

**CERVICAL CANCER SCREENING: KNOWLEDGE, ATTITUDE AND PRACTICES IN A PRIMARY HEALTH CENTRES IN RURAL INDIA**Dhivya B<sup>1</sup>, Balakrishnan P. R<sup>2</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: BACKGROUND & OBJECTIVES:** Cervical cancer is the most common preventable cancer noted in Indian women, having a major impact on their lives. Approximately, 70% of people reside in villages in India. Hence, the objectives of this study were to find the knowledge of women regarding cervical cancer, to determine attitude and practices towards screening.

**METHODS:** A cross-sectional study was conducted in Primary Health Centre, Periapodu, Tamil Nadu, India between January 2015 and May 2015 where 1670 participants between the ages of 21-65 years were randomly chosen by selecting every 3<sup>rd</sup> woman attending the PHC for any reason. After exclusion, 1200 participants were included in the study. **RESULTS:** Mean age of the study population was 45.3 years. An awareness of 75.42% was noted for cervical cancer, 43.25% for Human Papillomavirus and 32.42% that it was vaccine preventable, the major source of information being Healthcare Providers (70%). Despite 50.58% thinking that they were at risk of cervical cancer, only 31% had undergone a pap smear. However, 69.96% of the unscreened population were ready to undergo screening. Independent predictors for doing Pap test included age >35, higher parity, literacy and adequate knowledge of cervical cancer screening (P<0.05).

**CONCLUSION:** This study shows a low level of knowledge, attitude and practice on cervical cancer among women in rural India. Increasing women's awareness would be a first step in the long chain of conditions to attain a lower incidence and mortality.

**KEYWORDS:** Cervical cancer, Human papillomavirus, Screening, Pap smear, Knowledge, attitude, Practice.

**INTRODUCTION:** Cervical cancer is the third most common cancer among women worldwide<sup>1</sup> and is entirely attributable to infection with the Human Papillomavirus (HPV). About 80% of women clear the infection within a span of 2 years and it is considered one of the most preventable cancers.<sup>2</sup> A persistent infection with a high risk oncogenic Human papillomavirus (HR-HPV) is involved in almost all cases.<sup>3</sup> Four-fold higher rates of cervical cancers are noted in developing countries compared to developed countries.<sup>4</sup> The slow progression from Cervical Intraepithelial Neoplasia (CIN) to invasive cancer over a span of 10-20years, allows effective secondary prevention through screening and treatment of precancerous lesions.<sup>5</sup> Women in the age group, 15-44 years of age are the highest affected group in India.<sup>6</sup> People at high risk include early age at first intercourse, multiple sexual partners, smoking, multiparity, smoking, high risk HPV genotypes (16,18, 45, 31, 33, 35, 52, and 58) and immunosuppression. Modes of testing for precancerous lesions include Papanicolaou test (Pap smear), visual inspection of the cervix with 3-5% acetic acid (VIA), visual inspection with Lugol's Iodine (VILI) and HPV DNA testing. Regular

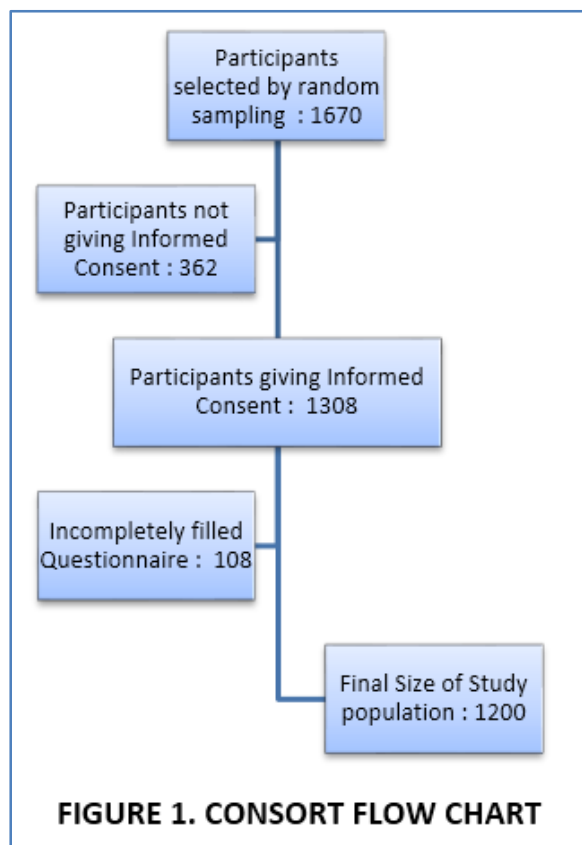
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Pap screening decreases cervical cancer incidence and mortality by at least 80%. Pap smear testing is most beneficial between 21-65 years of age. In women younger than 21 years, low prevalence of lesions progressing to invasive cancer, makes screening less beneficial, similar to women over 65 years of age with prior negative tests.<sup>7,8,9</sup> Current US cervical cancer screening guidelines recommended screening women over the age of 21 years with cytological testing done once every 3 years till the age of 65 if the previous 3 tests were negative.<sup>10</sup> Rural women in India, rarely present to themselves to healthcare, unless faced with serious problems. The burden of preventing cervical cancer depends on the health seeking behavior of the women themselves. This study aims at determining the knowledge on cervical cancer and its screening, and attitudes and practice towards screening.

**MATERIALS AND METHODS:** A cross sectional study design was used to assess the knowledge, attitudes and practices of cervical cancer and screening methodologies including Pap smear. The participants selected were women between the ages 21 years to 65 years, visiting the Primary Health Centre (PHC), Periapodu, for any reason, medical or non-medical, between January 2015 and May 2015. Initially, 1670 women were selected by random sampling technique, by choosing every 3<sup>rd</sup> woman between the ages 21 years to 65 years. The participants were explained, in detail, about the objectives of the study and the methods used and were given the choice of accepting or declining the interview. Women who accepted the interview were asked to give informed consent after which 1308 women were included in the study. The study was conducted in accordance with the Declaration of Helsinki. Data collection was done using a standardized questionnaire consisting of 24 questions on demographic characteristics, knowledge regarding cervical cancer, attitudes and practice towards screening methods. The listed questionnaire items were also mentioned in Tamil language to avoid language barrier and to get better response from the respondents. A pilot study was conducted on 50 women (not part of the study sample) for the purpose of ensuring cultural acceptance, validity and repeatability. Of the 1308 questionnaires filled, 108 were incomplete and 1200 participants were finally included in the study, as mentioned in Figure 1. Awareness is defined as having previously heard of the term cervical cancer. Knowledge about cervical cancer is considered adequate if a respondent is able to identify at least three of the known risk factors and symptoms correctly and knew the exact purpose of Pap smear. Attitude toward cervical cancer is measured by the question, "Do you think you are at risk for cervical cancer?", attitude toward screening is measured by asking, "Do you think you should undergo cervical cancer screening?". Data were entered and analyzed using SPSS version 16. Chi-square test ( $\chi^2$ ) used to analyze the data. The level of statistical significance was defined as  $P < 0.05$ . The study received Local Ethics Committee clearance.

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**RESULTS:** The study included 1200 women. The mean age of the participants interviewed was 45.3 Years. Primary school education was completed by 38% of the study population, while 29.5% had completed secondary school education. Majority (84%) of the women were married. Around two-thirds (66%) of the women had a parity of 1 to 3. Hindus formed a majority of the group interviewed, while 12% were muslims and Christians.

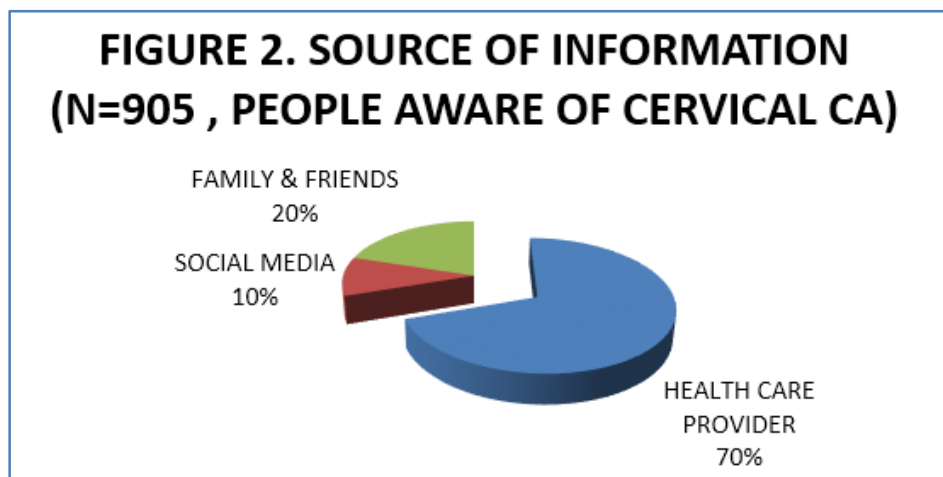
Characteristic	Number	Percentage (%)
<b>Age (in years)</b>		
21-35	390	32.5%
36-50	445	37.08%
51-65	365	30.42%
<b>Education</b>		
Illiterate	226	18.83%
Primary	456	38%
Secondary	354	29.5%
University equivalent/graduate	164	13.67%
<b>Marital status</b>		
Never married	72	6%
Married	1008	84%
Divorced/widowed	120	10%

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<b>Parity</b>		
P <sub>0</sub>	108	9%
P <sub>1-3</sub>	792	66%
P <sub>≥4</sub>	300	25%
<b>Religion</b>		
Hindu	1056	88%
Christian	36	3%
Muslim	108	9%

**Table 1: Demographic characteristics of participants**

Over 75% of the participants were aware of cervical cancer, this information being obtained through Healthcare Providers in 70% of the women, as noted in Figure 2. Around 43.25% had heard of Human Papillomavirus. Only 32.42% thought that vaccination can prevent cervical cancer.



More than two-thirds (76.75%) of patients thought that Sexually transmitted infections were high risk factors for developing Cervical cancer, while early age at intercourse(62.67%) multiparity (51.92%), multiple partners (51.33%)and smoking (37.83%) were also selected as high risk factors as noted in Table - 2. Menorrhagia (58.5%) was opted as one of the symptoms of cervical cancer, while symptoms like foul smelling vaginal discharge (57.75%), post-coital bleeding (46.62%) were correctly identified. Adequate knowledge identified as correctly identifying 3 risk factors and symptoms and knowing the purpose of pap smear, was noted in 62.75% of respondents. Though over 50% thought that they were at risk for cervical cancer, only 30.92% had undergone a pap smear as observed in Table – 3. Of those who had not undergone a pap smear, reasons for not having a pap smear as depicted in Figure 3. And the acceptability of pap smear is depicted in Figure 4. As noted in Table IV, higher the age, parity, education and adequate knowledge were associated with higher chance of Self-referral for cervical cancer screening.

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<b>Knowledge</b>	<b>Number</b>	<b>Percentage (%)</b>
<b>Have you heard about cervical cancer?</b>		
Yes	905	75.42%
No	295	24.58%
<b>Have you heard about Human Papillomavirus?</b>		
Yes	519	43.25%
No	681	56.75%
<b>Vaccination can prevent this cancer?</b>		
Yes	389	32.42%
No	811	67.58%
<b>High risk factors</b>		
Early age at intercourse		
Yes	752	62.67%
No	448	37.33%
Multiple partners		
Yes	616	51.33%
No	58	48.67%
Sexually transmitted infections		
Yes	921	76.75%
No	279	23.25%
Smoking		
Yes	454	37.83%
No	746	62.17%
Multiparous		
Yes	623	51.92%
No	577	48.08%
<b>Symptoms</b>		
Asymptomatic		
Yes	472	39.33%
No	728	60.67%
Foul smelling vaginal discharge		
Yes	693	57.75%
No	507	42.25%
Post-coital bleeding		
Yes	557	46.42%
No	643	53.58%
Menorrhagia		
Yes	702	58.5%
No	498	41.5%

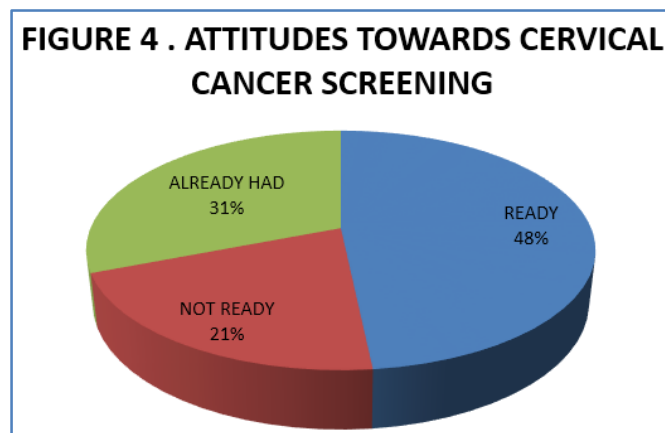
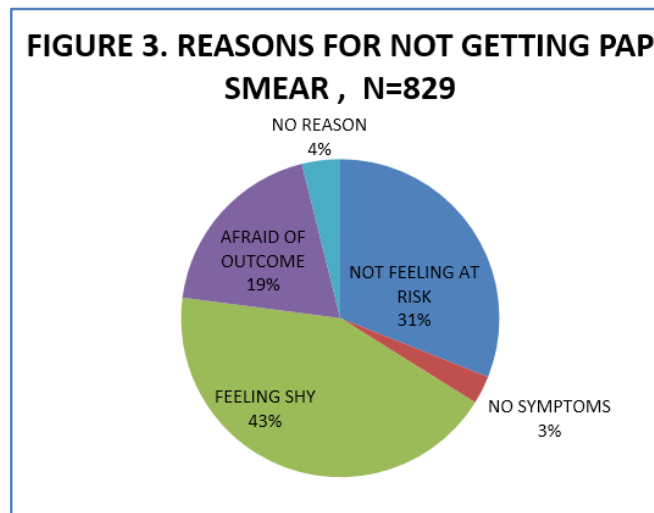
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<b>Knowledge regarding cervical cancer screening procedures</b>		
<b>Have you heard of pap smear?</b>		
Yes	743	61.92%
No	457	38.08%
<b>Pap smear detects CA Cervix?</b>		
Yes	808	67.33%
No	392	32.67%

**Table 2: Knowledge regarding cervical cancer and screening**

<b>Do you think you are at risk for cervical cancer?</b>		
Yes	607	50.58%
No	593	49.42%
<b>Have you ever had a pap smear?</b>		
Yes	371	30.92%
No	829	69.08%

**Table 3: Attitudes and practice towards cervical cancer and screening**



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Characteristic	Pap test not done	Pap test done	X <sup>2</sup> value	'p' value	Result
Age (In years)					
21-35	294	96	11.5594	0.00309	Significant (p < 0.05)
35-50	288	157			
51-65	247	118			
Parity					
P <sub>0</sub>	52	56	241.529	<0.00001	Significant (p < 0.05)
P <sub>1-3</sub>	664	128			
P <sub>≥4</sub>	113	187			
Education					
Illiterate	173	53	240.0571	<0.00001	Significant (p < 0.05)
Primary	378	78			
Secondary	247	107			
University equivalent/graduate	31	133			
Knowledge					
Adequate	444	309	96.9157	<0.00001	Significant (p < 0.05)
Inadequate	385	62			

**Table 4: Association of participants' characteristics to self-referral for cervical cancer**

**DISCUSSION:** Cervical cancer is one of the most common preventable cancers, if detected at early stages. As approximately 68% of population inhabits the villages in India, rural population would provide a rich ground for screening cervical cancers, especially due to traditional practices like early marriage, multiparity, less education and low health awareness. The worldwide incidence of cervical cancer is approximately 510,000 new cases annually, with approximately 288,000 deaths worldwide.<sup>11</sup> The level of women's knowledge about risk factors and prevention of cervical cancer is a major determinant to undergo screening tests.<sup>12</sup> Awareness of cervical cancer in the present study was 75.42%, compared to 53.8% in the study by Sichanh et al.<sup>13</sup> Awareness of Human Papilloma Virus varied between 36%<sup>14</sup> – 77.9%<sup>15</sup> in previous studies and in our study, it was observed to be 43.25%. Around 32.42% of the participants were aware of HPV vaccination and its role in preventing cervical cancer compared to 29% in Pan XF study.<sup>16</sup> In our study, the major source of awareness of cervical cancer was Healthcare providers, however, knowledge on HPV and HPV vaccination was inadequate, indicating the need for more coverage on these topics through both healthcare providers and social media.

Shashank Shekhar et al<sup>17</sup> concluded that 26.7% of the participants had adequate knowledge in comparison to 62.75% in our study. The knowledge of risk factors and symptoms and the purpose of pap smear will encourage people to seek healthcare earlier, which could ensure a larger proportion of people seeking screening for cervical cancer.

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In the study conducted by Anantharaman et al,<sup>18</sup> 57.9% of the study subjects thought that they were at risk of cervical cancer, in comparison to 50.58% in our study. The self-realization that patients might be at risk would bring rural population to get them screened. In the present study, only 30.92% had undergone a pap smear, comparable to 33.6% in the study by Basu et al.<sup>15</sup> Of those who have not had a previous pap smear, one of the major reasons for not getting it done was being shy (43%). Also, extra-marital sexual relationships are not socially accepted in most parts of India implying that an unmarried woman is unlikely to get herself screened due to social stigma. Educating the ignorant of the advantages of screening will render a large proportion of the high risk population to reap the benefits of screening.

The acceptability of pap smear was 62% in the study by Bharel M et al,<sup>19</sup> while it was 69.96% among those never screened, in our study. Our finding that older age, higher parity, better education and adequate knowledge about cervical cancer allowed self-referral of women for screening is consistent with previous studies.<sup>20,21</sup>

In summary, it can be concluded that though knowledge is still inadequate, attitude towards screening practices is favorable. Underutilization of cost-effective screening strategies like pap smear is due to lack of proper motivation. Proper training of health care workers, in maintaining a good rapport with rural population and adequate motivation would be crucial in implementing a perfect screening practice.

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### LIST OF ABBREVIATIONS:

- CA – Carcinoma.
- CIN - Cervical Intraepithelial Neoplasia.
- DNA - Deoxy ribonucleic acid.
- HPV - Human Papillomavirus.
- HR-HPV - High risk Human Papillomavirus.
- PHC - Primary Health centre.

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VIA - Visual Inspection with Acetic acid.

VILI - Visual Inspection with Lugol's Iodine.

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