

Awareness on Cervical Cancer Screening Among Women in Selected Public Health Midwife Areas in Batticaloa, Sri Lanka

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Abstract: The most common gynecological malignancy is the Cancer of the cervix and it is the second most frequent cancer in women worldwide. Cancer of the cervix is one of the commonest gynecological cancers in Sri Lanka. Cervical cancer is highly preventable and curable disease when detected and treated early in its precancerous stage. The study aimed to assess the knowledge and barriers of cervical cancer screening among women in selected Public Health Midwives areas. A cross sectional descriptive study was conducted for one year among 380 women aged between 20 and 60 years old. After obtaining written consent, data were collected using a pre tested interviewer administered questionnaire. Frequencies, percentage and associations were calculated. Only 103 (27.1%) of the respondents were aware that Human Papilloma Virus (HPV) is the implicating agent in the etiology of Cervical Cancer and 124 (32.6%) of the respondents were aware of the vaccine used for preventing Cervical Cancer. Regarding the knowledge on Cervical Cancer screening only 3.2% of participants scored adequate knowledge. There was a significant portion of women (87.1%) had never done any cervical cancer screening test. The knowledge on cervical cancer and its screening methods were poor among the participants especially among women who had lower educational status and were in rural area. And also the attendance for pap smear test is very poor in selected PHM areas. There is an imperative need for related awareness programs to promote the uptake of cervical cancer screening tests.

Keywords: Cervical cancer, Pap-smear test, Knowledge, Barriers, Screening.

1. INTRODUCTION

Cervical Cancer is a type of cancer, which occurs in the cells of the cervix, the lower part of the uterus that connects to the vagina [1] Cervical Cancer is easily preventable and is the fourth commonest cancer among women worldwide and the second commonest cancer among women in Sri Lanka. In developing countries it is the second leading cause of death among women [1,2] Approximately 90% of the cervical cancer deaths worldwide occurred in less developed countries (3). Annually approximately 529,800 cases diagnosed in the worldwide and more than 85% have been reported from developing countries [4,5].

Human Papilloma Virus (HPV) is known to be the causative agent of Cervical Cancer in 70% of the cases and is the most common Sexually Transmitted Infection (STI) worldwide [3,6]. Women who smoke, have multiple sex partners, with family history, first full term pregnancy at young age, multiple full term pregnancy, past and present Chlamydia infection, prolong usage of Oral Contraceptive Pills may be susceptible to get Cervical Cancer [6,7]

The World Health Organization (WHO) has categorized the preventive measures of cervical cancer as primary, secondary and tertiary. HPV vaccination for girls 9-13 years of age 3 times during a 6 month period, health education regarding sexual education, condom promotion and male circumcision are the primary preventive methods [8].

Cervical Cancer Screening for women is secondary preventive measure. Cervical Cancer Screening is the systematic application of a test to identify cervical abnormalities in asymptomatic population. Cytological screening of the cervix is

Pap smear test [8,9]. Cervical Cancer Screening with Pap smear test is a cost effective method of cancer prevention [10], because early detection and treatment of precancerous lesions can prevent the majority of Cervical Cancers [9]. Nevertheless recent molecular biological techniques such as HPV DNA testing have been found to be an effective HPV screening method and may facilitate early detection of invasive Cervical Cancer in developing region [9].

The National Health Service Cervical Screening Programme (NHSCSP) of United Kingdom (UK) is widely recognized as one of the successful cancer prevention programmes in the world. The 20–65 year age group is screened at 3–5 yearly intervals. Nearly four million females are screened per year. In Sri Lanka Cervical Cytology Screening is the established method for screening of cervical carcinoma, and is mainly carried out through the Well Woman Clinics (WWC) based at Medical Officer of Health (MOH) clinics [11]. The current recommendation is for all women older than 35 years of age to undergo the Pap test every 3 years. Women younger than 35 years can also take the test after becoming sexually active. If there are no abnormalities, the testing can be stopped after age of 60 years. After that the risk of getting a Cervical Cancer would be very much lower [12].

Treatments of Cervical Cancer at any age include surgery, radiotherapy, chemotherapy and combination therapy are the tertiary preventive measures [8]. In developing countries high incidence of Cervical Cancer results due to lack of awareness and knowledge of Cervical Cancer, Screening test and HPV vaccine [13].

The purpose of this study is to find out the barriers to Cervical Cancer Screening among women in selected Public Health Midwives (PHM) areas in the Medical Officer of Health (MOH) region in Batticaloa. It will be useful to identify strategies that can be used take preventive measures and to improve the health of women.

2. METHODOLOGY

A. Study design

The study design was a Cross Sectional Descriptive Study. Conducted in Medical Officer of Health (MOH) area and the selected Public Health Midwives (PHM) areas in Batticaloa for 12 months in 2018.

B. Study Population

The population consist of women between 20 and 60 years old, who are not diagnosed to have Cervical Cancer in the selected PHM areas and who were willing to participate in the study on the day of visit were included under the research study. There were no specific exclusion criteria for this study. The total population of selected 3 PHM areas was 3,427.

According to Slovin's formula 1960; the sample size was calculated;

$$\text{Sample size (n)} = \frac{N}{1 + Ne^2}$$

N: Total population

e: Marginal error (0.05)

Calculated sample size was 344.

10% non-responsive rate was considered.

So the total sample was 380.

C. Procedures

Ethical clearance for this study was obtained from Ethical Review Committee of Faculty of Health-Care Sciences. A pretested, interviewer administered questionnaire was used to collect the data. The administration of the interviewer administered questionnaire for the collection of data was carried out by researchers after getting informed consent and permission from authorities. A suitable time and duration, comfortable environment and needed facilities were arranged to the participants.

D. Statistical Analysis

The average percentage for knowledge on cervical cancer and knowledge on cervical cancer screening was calculated and the level of overall knowledge was categorized according to the allocated marks range as follows which has been reported by Shakila, Rajashankar and Kokilavani (2015) [2].

Scores	Grade
<50%	Inadequate
50-75%	Moderate
>75%	Adequate

The association of overall knowledge and barrier variables on demographical factors were assessed through chi square test. p value, $p < 0.05$ was considered as a significant.

3. RESULTS

Cervical Cancer is one of the leading causes of morbidity and mortality amongst the gynecological cancers worldwide. In today's world, Cervical Cancer is primarily a disease found in low income countries. Of the nearly 5, 00,000 new cases that occur annually, 83% are in the developing world, as are 85% of the 2,74,000 deaths associated with Cervical Cancer [14]. In Sri Lanka, the crude incidence rate (CR) for all cancers was 82.1 per 100,000 populations and the age standardized rate (ASR) was 87.3 per 100, 000 populations. The most common cancer among females was breast cancer with a CR of 23.1 and an ASR of 23.0. In Sri Lanka, Cervix uteri Age standardized rate per 100,000 world population 8.4. There were total 847 Cervical Cancer detected in 2010. Among them Endocervix was 6 and Cervix uteri 841 [15].

The study aimed to assess the knowledge and barriers of Cervical Cancer Screening among women in selected Public Health Midwives areas in Batticaloa, Sri Lanka.

a. Demographic Details of participants

This study includes 380 participants from whom the questionnaires were filled and collected by interviewers. Of all participants, the higher percentage of age group consisted between age 31-40 (30%) and lower age of participants between 21-30 (12.9%). A majority of the respondents were married (85.3%), Tamil (96.3%) and Hindu (71.3%). Nearly half of the participants had completed GCE Advanced level (55%). Most of them were living in urban area (73.2%) and most of participants were unemployed. Nearly 36% of participants' monthly income was between Rs.15, 001 to Rs.30, 000.

Table 1: Knowledge on Cervical Cancer

Variable (n=380)	Yes No (%)	No No (%)	Don't Know No (%)
Risk factors of Cervical Cancer			
Human Papilloma virus	103 (27.1)	56 (14.7)	221 (58.2)
Smoking	245(64.5)	52 (13.7)	83 (21.8)
Sexually transmitted infection	259 (68.2)	27 (7.1)	94 (24.7)
Immunosuppression drug	75 (19.7)	110 (28.9)	195 (51.3)
Long term use of contraceptive pills	266 (70.0)	16 (4.2)	98 (25.8)
Early sexual activity (age <16)	120 (31.6)	102 (26.8)	158 (41.6)
Having many children	106 (27.9)	134 (35.3)	140 (36.8)
Having sex with many partners	255 (67.1)	22 (5.8)	103 (27.1)
Family history / genetic	216 (56.8)	73 (19.2)	91 (23.9)
Treatments of Cervical Cancer			
Chemotherapy	164 (43.2)	13 (3.4)	203 (53.4)
Radiation therapy	222 (58.4)	10 (2.6)	148 (38.9)
Surgery	283 (74.5)	5 (1.3)	92 (24.2)
Preventive measures of Cervical Cancer			
HPV vaccination	124 (32.6)	14 (3.7)	242 (63.7)
Screening	258 (67.9)	8 (2.1)	114 (30.0)
Early treatment	261 (68.7)	4 (1.1)	115 (30.3)
Sexual education	208 (54.7)	9 (2.4)	163 (42.9)
Condom promotion	70 (18.4)	52 (13.7)	258 (67.9)
Male circumcision	35 (9.2)	39 (10.3)	306 (80.5)

Only 103 (27.1%) of the respondents were aware that Human Papilloma Virus (HPV) is the implicating agent in the etiology of Cervical Cancer. Long term use of contraceptive pills 266 (70.0%), sexually transmitted infection 259 (68.2%), having sex with many partners 255 (67.1%) and smoking 245 (64.5%) were the most common risk factors stated by participants.

The most frequently known symptoms of Cervical Cancer were vaginal bleeding between periods (78.4%), heavy and longer menstrual bleeding (50.8%), persistent vaginal discharge (50.0%), and the least percentage of participants (35.3%) were aware on persistent pelvic and lower back pain as a symptom of Cervical Cancer.

Most of the participants were responded as surgery is the method of treatment for Cervical Cancer 283 (74.5%) and 58.4% radiation therapy. Nearly 53.4% of participants didn't know about chemotherapy

Only 124 (32.6%) of the respondents were aware of the vaccine used for preventing Cervical Cancer. 258 (67.9%) of the respondents were aware on screening as preventive measure for Cervical Cancer. Only 18.4% participants know that use of condoms will prevent Cervical Cancer (Table 1).

Table 2: Knowledge on Cervical Cancer Screening

Variable (n=380)	No	%
Screening methods for Cervical Cancer		
Pap smear test	186	48.9
Laparoscopy	57	15.0
Blood test	212	55.8
Biopsy	28	7.4
HPV/DNA testing	38	10.0
Don't know	36	9.4
Appropriate time period for first time screening.		
Before marriage	55	14.5
After marriage	183	48.2
After menopause	23	6.1
Don't know	119	31.3
Awareness on availability of Pap smear in Sri Lanka.		
Yes	226	59.5
No	154	40.5
Freely available		
Yes	204	53.7
No	15	3.9
Don't know	161	42.4
Recommended age group		
Below 20 years	4	1.1
20-34 years	22	5.8
Above 35 years	165	43.4
Don't know	189	49.7
Where the Pap smear test done (Multiple responses were allotted)		
Hospital clinic	164	43.2
Well women clinic	193	50.8
Health camp	18	4.7
Private medical clinic	30	7.9
Don't know	78	20.5
Frequency for Pap smear test		
Every 3 years	30	7.9
Every 5 years	28	7.4
Every 10 years	5	1.4
Any time	17	4.5
Don't know	300	78.9

From all respondents, 186 (48.9%) were aware on screening test for Cervical Cancer is Pap Smear Test. Two hundred and twenty six (59.5%) of participants were aware about Pap smear available in Sri Lanka. Among all participants 204 (53.7%) of women were aware that Pap Smear Test free of charge in Sri Lanka. 165 (43.4%) of women were aware on the Pap Smear Test is recommended above 35 years in Sri Lanka. The most respondents were aware on the place of Pap Smear Test done were Well Women Clinic 193 (50.8%) and hospital clinic 164 (43.2%). Only 30 (7.9%) of women were aware that the Pap Smear Test should done in every 3 years (Table 2).

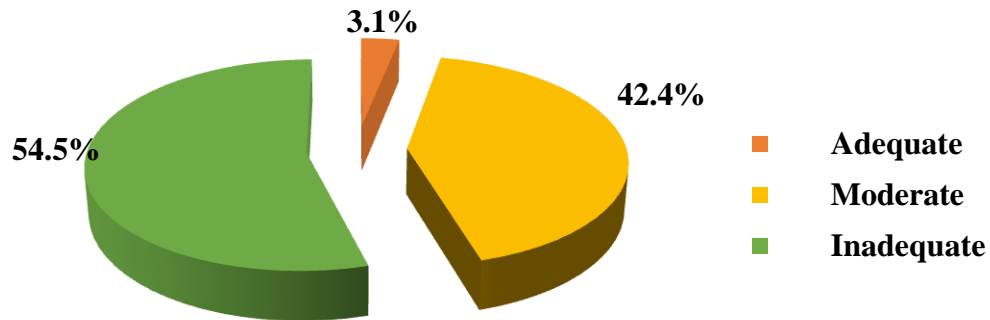


Figure 1: Overall Knowledge Score on Cervical Cancer Screening

Nearly 55% of participants scored inadequate knowledge 42.4% of participants scored moderate and only 3.1% of participants scored adequate knowledge on cervical cancer screening (Figure 1).

Table 3: Association between various demographic factors and knowledge on Cervical Cancer Screening

Variable (n=380)	Knowledge level			p value
	Adequate	Moderate	Inadequate	
Age				0.002[#]
21-30 years	4(4.9%)	19(23.2%)	59(72.0%)	
31-40 years	7(6.1%)	35(30.7%)	72(63.2%)	
41-50 years	10(11.6%)	40(46.5%)	36(41.9%)	
51-60 years	11(11.2%)	41(41.8%)	46(46.9%)	
Ethnicity				0.691*
Tamil	31(8.5%)	132(36.1%)	203(55.5%)	
Muslim	1(7.7%)	3(23.1%)	9(69.2%)	
Sinhala	0(0.0%)	0(0.0%)	1(100.0%)	
Religion				0.096*
Hindu	27(10.0%)	105(38.7%)	139(51.3%)	
Islam	1(7.7%)	3(23.1%)	9(69.2%)	
Christian	4(4.2%)	27(28.4%)	64(67.4%)	
Buddhist	0(0.0%)	0(0.0%)	1(100.0%)	
Residence				0.000[#]
Urban	31(11.2%)	119(42.8%)	128(46.0%)	
Rural	1(1.0%)	16(15.7%)	85(83.3%)	
Marital status				0.463*
Married	29(8.9%)	120(36.9%)	176(54.2%)	
Divorced/ Separated	0(0.0%)	3(50.0%)	3(50.0%)	
Widow	1(8.3%)	3(25.0%)	8(66.7%)	
Unmarried	2(5.4%)	9(24.3%)	26(70.3%)	
Educational level				0.000*
Non-formal	1(11.1%)	0(0.0%)	8(88.9%)	
Primary	3(6.8%)	17(38.6%)	24(54.5%)	
Junior secondary	2(4.4%)	11(24.4%)	32(71.7%)	
Senior secondary	12(5.7%)	75(35.9%)	122(58.4%)	
Tertiary	14(19.2%)	32(43.8%)	27(37.0%)	
Occupation				0.000*
Unemployed	18(6.9%)	89(34.2%)	153(58.8%)	

Self-employed	2(5.9%)	10(29.4%)	22(64.7%)	
Government	11(22.4%)	24(49.0%)	14(28.6%)	
Non-government	0(0.0%)	5(17.9%)	23(82.1%)	
Retired	1(11.1%)	7(77.8%)	1(11.1%)	
Monthly income				0.001[#]
<15000	2(1.8%)	30(27.3%)	78(70.9%)	
15001- 30000	12(8.8%)	50(36.5%)	75(54.7%)	
30001-50000	13(12.6%)	45(43.7%)	45(43.7%)	
>50000	5(16.7%)	10(33.3%)	15(50.0%)	

* Likelihood ratio

Pearson chi square

The Age (p value=0.002) residence (p value=0.000) education level (p value=0.000) occupation (p value=0.000) and economic status (p value=0.002) were significantly associated with increased over all knowledge of cervical cancer in our study (Table 3).

***Table 4: Barriers to Cervical Cancer Screening**

Variable (n=331)	No	Percentage
Lack of knowledge on Cervical Cancer	221	66.8
Busy schedule	38	11.5
Lack of permission from husband	3	0.9
Fear of Cancer	31	9.4
Shyness	19	5.7
Negative experience with health professionals	3	0.9
Negligence of health	47	14.2
Pain and discomfort during procedure	23	6.9
Lack of facilities in health services	155	46.8
Lack of knowledge on Cervical Cancer Screening	162	48.9
Absence of sign and symptoms	47	14.2

*The barriers of Cervical Cancer Screening were taken among participants who did not undergo pap smear test.

The lack of knowledge on Cervical Cancer 221 (66.8%), lack of knowledge on Cervical Cancer Screening 162 (48.9%) and lack of facilities in health services 155 (46.8 %) were the most common barriers of Cervical Cancer Screening. Negligence of health (14.2%), fear of cancer (9.4%) and shyness (5.7%) also were identified as barrier in our study. Least number of participants (09%) stated that, lack of permission from husband and negative experience with health professionals were barriers for Cervical Cancer Screening (Table 4).

4. DISCUSSION

Cervical Cancer is one of the leading causes of morbidity and mortality amongst the gynecological cancers worldwide. In today's world, Cervical Cancer is primarily a disease found in low income countries. Of the nearly 5, 00,000 new cases that occur annually, 83% are in the developing world, as are 85% of the 2,74,000 deaths associated with Cervical Cancer [14].

In Sri Lanka, the crude incidence rate (CR) for all cancers was 82.1 per 100,000 populations and the age standardized rate (ASR) was 87.3 per 100, 000 populations. The most common cancer among females was breast cancer with a CR of 23.1 and an ASR of 23.0. In Sri Lanka, Cervix uteri Age standardized rate per 100,000 world population 8.4. There were total 847 Cervical Cancer detected in 2010. Among them Endocervix was 6 and Cervix uteri 841 [15].

The study was aimed to assess the knowledge and barriers of Cervical Cancer Screening among women in selected Public Health Midwives areas in Batticaloa, Sri Lanka.

According to our research study, only 103 (27.1%) of the respondents were aware that Human Papilloma Virus (HPV) is the implicating agent in the etiological of Cervical Cancer. Long term use of contraceptive pills, sexually transmitted infection, having sex with many partners and smoking were the most common risk factors. Only 20.3% of participants had adequate knowledge on risk factors. This is concordance with other studies which are showing the similar result [3, 6, 16].

Regarding sign and symptoms the most frequently identified symptoms of Cervical Cancer were vaginal bleeding between periods, persistent vaginal discharge, heavy and longer menstrual bleeding and the least percentage of participant (35.3%) were aware on persistent pelvic and lower back pain as a symptom of Cervical Cancer. A similar study which was conducted in Saudi Arabia, the result revealed that vaginal bleeding between periods as the commonest symptom of Cervical Cancer and lower back pain, persistent vaginal discharge that smells bad and discomfort or pain during sex, vaginal bleeding during or after sex and menstrual period that is heavier or longer than usual were common signs and symptoms of Cervical Cancer [17].

The findings of this study on prevention, 32.6% of the respondents were aware of the vaccine used for preventing Cervical Cancer. Higher percentage of respondents were aware on screening as preventive measure. But in this study most of the participants didn't know that male or female condoms need to be used to prevent Cervical Cancer (67.9%). It is concordance with a study done in china where the majority of the participants (90.9%) considered that Cervical Cancer could be prevented. But only 52.6% of the participants knew that "Cervical Cancer Screening" could prevent Cervical Cancer occurring and the knowledge rate for preventive measures of Cervical Cancer was only 16.2% [18].

In this study most of the participants responded as surgery is the method of treatment for Cervical Cancer and only average of participants aware about chemotherapy and radiation therapy as treatments for Cervical Cancer. Similar to this an Indian study revealed that only 30% of study population having some awareness regarding treatment measures [19,20].

According to our study, nearly 55% of participants scored inadequate knowledge and only 3.2% of participants scored adequate knowledge on cervical cancer screening. Also only few number of the study subjects (12.9%) already participated in Pap Smear Test (PST), while large percentage (87.1%) did not participated in Pap Smear Test. While in Ethiopia among all the participants, only 9.9% had been screened for the Cervical Cancer before the survey [21] and in Nepal there was a significant portion of women (86.4%) had never done any cervical cancer screening test [22].

In our current study, the age, occupation, educational level and residence were significantly associated with increased knowledge of Cervical Cancer. Age, residence and economic status were significantly associated with increased knowledge of Cervical Cancer Screening. A study done in Malaysia shows an association between Age, marital status, race, monthly family income and knowledge level of Cervical Cancer [23].

Regarding barriers to Cervical Cancer Screening the most reasons in this study were lack of knowledge on Cervical Cancer and Cervical Cancer Screening. Also lack of facilities in health services. Similar finding was found in a studies carried out in New Delhi, India [24]. Similar result was found in Nepal study that most common and major barrier for Cervical Cancer Screening was unawareness of the Cervical Cancer Screening [22]. Another study which was conducted in Malawi found the most common barriers of Cervical Cancer Screening are lack of awareness of Cervical Cancer, long distance to health facilities, lack of involvement of husband, prevailing misperceptions about cervical cancer [25].

5. CONCLUSION

Cervical Cancer is one of the major public health problems throughout the world and it is the fourth most common malignancy in women. In our current study, the results revealed that, the knowledge on sign and symptoms, risk factors, treatment methods, preventive measures and the screening methods of Cervical Cancer was very poor among the participants.

To improve Cervical Cancer Screening, effort should be focused on reducing identified barriers and enhancing facilitators through measures such as raising awareness about the disease, strengthening health systems capacity and using female health workers to carry out screening. Education programme should include discussion among the students in school and husband and wife in the community. During such programmes, the pros and cons of Cervical Cancer Screening, the burden of Cervical Cancer in person, family, society, and country should be well discussed.

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