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KNOWLEDGE, ATTITUDE AND PRACTICE RELATED TO CERVICAL CANCER AND SCREENING AMONG WOMEN: COMMUNITY BASED CROSS - SECTIONAL STUDY

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ABSTRACT: Introduction: To assess the level of knowledge, attitude, and practices of women of reproductive age of 20 - 70 years on their understanding of the risk factors of cervical cancer, its early detection, and prevention. **Methods:** A cross-sectional study was conducted in rural areas of Komarapalayam from August 2016 to January 2017 by using pre-tested modified questionnaire. The purpose of the questionnaire was to assess the demographic data, exposure to risk factors, knowledge, attitude, and practice of the participants toward cervical cancer. **Results:** A total of 500 married women have participated in this study. Majority 26.6% had the secondary education; most common 34% age group being 31 - 40 years. 39% had first childbirth and 34.6% were married between 19 to 22 years; 27.8% had abnormal uterine bleeding were the most common prevalence of risk factors. Mostly 98.4% and 96.6% were heard about cervical cancer and its screening. Many women 82.2% had never undergone cervical cancer screening and 98.9% of the women had never been vaccinated. The main sources of information were friends and relatives (42.8%) and fear of procedure (30.4%) was the main barrier for not undergoing cervical screening. **Conclusion:** The knowledge about risk factors, sign were very poor, but the method of prevention was good about cervical cancer in the study population. Most of the women had never undergone screening and vaccination for cervical cancer. But their attitude is favourable for screening.

INTRODUCTION: Cervical cancer is the second most common cancer among women worldwide after breast cancer. According to the WHO report, globally, cervical cancer comprises 12% of all cancers in women and it is the leading gynaecological malignancy in the world. The risk of cervical cancer remains high in many developing countries mostly due to the lack or inefficiency of existing prevention programmes [1].

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Cervical cancer is ranked as the most frequent cancer in women in India [2]. In India, the peak age for cervical cancer incidence is 55 – 59 years [3]. Cancer of the cervix is third in the list of the most prevalent cancers, with an estimated 1 lakh cases in 2016 and a projected 1.04 lakh cases by 2020 [4].

India has a population of approximately 365.71 million women above 15 years of age, who are at risk of developing cervical cancer. The current estimates indicate approximately 132,000 new cases diagnosed and 74,000 deaths annually in India, accounting to nearly 1/3rd of the global cervical cancer deaths. Indian women face a 2.5% cumulative lifetime risk and 1.4% cumulative death risk from cervical cancer [2].

Cervical cancer, mainly caused by Human Papillomavirus infection, though there are several methods of prevention of cervical cancer, prevention by vaccination is emerging as the most effective option, with the availability of two vaccines [5]. HPV prevalence among women without cervical cancer varied from 7.5% to 16.9% comparable with a worldwide prevalence of HPV infection between 9% and 13% [6]. India also has the highest age standardized incidence of cervical cancer in South Asia at 22, compared to 19.2 in Bangladesh, 13 in Sri Lanka, and 2.8 in Iran [7]. However, older and poor women who are at the highest risk of developing cancer are least likely to undergo screening. Opportunistic screening in various regions of India varied from 6.9% in Kerala to 0.006% and 0.002% in the western state of Maharashtra and southern state of Tamil Nadu, respectively [8]. The data obtained from these Indian Cancer Registries indicate that cervical cancer contributes to approximately 6 – 29% of all cancer in females [9].

In developing countries because of lack of necessary infrastructure and quality control, high-quality cytology screening may not be feasible for wide-scale implementation [10]. Since early detection predicts better prognosis, one of the most effective ways of preventing and controlling cervical cancer is regular screening and early diagnosis. Lack of effective screening programs aimed at detecting and treating precancerous conditions is a key reason for the much higher incidence of cervical cancer in developing countries. But even if intensive screening programs are designed, the success of these programs will depend on the knowledge and attitude of the women who receive them [11].

Public health programs will be of great success only if the level of awareness among women is immense. Despite the availability of an effective and simple screening test, cervical cancer remains to be the most common cancer among Indian women. Understanding the factors associated with the underutilization of cervical cancer screening is important in order to increase overall cancer screening rates and eventually reduce cervical cancer-related morbidity and mortality [12]. Public sector spending in health is very low in India, making it difficult for the government to independently take on the task of introducing the vaccine in the national immunization programme, without external support [13]. Women and physicians must understand the fact that a woman who chooses to be vaccinated may gain individual protection, but the overall rate of cervical cancer will not be affected.

The most important thing is that women still need to be screened, even if they have been vaccinated [14]. Limited community-based studies have been conducted in Tamil Nadu. This study intends to assess knowledge, attitude and practice (KAP) involving cervical cancer in women of the general population, and to interrogate socio-demographic factors that might impact it.

METHODOLOGY:

Study Design: This cross-sectional study was conducted over a period of 8 months from July 2016 to February 2017 at Valayakaranur, a rural area of Komarapalayam town, Salem district, Tamil Nadu. Study got approval from institutional ethics committee. Married women aged between 20 - 70 years and who have given consent to participate been included in this study.

Sample Size: Sample size was calculated by using the formula $n = N*X / (X + N - 1)$, where $X = Z_{\alpha/2}^2 * p*(1-p) / MOE^2$. $Z_{\alpha/2}$ is the critical value of the normal distribution at $\alpha/2$ (*e.g.* for a confidence level of 95%, α is 0.05 and the critical value is 1.96), MOE is the margin of error, p is the sample proportion and N is the population size. Sample size estimations were based on expected sample size 500 and then the margin of error will be 4.37%. Expected population size of 10,000 and assumed sample proportion of 50%. It was also taken into consideration that 5% of all the filled up forms will be incomplete and rejected. Thus the total sample size taken was 525.

Study Methods: A modified, pre-tested questionnaire was developed and it was tried on some women in the rural community to check for feasibility and reliability. Necessary revisions were made based on the feedbacks to make the questions more clear and understandable. This questionnaire was examined for the second time and changes were made to suit our circumstances.

The purpose of the questionnaire was to assess the knowledge, attitude, and practice (KAP) of the participants toward cervical cancer, its screening methods, and Pap smear.

The Questionnaire Consisted of Three Parts:

- ✓ **Part 1:** Demographic and socio-economic data: the Demographic information related to age, education, marital status, employment, and income were also collected in this section.
- ✓ **Part 2:** Exposure to risk factors of cervical cancers: This component consisted of questions to identify the behavior and practices of the target population that could potentially expose them to the risk factors of cervical cancer.
- ✓ **Part 3:** KAP related to cervical cancer: There were questions aimed to assess the knowledge, attitude, and practices related to cervical cancer.

The knowledge about cervical cancer was detected by using 3 components. They were risk factors, signs and symptoms, and prevention of cervical cancer. The attitude and practice towards cervical cancer screening and vaccination questionnaire were included. The collected data were entered into an Excel chart sheet and analysis was done by using number and percentage for nominal data (such as gender, marital status, profession).

RESULTS: Out of 525 women, 25 were refused to participate in this study. The total number of women who participated in this study was 500. Of these, majority 34% were seen in 31 - 40 years, 26.6% had primary education, 68.4% were the home maker, 81.2% were married, and 35% had family income >15000. The demographic information of the participants is presented in **Table 1.**

TABLE 1: DISTRIBUTION OF SOCIO-DEMOGRAPHIC VARIABLES

Variables	Number (n = 500)	Percentage
Age group in years		
20-30	101	20%
31-40	169	34%
41-50	117	23%
51-60	85	17%
61-70	28	5.6%
Education		
Illiterate	95	19%
Primary	133	26.6%
Secondary	127	25.4%
Higher secondary	82	16.4%
Graduate and above	63	12.6%
Occupation		
Homemaker	342	68.4%
Employed	158	31.6%
Marital status		
Married	406	81.2%
Divorced	11	2.2%
Widowed	83	16.6%
Family income per month		
<5000	31	6.2%
5000-8000	95	19%
8000-10000	72	14.4%
10000-15000	127	25.4%
>15000	175	35%

Among participants, 34.6% had marriage between the ages of 19 to 22 years, 39% had their first childbirth between 19 to 22 years, 1.8% had >3 children, 12.4% had an oral contraceptive pill and 27.8% had abnormal uterine bleeding. The prevalence of risk factor is presented in **Table 2**. Among 500 women, 492 (98.4%) were answered that they had ever heard of cervical cancer and 483 (96.6%) had heard of cervical cancer screening (**Table 3**). According to their response, 3.4% of subjects were excluded from the study as they were never heard about cervical cancer and screening. A total of 483 women were questioned further to assess their level of knowledge about cervical cancer.

TABLE 2: DISTRIBUTION RISK FACTORS ASSOCIATED WITH CERVICAL CANCER AMONG STUDY POPULATION

Variables	Number (n = 500)	Percentage
Age at marriage		
15-18 years	163	32.6%
19-22 years	173	34.6%
23-26 years	138	27.6%
27 years and above	26	5.2%
Age at first childbirth		
15-18 years	127	25.4%
19-22 years	195	39%
23-26 years	149	29.8%
27 years and above	29	5.8%
Number of children		
0	04	0.8%
1	136	27.2%
2	278	55.6%
3	73	14.6%
More than 3	09	1.8%
Use of contraceptive methods		
Permanent method	263	52.6%
OCP- Oral contraceptive pill	62	12.4%
Condom	18	3.6%
IUCD- Intrauterine contraceptive pill	31	6.2%
No usage	126	25.2%
Menstrual history		
Normal	301	60.2%
Abnormal uterine bleeding	139	27.8%
Post-menopausal bleeding	43	8.6%
Bleeding and spotting between periods	17	3.4%

TABLE 3: AWARENESS ABOUT CERVICAL CANCER

Awareness (n = 500)	Yes	No
Have you heard of cervical cancer	492 (98.4%)	08 (1.6%)
Have you heard of screening for cervical cancer	483 (96.6%)	17 (3.4%)

The majority of the women had poor knowledge and attitude about cervical cancer and its screening. The results are presented in **Table 4** and **5**. 98.9% of the women had never been vaccinated against cervical cancer and 82.2% had never undergone cervical cancer screening (**Table 6**). 30.4% offered fear of procedure as the reason for not undergoing pelvic examination (**Table 7**). The major sources of information about cervical cancer were friends and relatives 42.8% (**Table 8**).

TABLE 4: KNOWLEDGE ABOUT CERVICAL CANCER

Parameters	Number (n) = 483		
	Yes (%)	No (%)	Don't know (%)
Risk factors for cervical cancer			
Having multiple sexual partners	99(20.5%)	121(25.05%)	263(54.4%)
Having sex at early age	78(16%)	106(21.9%)	299(61.9%)
Human Papilloma Virus infection	125(25.8%)	84(17.4%)	274(56.7%)
Family history of cervical cancer	157(32.5%)	97(20%)	229(47.4%)
Multiparity	69(14.3%)	109(22.6%)	305(63.1%)
Use of oral contraceptive	146(30.2%)	90(18.6%)	247(51.1%)
Excess alcohol	189(39.1%)	129(26.7%)	165(34.1%)
Smoking	195(40.4%)	117(24.2%)	171(35.4%)
Sexually transmitted infections	134(27.7%)	140(28.9%)	209(43.2%)
Signs of cervical cancer			
Foul-smelling / prolonged vaginal discharge (FSVD)	173(35.8%)	87(18%)	223(46.1%)
Postmenopausal bleeding (PMB)	209(43.2%)	138(28.6%)	136(28.1%)
Postcoital bleeding	142(29.4%)	129(26.7%)	212(43.9%)

Irregular menstrual period	175(36.2%)	99(20.5%)	209(43.2%)
Leakage of urine from vagina	49(10.1%)	181(37.4%)	253(52.4%)
Weight loss	171(35.4%)	63(13%)	249(51.5%)
Pelvic pain / pain during sex	313(64.8%)	62(12.8%)	108(22.3%)
Prevention of cervical cancer			
It is preventable	291(60.2%)	76(15.7%)	116(24%)
It is possible to detect it	385(79.7%)	13(2.7%)	85(17.6%)
Early detection increases survival	397(82.1%)	29(6%)	57(11.8%)
Vaccination against HPV	85(17.5%)	130(26.9%)	268(55.5%)

TABLE 5: ATTITUDE TOWARDS CERVICAL CANCER SCREENING

Parameters	Number (n) = 483	
	Responded yes	Percentage
Who should get tested for cervical cancer		
Married	177	36.6%
Unmarried	80	16.6%
Any female	226	46.8%
Attitude towards age for cervical cancer test		
Old women >60 years	184	38%
Young women 20-50	219	45.3%
Adolescent girls 12-19 years	80	16.6%
How often do you think do you need to do pap test		
No idea	126	26%
6 monthly	43	8.9%
1 yearly	205	42.4%
3 yearly	109	22.6%

TABLE 6: PRACTICE TOWARDS CERVICAL CANCER

Parameters	Number (n) = 483	
	Number	Percentage
Are you vaccinated against cervical cancer		
Yes	05	1.03%
No	478	98.9%
Have you been screened for cervical cancer		
Yes	86	17.8%
No	397	82.2%
Are you willing to do the Pap smear test at free of cost		
Yes	349	72.3%
No	134	27.7%

TABLE 7: REASON FOR NOT UNDERGOING SCREENING

Reasons	Number (n) = 342	
	Yes	Percentage
Fear of procedure	104	30.4%
Fear of bad result	64	18.7%
I do not believe am at risk	46	13.5%
Discouraged by partners or others	12	3.5%
Do not know where the test is done	09	2.6%
No time	18	5.3%
No reason	89	26%

TABLE 8: SOURCE OF INFORMATION ABOUT CERVICAL CANCER

Sources of information	Number (n = 483)	Percentage
Magazine	53	10.8%
Television	90	18.6%
Friends & relatives	207	42.8%
Medical practitioner	105	21.7%
Internet	28	5.7%

DISCUSSION: In our study, risk factors like lower level education, early age at marriage and first childbirth was moderately present. In Maharashtra and Eastern India, high-risk HPV was associated with increasing age, low education level, manual work, married women, early age at first sexual intercourse, widowhood / separation, and women with parity [15]. Majority of the women had marriage between the age of 19 - 22 years in current study. Several factors increase the risk of cervical cancer. Early age at onset of sexual activity and multiple sexual partners have been identified as risk factors. The risk may also be increased in women taking immunosuppressive medications, women on a diet low in fruits and vegetables, women with long - term use of oral contraceptives and women in poverty [18].

HPV infection was found to significantly decrease with age, whereas other infections increased with the age of women. As the age of cohabitation increased, the HPV infection decreased significantly [16]. In Indian women HPV infection is common at 26 – 35 years of age, which is a decade later than that in developed countries, and cancer occurs between 45 and 59 years of age [6]. The long interval between initial infection and disease indicates that there are other factors involved, such as sexual habits, reproductive factors, other sexually transmitted diseases, co-infection with HIV, smoking, nutritional deficiency, genetic susceptibility, use of hormonal contraceptives, and high parity [6]. There is evidence that cervical cancer incidence is greater among women of lower classes, those less educated, and those with a larger number of children [17]. Specific religious practices also modify the risk of developing cervical cancer in women following HPV infection [6].

Among respondents, most replied that they had heard of cervical cancer and its screening. Similar results have been found in another study done by Bathija *et al*., [19] The current study clearly shows that most of the women were unaware of the risk factors of cervical cancer except smoking, alcohol use and family history. The lack of knowledge is mainly due to lack of population - based screening programs, inefficient mass media campaigns and cultural barriers wherein women in India feel shy to discuss the diseases affecting the sexual organs [20]. The majority of the women responded yes for smoking as a risk factor for cervical cancer which is similar to the report of Ahmed *et al.,* [21] The knowledge of cervical cancer symptoms was poor among all age groups. Some of the very important symptoms of cervical cancer are vaginal bleeding after sexual intercourse and vaginal bleeding after menopause, very few of the subjects knew about these symptoms. The majority of the subjects were aware of the symptoms pelvic pain and post-menopausal bleeding which is similar to other reports by Ahmed *et al.,* and Alok *et al*., [21, 22]

The women who have ever heard of cervical cancer were asked if they knew of any method that could prevent the disease. Among the total subject who could identify the major correct answer was 79.7% it is possible to prevent it, 82.1% early detection increase survival, 60.2% it is preventable but only 17.5% knew about vaccination against HPV. In another study, approximately 70% nurses believed that cancer cervix is preventable, detectable at an early stage and curable if detected early [22].

Our study documents that 36.6% replied married women should get tested and 46.8% responded any female should get tested for cervical cancer. This finding is in contrast to Arulogun *et al.,* where 81.7% of the respondents mentioned that screening should commence when a woman starts having sex [23].

In our study, 45.3% felt the need of doing cervical cancer (Pap) test in young women 20 - 50 years. In another study, about 63.2% of the respondents suggested that screening should start for women >30 years of age [24].

When questioned on its frequency of screening and whom to screen, very few gave the right answer. In general, though they heard about cervical cancer and its screening methods, they did not have in-depth knowledge about it. The awareness about Pap smear in our study is similar to the findings of Goyal *et al.*, and Orantaphan *et al*., [22, 25] Mutambara *et al*., reported that women had high knowledge about the nature of a Pap smear test, and they also knew that cancer was the second highest killer of women compared to HIV. The participants were aware that if early interventions were made, treatment could reduce the chances of disease progression [26].

In another study, awareness of cervical cancer and pap smear test among couples was low and a significant gap in awareness was also observed [25].

In the current study, 98.9% of the women had never been vaccinated against cervical cancer. HPV vaccines are most efficacious if administered before the onset of sexual activity, *i.e.* before first exposure to HPV infection. Both vaccines are to be administered as a 0.5ml intramuscular injection in the deltoid region from the age of 9 years onwards. Two dose vaccination (0 and 6 months) in girls aged 9 - 14 years appeared comparable to the standard 3 dose schedule in women aged 15 - 25 years [27]. In the previous study, it clearly shows that only 6.03% women had heard about cervical cancer vaccine [28]. Most of the people have been never vaccinated because of lack of awareness. HPV vaccination and regular cervical screening is the most effective way to prevent cervical cancer [5].

Many women 82.2% had never undergone cervical cancer screening except 17.8%. Though many have heard about screening methods for cervical cancer, they were not very familiar with the term "Pap smear." These results are comparable with the study by Shrestha *et al.,* in Nepal [29]. Community-based studies have reported that 2% - 6.9% of women got tested [8, 30].

Most of the subjects were willing to be screened (72.3%) if an opportunity is given to them, to do the Pap smear test at free of cost except 27.7% who had neglected. This shows a very positive attitude of our participants toward screening. Study by Mukama *et al.,* showed, positive attitude towards cervical cancer screening among the study subjects [31]. From respondents, it has been identified that fear of procedure 30.4%, fear of bad result 18.7%, I don't believe am at risk 13.5% as the main reasons why people do not patronise cervical screening. Similar study reported that, majority (85.8%) of the participants had no intention to be screened for cervical cancer [32].

In our study, major sources of information about cervical cancer were friends and relatives 42.8%. This finding is consistent with a publication from Botswana, [33] but contrasts with studies in Ethiopia [32] and Nigeria [34] where the media came in the first place.

Our study showed that the practice of Pap smear screening was very less but the attitude of our participants toward screening was good. The overall level of adequacy of knowledge, attitude, and practice in our subjects were found to be very low as compared with similar studies in Ethiopia, Zimbabwe [32, 26]. Majority of the women in India are unaware of the benefits and necessity for screening for themselves and vaccination of their daughters. If high rates of cervical cancer vaccination as well screening uptake have to be achieved, we need large scale mass awareness programmes and community education [35].

CONCLUSION: The knowledge of cervical cancer risk factors and sign were very poor but knowledge about the method of prevention was good in the study population. Most of the women had poor attitude and practice related to screening and vaccination for cervical cancer. But their attitude is favourable for screening. Since there is no program and concerted effort to make the women aware of the disease or its prevention. Promote free regular health check-up and vaccination for cervical cancer among general population will increase the awareness and decrease the disease burden.

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