above 18 years were selected by convenient sampling method. Data was collected using pre-tested interviewer administered questionnaire. Ethical approval was obtained from the Ethics Review Committee of Faculty of Medical Sciences, University of Sri Jayewardenepura. Analysis was done using Statistical Package for Social Sciences (SPSS) version 18.

Results: Nearly half of the women (55%) included in this study were in the age group of 35-65 years. Of the sample (n=225), HPV and HPV vaccine was known to only 7% and 2% respectively. Above 90% were willing to learn more regarding cervical cancer, HPV and

Pap testing. Health care professionals catered to only 20% of the sample as source of information. None of the women participated in the study have had HPV vaccination.

Conclusion: This showed the lack of health seeking behaviour among the group of women. A re-evaluation of knowledge, attitudes and practices related to cervical cancer can be recommended to strengthen the government's effort to control cervical cancer related morbidity and mortality among country's female population.

Key words: knowledge on cervical cancer, attitudes, practices, HPV vaccination

1. Background

Cervical cancer is the cancer that forms in tissues of the uterine cervix. It is usually a slow-growing cancer that may not have symptoms but can be found with regular Pap tests (a procedure in which cells are scraped from the cervix and looked at under a microscope). Cervical cancer shows only minor symptoms until it reaches the end stage (Karunarathne 2010, Coppleson et at, 1992). But it can be treated and prevented. Cryosurgeries, LEEP (Loop Electrical Excision Procedure), cold knife excision are the procedures used in treatment process (WHO, 2002). Cervical cancer is the second most common cancer in women worldwide, with about 510 000 new cases and 288 000 deaths reported each year. Almost 80% of cases occur in developing countries (WHO, 2007), where cervical cancer is the most common cancer in women (Torre et al, 2017).As Karunarathne (2010) illustrates it has been revealed that in South Asia region, one cervical cancer death occurs in every four minutes.

According to Global Cancer statistics (Parkin et al., 2002), eastern Africa had the highest incident rate which is 42.7 per 100 000 and highest mortality rate, 34.6 per 100 000. The incidence in South East Asia was 18.7 per 100 000, while mortality rate was 10.3 per 100 000 population. This is lower than the corresponding rates in Africa, the Caribbean, and South America. Northern America, Northern Europe, Japan, Australia, New Zealand are among the countries with lowest incident and mortality rates. In Sri Lanka, cervical cancer is the second commonest malignancy with a rate of 4.6 per 100 000 population in 2005. The peak incidence has been reported in ages 65-69 years (Cancer Incident Data, 2010). The incidences have increased from 6% to 12 % during the last 10 years. (Karunarathne, 2010)

Screening for cervical cancer

Cervical cancer is the easiest cancer to prevent by regular screening tests and follow-up. Two tests can help prevent cervical cancer or find it early and they are the Pap test and HPV test (Centres for Disease Control and Prevention-USA, 2018). The Pap test (or Pap smear) helps find precancerous, cell changes on the cervix that might become cervical cancer if they are not treated appropriately. The HPV test checks for the virus that can cause these cell changes on the cervix. It may be used to screen for cervical cancer, with the Pap test, in women aged 30 years and older. It also may be used to provide more information when a Pap test has unclear results. (Centres for Disease Control and Prevention-USA, 2018)

Early detection or screening of low grade CIN (Cervical Intraepithelial Neoplasia) by cervical smears (Pap smears) and HPV (Human Papilloma Virus) test which checks for the virus helps to reduce the morbidity and mortality associated with cervical cancer. Developed countries have been successful in controlling the incidence of cervical cancer, whereas developing countries have so far failed to control the disease causing 80% of cervical cancer deaths to occur in these countries. Not having access to effective screening programmes has been identified as predisposing to this (WHO, 2002).

Cervical cancer screening programme has been established in Sri Lanka since 1996, with the establishment of well women clinics concept by the government. Therefore it is important as a first step to determine the knowledge, attitudes and practices related to cervical cancer among women in the country.

Risk factors

The risk factors for developing Cervical cancer is associated with early age of first intercourse, multiple sexual partners, smoking, low socio economic status and infection with HPV. The risk factors for cervical cancer are, having sexual intercourse at an early age; multiple sexual partners; sexual partners who have multiple partners, participation in high-risk sexual activities or having had a cervical cancer previously; smoking; weakened immune system; Chlamydia infection**,** and poor economic status (American Cancer Society, 2018).

HPV infection is also a risk factor "Molecular and epidemiological studies have unequivocally shown that the vast majority of cervical cancer cases worldwide are caused by persistent infections with some high risk types of the human papillomavirus family" (WHO, 2002).According to US National Institute of Cancer (2010), cervical cancer is almost always caused by HPV infection.

HPV Prevention

Cervical cancer tends to be more common in women who marry at an early age. And who have had several sexual partners. Also, the incidence is significantly higher among women whose husbands were previously married to women with cervical cancer. Such data clearly implicate a venereally transmitted agent in genesis of this disease (Coppleson,et al.1992).

Virtually all cervical cancer cases (99%) are linked to genital infection with HPV, which is the most common viral infection of the reproductive tract (WHO, 2018). HPV is the most common sexually transmitted infection (STI). There are more than 40 HPV types that can infect the genital areas of males and females. These HPV types can also infect the mouth and throat. In 1999, De Silva et al reported evidence to support the strong association between HPV 16 and squamous cancer of cervix, having detected HPV16 in 73.3% of biopsies and HPV18 in 20% of the biopsies. It has been shown that vaccines, condom use and having a faithful partner could lower the risk of HPV infection (Center for Disease Control and Prevention-USA, 2018).

Vaccination against HPV is widely used in developing countries. The first ever HPV vaccine introduced to Sri Lanka only in 2010 is been used by 110 countries. It is indicated for girls over 10 years (Karunarathne, 2010).In 2017, HPV vaccination was introduced to Sri Lanka's National Immunization schedule. All young females aged 10 years of age should receive two doses of HPV vaccine before reaching 13 years of age free of charge.

2. Methodology

This was a descriptive cross sectional study. Data was collected only on one occasion from participants of the study as it is less time consuming, less expensive and large number of data can be collected at one point of time**.** Women (n=225) above 18 years of age, who were admitted to three wards, one each from medical wards,surgical wards and gynaecological wards at the Colombo South Teaching Hospital (CSTH) were the study sample.Selected 75 participants were selected from each ward usingconvenience sampling method.

Females above 18 years who were admitted to CSTH, without any disability in hearing, reading and writing, who understand Sinhalese or English and able to give consent were included in this study. Those who were severely ill, diagnosed as having cervical

cancer or have undergone hysterectomy and who were not mentally and physically alert were not included in the study.An interviewer administered pre-tested questionnaire was used as the study instrument. The questionnaire was designed using similar questionnaires used in previous studies and validated it.The questionnaire consisted of 47 items in 6 parts (A to F): demographic details(part A), knowledge on prevalence (part B), knowledge on symptoms (part C), knowledge on risk factors (part D), knowledge, attitudes and practices regarding HPV prevention(part E), and pap smear testing (part F).

Information regarding health seeking behaviour, barriers and sources of information with respect to prevalence, HPV prevention and screening were also solicited.

Pre testing the questionnaire was done at CSTH using 10 female patients who fulfilled the inclusion criteria. These patients were not included in the main study. They volunteered to participate after explaining the objectives of this procedure. A number of problems in the wording and content were detected and corrected accordingly. The revised questionnaire was used for the proper study.

Proper study- The study was conducted between 17th of October to 30th of October, 2010 at CSTH ward 02, ward 04 and ward 10. There are around 30- 40 patients in the ward in a day, only about 15 fulfilled the inclusion criteria for the study and consented to participate. Wards were visited every other day to reduce the chance of repetition of the participants. The gynaecology ward was visited on two extra days to collect data due to the lower number of patients in that ward as compared to the other wards. All three wards were visited on each day with around 45 patients being interviewed in a day. At the end of data collection, each filled questionnaire was given a code number and all the questions were stored confidentially and safely until and after data entry.Knowledge on cervical cancer was determined by giving 1 mark for each correct answer. No minus marks were given.

Adequate knowledge on prevalence – those who had scored 3 marks.

Adequate knowledge on symptoms- those who had scored 4 out of 6 marks.

Adequate knowledge on risk factors – those who had scored 4 out of 8 marks.

Adequate knowledge on screening- those who had scored 5 out of

9 marks.

Ethical Clearance

Before data collection, approval from Ethics Review Committee of University of Sri Jayewardenepura and the director of Colombo South Teaching Hospital were obtained. Participants were informed about the purpose of the study, their part in it, any possible discomfort, how privacy is guarded and their right to refuse to participate or to stop the participation without penalty. Also they were informed on the manner in which the data will be used, potential risks and benefits. Informed consent was obtained from the participants which certified that the participants have received sufficient information about the research and they have comprehended that information were adequately provided to decide whether or not to participate in the study. The privacy and the confidentiality of each participant taking part in the study were ensured.

3. Results

3.1 Socio demographic details of the sample

Variable	N	Percentage % (N=225)
Age		
18-34	89	39.6
35-50	79	35.1
51-65	45	20.0
Above 66	12	5.3
Civil status		
Married	165	73.3
Unmarried	45	20.0
Widowed	10	4.4
Divorced	4	1.8
Separated	1	.4
Participant's education level		
up to grade 8	54	24.0
up to O/L's	70	31.1
up to A/L's	65	28.9

higher education	14	6.2
none of the mentioned	22	9.8
Husbands' education level		
up to grade 8	35	15.6
up to O/L's	62	27.6
up to A/L's	52	23.1
higher education	5	2.2
none of the mentioned	11	4.9
Occupation		
Professional	8	3.6
Trained	17	7.6
Unskilled	39	17.3
Self employed	30	13.3
House wife	131	58.2
Income		
<5000	24	10.7
5000-15000	90	40.0
15000-30000	66	29.3
>30000	45	20.0

More than half (55%) of women were in the age of 35- 65, which was the target age group at the MOH well women clinics where national programme for cervical cancer screening take place. Most (80%) of the women have been married. Only 35% of the sample has passed A/L's and 25% of the spouses have passed A/L's. More than half of the sample was house wives. Monthly income of 50% of the sample was having less than Rs.15000.00

3.2 Knowledge regarding cervical cancer prevalence

Variables	N	%(N=225)
Cervical cancer	165	73.3
HPV	16	7.1
HPV vaccine	4	1.8
Pap test	91	40.4

Nearly three fourths of the sample were aware of the disease, but a very few were aware of the main causative agent "HPV" and the prevention of it. More than half of the sample was not aware of early detection of the disease.

3.3 Frequency distribution of knowledge regarding prevalence, symptoms, risk factors and screening

Variables	Not aware		Adequate knowledge		Inadequate knowledge	
	N	% (N=225)	N	% (N=225)	N	% (N=225)
Prevalence	60	26.7	125	55.6	040	17.8
Symptoms	60	26.7	84	37.3	81	36
Risk factors	60	26.7	87	38.7	78	34.7
Screening	134	59.6	27	12	64	28.4

Nearly 56% of the sample had an adequate knowledge regarding the prevalence of the disease, less than 40% had adequate knowledge regarding symptoms and risk factors and only 12% regarding screening. Out of the 165 who knew about the disease, 74 (45%) were not aware of the early detection.

3.4 Frequency distribution of the knowledge on the prevalence.

Characteristic	Frequency	Percent% N=165
Knowledge about the fatality of the disease		
Very serious	113	68.5
Somewhat serious	36	21.8
Not very serious	4	2.4

Don't know	12	7.3
Knowledge about the disease as a health problem in the country		
Very serious	59	35.8
Somewhat serious	74	44.8
Not very serious	12	7.3
Don't know	20	12.1

Out of the respondents who knew about cervical cancer 10% either underestimated its' fatality or was not aware of it. About 19% of the respondents thought that cervical cancer is not a serious health problem in the country.

3.5 Frequency distribution of the knowledge on symptoms.

Symptom	**Yes**		**No**	
	N N=165	**%**	**N** N=165	**%**
1. Bad odour (incorrect)	106	64.2	59	35.8
2. Bleeding per vagina after intercourse (correct)	100	60.6	65	39.4
3. Itching(incorrect)	71	31.6	94	41.8
4. Abdominal cramps (incorrect)	64	38.8	101	61.2
5. Lower abdominal pain (correct)	123	74.5	42	25.5
6. Intermittent bleeding in between menstruation (correct)	117	70.9	48	29.1

Nearly 40% of the sample did not think bleeding per vagina after intercourse as a symptom of cervical cancer

3.6 Frequency distribution of the knowledge on risk factors.

Risk factor	**Yes** **N (%)** N=165	**No** **N (%)** N=165	**Don't know** **N (%)** N=165
1.Cigarette smoking	98 59.4	32 19.4	35 21.2
2.Multiple sexual partners	109 66.1	17 10.3	39 23.6
3.Having sex with a partner who has had sex with a woman with cervical cancer	41 24.8	86 52.1	38 23.0
4.Prolong use of oral contraceptives	76 43.0	51 18.2	37 38.8

Out of the sample 71 (31.6%) thought oral contraceptives predispose cervical cancer which is a misconception.

3.7 Frequency distribution of the knowledge on Human Papilloma Virus

Knowledge	**Yes**		**No**		**Don't know**	
	N	**%** N=16	**N**	**%** N=16	**N**	N=16
HPV is a sexually transmitted disease	7	43.8	1	6.3	8	50.0
HPV is the cause of anogenital warts	4	25.0	2	12.5	10	62.5
HPV is a cause of cervical cancer	6	37.5	1	6.3	9	56.3

Condom use can lower the risk of HPV infection	9	56.3	0	0	7	43.8
Having single faithful partner can lower the risk of HPV infection	10	62.5	0	0		37.5

Nearly 44% of the respondents did not know that condom use and having faithful partner can lower the risk of HPV infection. Of them 50% did not know that it is sexually transmitted; they were just familiar with the word.

3.8 Frequency distribution of attitudes regarding cervical cancer, HPV and Pap testing

	Cervical cancer		HPV		Pap testing	
	N	% (n = 225)	N	% (n = 225)	N	% (n=91)
Well informed	19	8.4	0	0	10	4.5
Need information	206	91.6	225	100	215	95.5

Above 90% of the sample seek more information / willing to learn more regarding cervical cancer, HPV and Pap testing.

3.9 Practices regarding cervical cancer

When inquired on practices regarding prevention, only 1.8% of the respondents are aware of the vaccine against HPV and none in the sample has received it.

3.10Frequency distribution of the source of information

	Preferred source		Actual source	
	N	**% (n=225)**	**N**	**% (n= 165)**
Television	100	44.5	57	34.5
Newspapers & magazines	37	16.4	40	24.2
Health workers	65	29.0	35	21.2
Radio	8	3.5	6	3.6
Family, friends,	3	1.3	24	14.5

neighbours & colleagues				
Brochures, posters	12	5.3	3	1.8

Television has been catering knowledge on cervical cancer to 34.5% of the sample with newspapers and magazines coming 2nd (44%). It was also rated that health workers came 3rd with 21%.

4. Discussion

4.1 Knowledge

The knowledge about HPV was very poor in the study sample. Only 7.1% (16) were aware of HPV and only 1.8% (4) was aware of the vaccine against HPV. In developed countries the rates were higher than these. According to Waller et al. (2009), awareness of HPV among women attending to a well women clinic in central London was 30%. In Turkey Uysal&Birsel (2009) has found out that 78.4% was aware of the HPV vaccine.

2 Attitudes – health seeking behaviour

Present study revealed that all the women who were not aware of HPV in the sample (N=209, 92.9%) of current study wanted to know more about it. A study done by Gamarra, Paz &Griep (2005) which revealed 80.5% of Argentinean women had adequate attitudes on cervical cancer.

4.3 Practices

None of the women in the sample had received vaccine against HPV which was very much obvious as for the first time it was introduced to Sri Lanka in 2010.

4.4 Source of information

Of the sample, 44% prefer to get information from television. Radio was not very much preferred and it has not catered significantly to the respondents in the sample. So when planning educational programmes it would be beneficial to use the media. About 30% of the sample preferred to get information or health education from the health care professionals but only 20% was being catered. Health education done by the health workers should be reinforced. Sri Lanka is well known for its strong primary health care system.Females to be more aware of the problems related to reproductive health more than what is seen today.

Limitations

The sample consists of females who are admitted to the hospital for treatment or for diagnosis of health problems unrelated to cervical cancer.

The majority of the sample has studied only up to O/L's and most are house wives.

A government hospital like CSTH will not get patients from all the strata of the society.

5. Conclusion

Knowledge regarding prevalence of cervical cancer as the 2nd most common malignancy in the country was not a well-known fact among the women. Nearly 50% of the women in the sample did not have adequate knowledge regarding the prevalence disease. HPV infection is the dominant risk factor for cervical cancer however, women were not aware of it. With the availability of HPV vaccine in Sri Lanka it is essential to educate the general public regarding HPV as the causative factor for cervical cancer and the measures to prevent it.

Only one fifth of the sample had received information via the health care professionals. Health care professionals should be motivated to educate women regarding this cancer affecting reproductive health. Medical Officer of Health, Public Health Nursing sisters and Public health midwives who attend Well women clinics, Antenatal clinics and even Well baby clinics can be utilized to publicize the importance of HPV vaccination. The most preferred source of information is Television within this study sample. Morning television programmes which target housewives can be used to cover a vast majority of the female population.

The target group for awareness building should include adolescent and teenage girls, and their parents and guardians. School health programmes can be used to educate the children who receive vaccination under Expanded Programme of Immunization (EPI).A repeat study using similar questionnaire can be used to identify educational needs of the target group. Results of this study can be used in recommending measures to educate the general public about prevention, specifically HPV vaccination and to promote screening with a view to reduce both the incidence and the mortality related to cervical cancer in the country.

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