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Awareness and Screening for Cervical Cancer using Papanicolaou Smear Test Among Women in A Rural Area

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Abstract

Background: Cervical cancer is one of the most common cancers among women Worldwide and the leading cause of cancer mortality in women in India.

Objective: The objective of this study is to assess the knowledge of cancer cervix and the practice of Pap smear test among women in a rural area.

Methods: The awareness and screening for cancer cervix using Papanicolaou smear test among women were studied in 526 women at 9 different health centers in a rural area near Rajahmundry from March 5th, 2021 to March 10th, 2021 with a questionnaire survey of history, assessment of knowledge about cancer cervix, attitude and practice of Pap smear testing & HPV vaccination followed by clinical examination and screening using pap smear test.

Results: During the study period, a total of 526 women were surveyed, out of which screening was done in only 394 women. Most of the women belong to 30-39 years (37.2%).

Distribution of the women based on socio-economic class, occupation, parity, symptoms, clinical examination, knowledge about cervical cancer, and the results of pap smear tests were also studied out of which vaginal discharge seems to be the most common symptom (15.2%), the cervical examination was normal in 91.6%, 77.3% had awareness about cancer cervix and 41.4% of participants had adequate knowledge about Pap smear test.

Conclusion: Awareness about cancer cervix was adequate but the awareness & the rates of pap smear testing and HPV vaccination in this area are far lower than in urban areas due to less exposure to health care information.

Keywords: Cervical cancer; Awareness; HPV vaccination; Pap smear.

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Introduction

In India, cervical cancer is the commonest cancer among women. In developed countries, the rate of cervical cancer has decreased significantly in recent years due to cytology-based screening programs.[1] In developed countries, 75% of patients present in early-stage while in developingcountries 75% of patients present in the advanced stage where cure is not to be expected.[2]

According to the World Cancer statistics, >80% of all cervical cancer cases are found in low-resource

developing countries due to lack of awareness and difficulties in running cytology-based screening programs.[3] As shown by several studies knowledge of cervical cancer, prevention and national screening campaign are limited among women across different settings in India.[4,5]

Human Papilloma Virus (HPV) infection is one of the most important risk factors for cervical cancer.[6] More than 35 types of HPV are known to infect the genital tract out of which approximately 20 are associated with cervical cancer, with the most common types 16 and 18, types 6 & 11 are more commonly associated with genitalwarts.[7]

Factors associated with the development of cervical cancer are early sexual inter course, multiple sexual partners, HPV infection, smoking, young age at first child birth, use of oral contraceptives for over 5 years, history of sexually transmitted diseases, poor menstrual hygiene, more than 5 pregnancies, genetic predisposition and compromised immunity.[8,9]

It is possible to screen and treat cervical cancer before it turns to be invasive cancer due to its long premalignant phase.[10] It is a preventable disease due to the long pre invasive stage. If robust screening is implemented, early detection and appropriate treatment of cancer cervix are possible.[11]

The Papanicolaou (Pap) smear is widely recognized as the most cost effective cancer screening test for detection of precancerous and cancerous lesions.[12]

Pap smear test identifies early cervical epithelial changes and it is a primary screening test for detection of precancerous cervical intraepithelial neoplasia and the early stages of invasive cervical cancer.

The sensitivity and specificity of Pap smear screening are 50-75% and 98-99% respectivelyas shown by the studies.[13] The sensitivity of Pap smear test for early detection of precancerous lesions can be increased when it is done in association with HPV DNA test.[14]

Women residing in rural areas are more vulnerable to cancer cervix as they present at a late stage due to lack of knowledge about cancer cervix, poor screening and HPV vaccination. There is a need to educate women regarding symptoms of cervical cancer, spread awareness about screening programs and motivate them to visit health centers for screening of cancer cervix. Adequate treatment and regular follow up are necessary for women who tested Pap smear positive. Hence our health care system and health services need to be strengthened to include screening at primary health centers.

Objective

The objective of this study is to assess the knowledge of cancer cervix andthe practice of Pap smear test among women in a rural area.

Materials and Methodology

This is a cross-sectional study done among 526 women at 9 different health centers in a rural area near Rajahmundry, East Godavari District from March 5th 2021 to March 10th, 2021 with a questionnaire survey covering the socio–demographic factors, knowledge, attitude, and practices about Pap smear screening and HPV vaccination.

All participants were given a full explanation of the methodology and purpose of the study and an assurance of confidentiality.

The questionnaire was designed based on a literature review and consisted of 5 sections

Socio Demographic Characteristics

a. Age
b. Occupation
c. Education
d. Monthly income
e. Marriage
f. Parity

Clinical History

a. Any vaginal discharge
b. Menstrual history
c. Past medical history
d. Usage of contraceptives
e. Smoking history
f. Family history

Knowledge About Cervical Cancer

Aware of cervical cancer? (Yes/No)

Knowledge and Practice of Pap Smear Test

Aware of the Pap smear test? (Yes/No)

Knowledge About Hpv Vaccination

a. Aware of HPV vaccination? (Yes/No)
b. Got vaccinated for HPV

After collecting data, clinical examination was done which included breast examination, per speculum and per vaginal examination followed by Pap Smear testing.

Pap smear was taken for 394 women.

The remaining subjects denied pap smear testing due to different reasons like lack of awareness, fear of per vaginal examination, menstruation, embarrassment, and no encouragement from the partner.

Written informed consent was obtained from all the women before taking a pap smear. Patients were placed in the litho to my position, and a sterile bivalve speculum was inserted into the vagina.

The posterior vaginal wall was retracted posteriorly and the anterior vaginal wall anteriorly to allow proper visualization of the cervix and vaginal walls.

A sample was taken from the ectocervix by rotating a wooden Ayre spatula 360 degrees. The Endo cervical sample was taken with a Cytobrush

The sample was quickly smeared onto a labelled glass slide and fixed with 95% ethyl alcohol in a jar and sent to the Department of Pathology for cytopathological examination. Laboratory results were reported according to the new Bethesda system.

Women who had abnormal Pap test results, including ASCUS, LSIL, and HSIL were sent for colposcopic examination and biopsy was taken for those with abnormal colposcopic findings. Treatment was provided according to the stage of the disease.

Results

A total of 526 women in rural areas were studied across 9 different health centers near Rajahmundry. During this period, a Pap smear test was done in 394 women and all the women were assessed about their knowledge and attitude towards cervical cancer, Pap smear test and HPV vaccination.

Table 1: Table Depicting Age Wise Distribution Details.

Age in years	No. of women	Percentage
21 –29	84	15.9
30– 39	196	37.2
40– 49	165	31.3
50 – 59	59	11.2
>or =60	22	4.18

Most women in the study belonged to the 30–39 years age group (37.2%) and the mean age group is 36.4 years. Other age group distributions were 21-29 yrs (15.9%), 40-49 yrs (31.3%), 50-59 yrs (11.2%) and ≥ 60 yrs (4.18%)

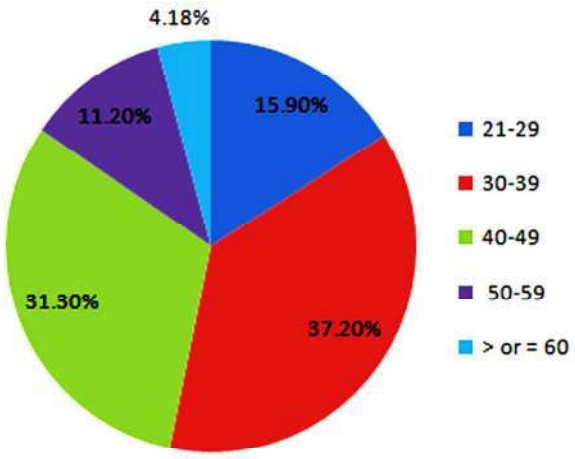

Fig. 1: Figure Depicting Age (Yrs) Wise Distribution.

Table 2: Tables Depicting Distribution of Women based on Socio Economic Status, Education, and Occupation.

Socio Economic Status	No. of Women	Percentage
Lower	391	74.3
Middle	126	23.9
Upper	9	1.7
Education	**No. of Women**	**Percentage**
No education	246	46.76
Primary school	156	29.2
High school	70	13.3
College	54	10.2
Occupation	**No. of Women**	**Percentage**
Housewife	254	48.2
Unskilled	157	29.8
Semi-skilled	84	15.9
Skilled	22	4.18
Professional	9	1.7

The majority of the women belong to lower socio-economic status i.e., 74.3%. Middle and higher SES women were 23.9% & 1.7% respectively.

Many are uneducated (46.76%) and 29.2% had primary school education, 13.3% had high school education and 10.2% had a college education. 48.2% were house-wives, 29.8% were unskilled workers 4.18% were skilled workers 15.9% Semi-skilled and 1.7% were professionals by occupation.

Table 3: Table Showing Distribution of Women Based on Marital Status and Parity.

Marital status	No. of Women	Percentage
Married	482	91.6
Single/Divorced/Widow	44	8.36
Parity	**No. of Women**	**Percentage**
Nulliparous	19	3.6

P1	88	16.7
P2	353	67.1
P3	46	8.74
P4	13	2.47
>or= P5	7	1.3

Out of 526 women, 482(91.6%) were married, and the rest 44(8.6%) are either single/divorced or widows.

Results related to Parity(P) in our study were 3.6% Nulliparous 3.60%, P1, 16.70%, P2, 67.10%, P3, 8.74%, P4, 2.47% and P5, 1.30% were ≥P5.

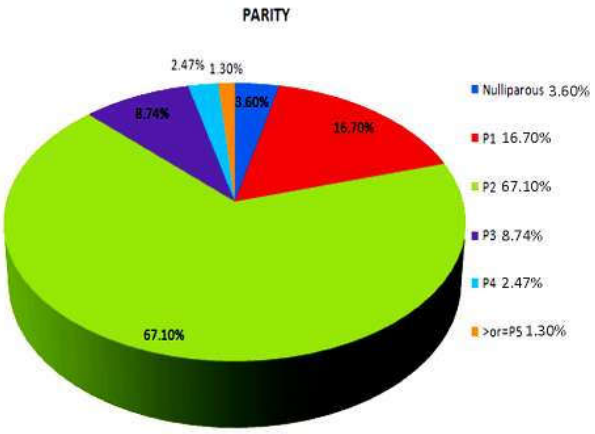

Fig. 2: Figure Depicting the Parity in the Study Population.

Table 4: Table Depictingsymptoms and Clinical History.

White Discharge	No. of women	Percentage
Yes	80	15.2
No	446	84.7
Menstrual History	No.of women	Percentage
Normal cycles	324	61.5
Menstrual abnormalities	100	19
Post menopausal	67	12.7
Hysterectomised	35	6.65
Family History of Cervical or Breast Cancers	No. of women	Percentage
Yes	8	1.52
No	518	98.4

The most common symptom among women is a white discharge which constitutes about 15.2%

Most women had normal menstrual cycles 61.5%, menstrual abnormalities are seen in 19%, 12.7% attained menopause and 6.65% were hysterectomised.

Only 1.52% had a positive family history of cervical or breast cancers while 98.4% women do not have a family history.

Table 5: Table Showing Distribution of Co-Morbidities.

Co-Morbidities	No. of Women	Percentage
Diabetes	28	5.3
Hypertension	37	7
Hypothyroidism	27	5.1
Bronchial Asthma	5	0.95
Arthritis	3	0.57
Cardiac disease	3	0.57
No co-morbidities	423	80.4

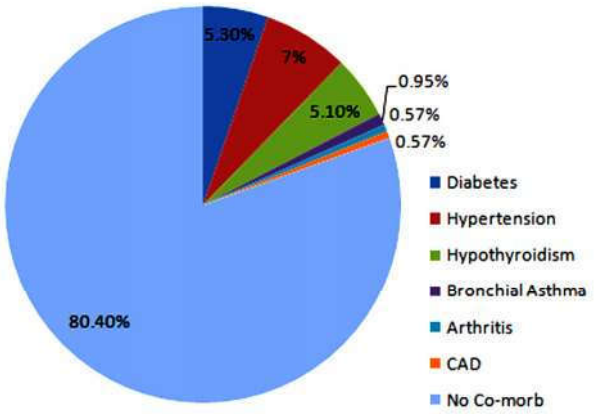

Fig. 3: Figure Showing Co-Morbidities.

Table 6: Distribution Based on Breast Examination Findings Andcervical Examination Findings.

Breast Examination	No. of Women	Percentage
Normal	516	98
Lumps	8	1.52
Nipple discharge	2	0.38
Cervical Findings on P/S and P/V Examination	No. of Women	Percentage
Healthy	482	91.6
Polyps	15	2.85
Erosions	26	4.94
Growth	3	0.57

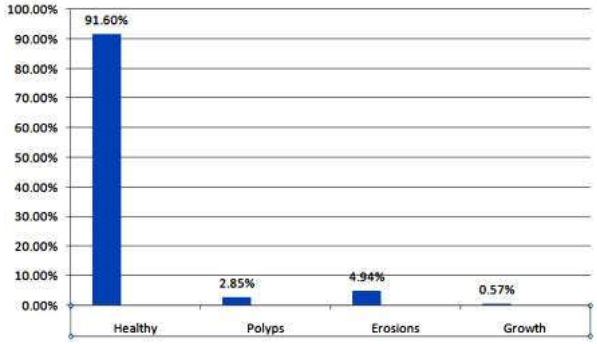

Fig. 4: Depicting Cervical Findings

Table 7: Demographic Distribution of Women based on knowledgeregarding Cervical Cancer and Pap Smear.

Knowledge About	Aware	Unaware
Cancer Cervix	407 (77.3%)	119 (22.6%)
Pap Smear	218 (41.4%)	308 (58.5%)
HPV Vaccination	106 (20.1%)	402 (79.8%)

In our study, only 77.3% had awareness about cervical cancer and 22.6% had no knowledge about cancer cervix 41.4% of participants had adequate knowledge about pap smear tests and 58.5% were unaware of the pap smear test.

Only 20.1% out of the total study population knew about HPV vaccination and 79.8% were unaware of it.

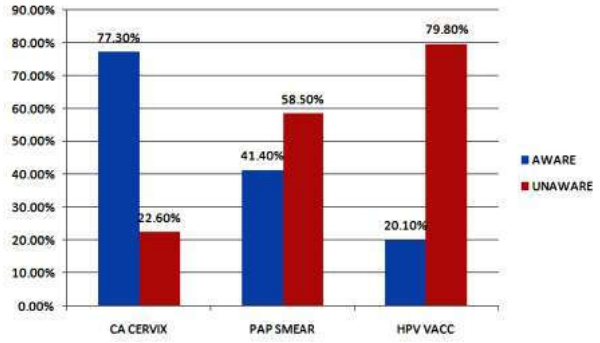

Fig. 5: Depicting Awareness.

Table 8: Distribution of Women Based on Pap Smear Results Andhpv Vaccination.

Pap Smear Result	No. of Women	Percentage
NILM	259	65.7
Inflammatory smears	123	31.2
Ascus	4	1
Lsil	3	0.76
Hsil	5	1.26
Hpv Vaccination	**No. of Women**	**Percentage**
Vaccinated	13	2.47
Not vaccinated	513	97.5

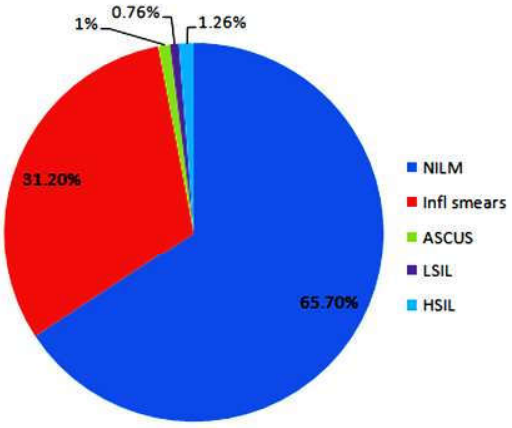

Fig. 6: Pap Smear Results.

Discussion

The Mean age group in the study population is 36.4 years compared to a study done by Ashtarian H et al., which is 34.08 years.

The majority of the women belong to lower socio-economic status i.e., 74.3%. Middle and higher SES women were 23.9% & 1.7% respectively. Many are uneducated (46.76%) and housewives (48.2%).

On average, women had 2 children with P2 (67.1%) being the most common parity comparable to a study done by Reich held et al., which is 41.7%.

In our study, only 77.3% had awareness about cervical cancer compared to the results of the study done by Chamaraja Thippeveeranna et al., which is 72.7% 41.4% of participants had adequate knowledge about Pap smear tests unlike the study done by Reich held where only 17.7% of the study population knew about tests for cervical cancer screening.

Only 20.1% of participants knew about HPV vaccination and only 2.47% got Vaccinated for HPV whereas almost no women neither heard of HPV Vaccination nor got vaccinated for HPV as seen in a study done by Reichhel et al.

Despite more women being aware of cervical cancer, utilization of Pap smear test & HPV vaccination is lower in our study participants similar to many other studies.

All the participants were unaware of the age at which pap smear should be initiated, the age at which it should be discontinued, and the interval between 2 pap smear tests.

The most common complaint of the women in our study is vaginal discharge (15.2%) which is similar to the rates n other studies.

Women in rural areas are less exposed to information on health care and have fewer opportunities to undergo a Pap smear test because of harder access to a hospital than their urban counterparts.

It was found that women who had knowledge about cervical cancer and pap smear are more likely to have a favourable attitude towards pap smear tests than women who did not have.

The cervical examination was normal in 91.6% and polyps, erosions, and growths were seen in 2.85%, 4.94%, and 0.57% respectively similar to other studies.

These data reveal, knowledge about cancer cervix and pap smear testing to be inter-related with each other.

Therefore, knowledge of cancer cervix and Pap smear tests should be provided to women in such a way that this attitude towards Pap smear testing and HPV vaccination is made favourable.

Among Pap smear test results, 65.7% were NILM (Negative for Intraepithelial Lesion or Malignancies), 31.2% were inflammatory smears.

In a study conducted by Sachan et al., 48.84% were NILM and inflammatory smears were 42.66%. The remaining results of the Pap test were 1% ASCUS, 0.76% were LSIL and 1.26% were HSIL. Other studies reported them as 2.9%, 5.09%, and 0.48% respectively.

Conclusion

Awareness about cancer cervix was adequate but awareness on Papsmear and HPV vaccination in this area are far lower than urban areas due to less exposure to health information Cervical cancer screening according to recommended guidelines is non existent in this rural area based on this study. It was observed that attitude was the only factor significantly associated with papsmear test uptake.

Lack of awareness and knowledge about Pap smear testing and HPV vaccination might be due to poor awareness camps. Thus, health education programs those are effective not only in increasing Knowledge but also in bringing about positive change in the attitude of women towards Pap smear testing and HPV vaccination should be organized to increase the rates of pap smear testing and vaccination coverage so that cervical cancer can be detected in early stages and mortality can be decreased in Rural areas.

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