Assessment of Risk factors and Warning signs of Cancer Cervix in field practice area of Rangaraya Medical College, Kakinada.

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Abstract
Background
Cervical cancer is the second most common cancer among women world wide. The estimated burden of cervical cancer in 2012 was approximately 5,28,000 new cases and 2,66,000 deaths with mortality ratio of 52% .Developing countries account for 88% of cases.. In India 1,22,644 new cases occurred of which 50% died of the disease. This study is conducted to assess the risk factors and warning signs of cancer cervix among women in field practice area of Rangaraya Medical College, Kakinada.
Objectives
- *To study the socio demographic profile.*
- *To assess the risk factors of cancer cervix among study population.*
- *To assess the warning signs of cancer cervix among study population.*
- *To screen the at risk individuals by using Pap smear.*

Materials and methods: *This cross sectional study of two months duration (Nov,Dec) was done in field practice area of Rangaraya medical college, Kakinada. Necessary permission from the concerned authorities was taken andsurvey was conducted using pre designed semi structured questionnaire. Prior informed consent was taken from individuals. Statistical analysis was done using Excel, SPSS 20.*
Results: *A total of 185 cases were taken during study period. Mean age of the study population was 35.5. Mean age at menarche was 12.8,mean age at marriage was 16.6,mean age at first child birth was18.2.62.7% were housewives,48.6% were illiterates.The presence of risk factors like multiparity, use of cloth during menstruation was 21%,86.4% respectively. Vaginal discharge was present in 37.2%.70 womenagreed to get pap smear done, of them 65.7%(46) showed inflammatory response(cervicitis) suggesting that these should be followed at regular intervals of every 3 years for early detection of cervical cancer there by improving the chances of survival.*
Conclusion: *There is a need to create awareness about risk factors and warning signs of cervical cancer and for screening with Pap smear by trained personnel further to reduce the morbidity and mortality of cervical cancer.*
Keywords: *Cervical cancer, risk factors, warning signs, Pap smear*

I.   Introduction :

Cervical cancer is one of the most common cancers in women with an average of 5,28,000 new cases per year. Out of these 80% occur in developing and underdeveloped countries. In India, cervical cancer is the most common woman related cancer,killing 1 woman every 8 minutes.World Health Organization statistics show that India carries one fifths of world burden of the disease. According to the national cancer registry program by ICMR in the year 2007,about 1,32,082 are affected by cancer and 74,118(60%) die of the disease annually as compared to the statistics of international agency for research on cancer in the year 2012,about 1,22,844 are affected and 67,477(55%)die of the disease suggesting that there is a decrease in case fatality rate of 5% over a period of 5 years.Human Papilloma Virus (HPV) predominantly HPV 16 and HPV 18 are known causative agents of cervical cancer in 70% of the cases. The virus infects the squamous epithelium of the cervix leading to precancerous, cervical intraepithelial lesions and subsequently to invasive cancer.Risk factors for cervical cancer are age, age at menarche, personal hygiene, age at marriage, age at first sexual intercourse,multiple partners parity, life style and habits. Bleeding per vagina, abnormal vaginal discharge, dyspareunia are the warning signs of cancer cervix. The use of Papanicolaou test by George Papanicolaoufor the detection of cervical cancer and the availability of preventive vaccination against HPV has brought about a change in the outcomes of cervical cancer.

II. Objectives :

- To study the socio demographic profile.
- To assess the risk factors of cancer cervix among study population.
- To quantify the warning signs of cancer cervix among study population.
- To screen the at risk individuals by using Pap smear.

III. Methods :

It is a questionnaire based cross sectional study. The study was conducted amongst ever married women in the field practice area of Rangaraya medical college, Kakinada.Hysterectomised women and those who are not willing for study were excluded. Duration of study was 2 months.Convenient sampling technique was used. A predesigned, semi structured questionnaire with questions regarding different aspects of cervical cancer pertaining to socio demographic profile,risk factors, symptoms, screening test was given to the study groups .Confidentiality was maintained by not revealing the name of the participants. The details were elicited through interview technique. All the women were interviewed in separate rooms. Necessary permissions from concerned authorities were taken. Prior informed consent was taken from individuals.

Data were entered in Microsoft excel and analysed using SPSS version 20.all the quantitative variables were expressed in terms of mean and standard deviation. All the qualitative variables were expressed as percentage of total number of women studied.Chi square test was employed to test the significance of association. Probability value <0.05 was considered statistically significant.

IV. Results

The first part of the questionnaire dealt with personal details, socio demographic variables,second part about risk factors,warning signs and last about pap smear.

Age: Mean age of study population was 35.5±10.7years. 40 % of the women were under the age group of 21-30 years,27% of the women under the age group of 31-40 years,21 % of the women under the age group of 41-50 years.
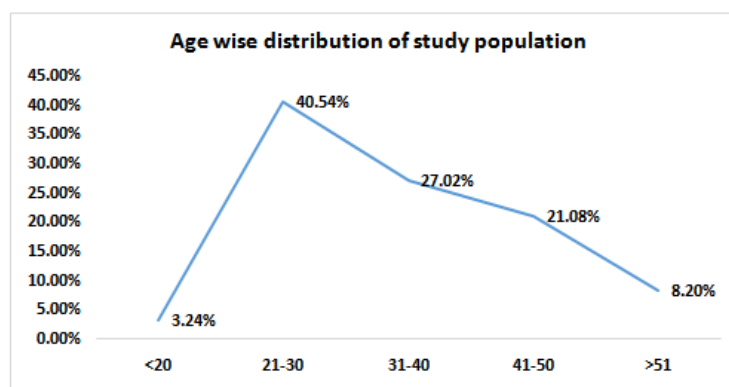

Fig 1: Distribution of population based on Age

Caste and religion: 54% belongs to BC, 29% belongs to OC and remaining belongs to SC,ST.88% of women were belongs to Hindu religion.

Education and occupation: 49% of women were illiterates.17% were completed primary education19% completed secondary education. 63% women were housewives.

Social class: 8.7% belongs to lower class,36% belongs to lower middle class,37% belongs to belongs to middle class,15% belongs to upper middle class,2.7% belongs to upper class.

Age at menarche:Mean age at menarche(N=185) was 12.8 ± 1.27. 16.2% were attained menarche at the age ≤11 years, 74% 12-14 years, 9.8% ≥15 years.

Age at marriage:Mean age at marriage(n=183) was 16.6 ± 2.9.Age at marriage ranges from 11-26 years.58% were married at the age of 15-18 years.1/5th of the population married by the age of 14 years.Only 20% were married beyond the age of 19 years.All the women were in monogamous relationship.

Age at first sexual intercourse: Mean age at first sexual intercourse(n=183) was 17 ± 2.8.59.5% were participated sexual intercourse for the first time at the age of 15-18 years.

Age at first child birth: 9.4% at the age ≤ 14 years, 47.6% between the age of 15-18 years,34% between the age of 19-22 years, rest of the women gave birth at the age ≥23 years.

Parity: 8% nulliparous,11% uniparous,60% biparous rest were multipara.

Table 1: Risk factors vs warning signs and tests of significance

RISK FACTORS		Inflammatory smear	Normal Smear	Chi square test "p" value
Age	≤30	12(66.6%)	6(33.3%)	
	≥30	34(65.3%)	18(34.7)	0.4
Age at menarche	≤12	17(58.6%)	12(41.4%)	
	≥13	29(70.7%)	12(29.3%)	0.2
Age at marriage	≤14	10(58.8%)	7(41.2%)	
	≥15	36(68%)	17(32%)	0.5
Age at first sexual intercourse	≤14	9(56.2%)	7(43.8%)	
	≥15	37(68.5%)	17(31.5%)	0.7
Age at first child birth	≤15	8(57.1%)	6(42.9%)	
	≥16	38(67.8%)	18(32.2%)	0.45
Parity	≤2	33(63.5%)	19(36.5%)	
	≥3	13(72.2%)	5(27.8%)	0.8
Menstrual Hygiene	cloth	42(65.6%)	22(34.4%)	
	pads	4(66.7%)	2(33.3%)	0.9

Contraception: 97% women were underwent tubectomy.

Menstrual hygiene: 86.5% were using cloths during menstruation.

Warning signs: Abnormal vaginal discharge was present in 37%, bleeding per vagina was present in 20%, and dyspareunia present in 3.2% of study population.

Pap smear: Out of 120 individuals who have warning signs,70(59%) were underwent papsmear. Among them 65.7% were showed inflammatory smears and rest were normal.
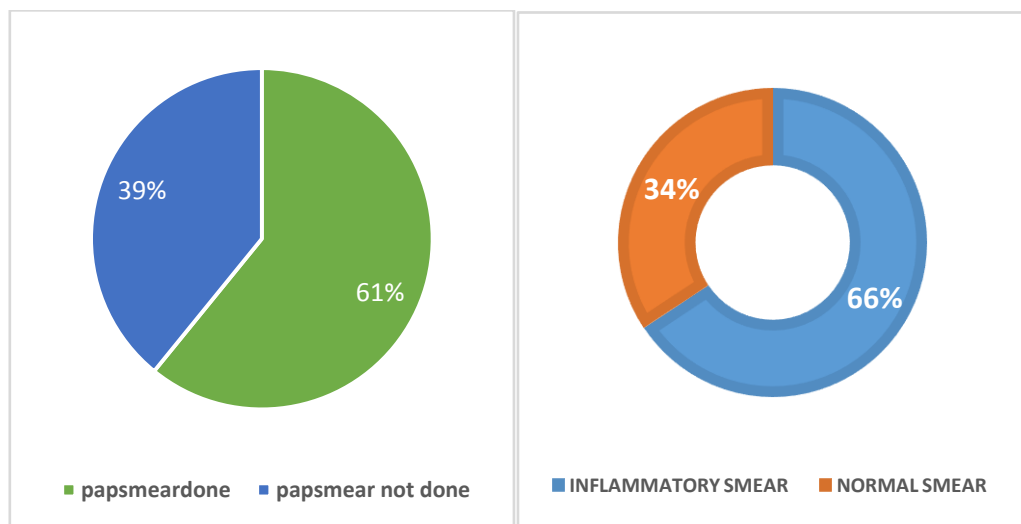

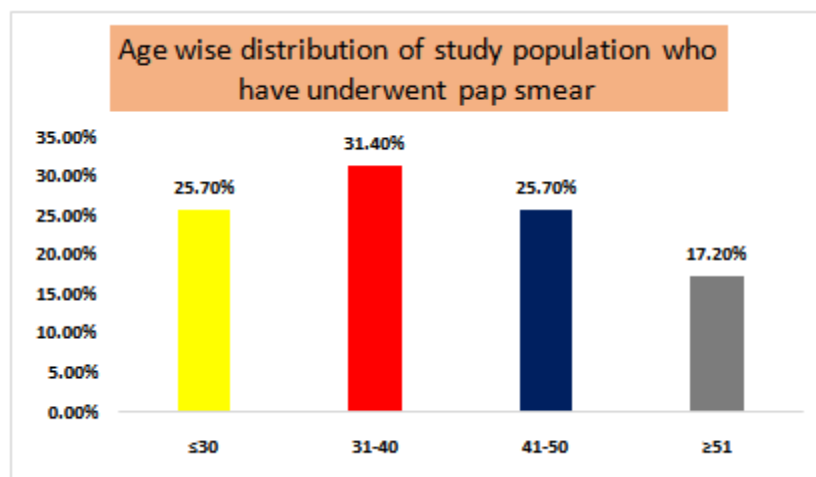**Fig 2: distribution of study population based on pap smear**

Fig 3: Age wise distribution of women based on pap smear

Table 2: Warning signs versus pap smear and tests of significance

WARNING SIGNS		Inflammatory smear	Normal Smear	Chi square test "p" value
Bleeding	YES	10(71.4%)	4(28.6%)	
	NO	36(64.3%)	20(35.7%)	0.6
Discharge	YES	25(71.4%)	10(28.6%)	
	NO	21(60%)	14(40%)	0.3
Dyspareunia	YES	4(100%)	0	
	NO	42(63.6%)	24(36.4%)	0.1

V. Discussion:

Mean age of study population was 35.5±10.7years.Age of the study population ranged from 17-65 years. Majority(67%) were in the age group of 21-40 years and the mean age was 35.5 years. Venkata Lakshmi et al (2016) in their study found that the age of the study population ranged from 18-80 years. Majority were in the age group of 36-45years and the mean age of the study population was 48.22years.

Hemalatha et al (2013) in their study in Karnataka observed that the median age of gynaecological cancer patients was 47 years.

Chhabra et al.(2002) reported that nearly half (44.6%) of the gynaecological malignancy casesoccurred between the ages of 35 and 49 years. The mean age of cervical cancer cases was 45.7 years and 38.3%of ovarian cancer cases occurred between the ages of 35 and 49 years.A study done in Ghana (Nkyekyer, 2000) had shown that the mean age for cervical carcinoma was 52.0 years.

Nearly 89% of the present study population belongs to middle class.Venkata Lakshmi et al in their study showed that nearly3/4th of the study population belong to either lower or upper lower economic class. Similar finding was seen in astudy done by Raja Rao and Hemant (2013) who studied the socio demographic profile of cervical cancerpatients in Karimnagar, Andhra Pradesh, where majority (62%) of the study population were from lower class ofsocioeconomic status The low income group may be related to high incidence of early marriage,high parity, low attendance to physician and make this vulnerable for the development of cervical cancer. The observation has been further supportedby published report from South –East Asia, Department of Health, Government of Hong Kong Administrative Region, 2004 and earlier studies by Chhabra et al 2002;Madhutandra Sarkar et al 2012. Also, Krieger et al (1999)in their study found that incidence of cervical cancer was inversely related to socioeconomic statusamong various racial/ethnic groups, poor and working class women.

93% of the study population were married, Mean age at marriage was 16yrs.Venkata Lakshmi et al reported that the majority of the study population were married (63.9%). The mean age at marriage was 14.96 years. The average age at marriage among women in India as per DLHS (2007-2008) is 19.2 years and as per DLHS(2012-13) in Andhrapradesh is 19.8 years.

In the study conducted by Sandeep Singh et al (2011) in Gwalior, India, it wasobserved that the percentage of dysplastic smears were found to be high in women who were married below 15years of age indicating the association between early age at marriage and cervical cancer in women.Sharma et al.(2005), Sarkar et al(2012), Kidanto et al.(2002), in their studies also supported thefact that early marriage is a predisposing factor for cervical cancers in their studies.

In this study, the mean age at first child birth was 18.2yrs.In the study conducted by Venkatalakshmi mean age at first child birth was found to be 16.49 yrs.Similarly Wilson et al in their study observed that relative risk for first birth at ages ⩾17 yearswas significantly lower than relative risk for first birth at age 13 for cervical cancer. Cervical cancer risk amongparous women is 77% higher in those under 17 years old at their first full term pregnancy, compared with those aged 25 years or older,a pooled analysis has shown.

About 85 % of the study population used cloth during menstruation.About 67.8% of the study population in the study of Venkata Lakshmi et al used old or reusedcloth pieces. Similarly AparajithaDasgupta et al (2002) in their study observed that 69% of the cancer cervixpatients had unhygienic genital practices.

In this study, about 37% of the population showed vaginal discharge,20% of study population showed bleeding,3.2% of the women complainted dyspareunia.Pap smear was done in 70 individuals.65.7% of the smears were inflammatory and others were normal.Mean age of inflammatory smears 41.3years.35.5% of women with discharge showed inflammatory smears.48.6% of women with bleeding per vagina showed inflammatory smears.66.6% of women with dyspareunia showed inflammatory smears(numbers are small to interpret)..

Neha dahiya et al(2017)found that majority (69 %) of women had symptoms suggestive of reproductive tract infection. Among them, unusual discharge from vagina (73.13 %) followed by bleeding after menopause (55.10 %) and pain in abdomen (44.77 %) were the most common presenting complaints.

Christopher, Edward et al(2015)in their study observed thatthe majority of participants recognized symptoms of cervical cancer including intermenstrual bleeding (85%), post-menopausal bleeding (84%), and

offensive vaginal discharge (83%). 70% of participants believed that cervical cancer is preventable and 92% believed that it could be cured if diagnosed at an early stage.

Varshachaudary, Rajeev kumar et al(2012) found that Prevalence of vaginal

discharge was found to be 24.6%.Cherian Varghese et al(1999)reported that the most common presenting symptom was vaginal discharge, which occurred in 33% of the women; lower back pain was experienced by 16% of them.

VI. Conclusions:

- Mean age of study population(n=185) was 35.5 ± 10.7 and SE= 0.78.
- Mean age at menarche(N=185) was 12.8 ± 1.27 and SE= 0.09.
- Mean age at marriage(n=183) was 16.6 ± 2.9,SE= 0.21.
- Mean age at first sexual intercourse(n=183) was 17 ± 2.8, SE= 0.2.
- Mean age at first child birth(n=183) was 18.2 ± 2.9.,SE= 0.21.
- 77.7%(31) of women <30 years refused pap smear as compared to 50%(64) of women >30 years.41.7% were refusedpapsmear though they have warning signs.
- Age didn't play any role in refusing the papsmear(z=1.02,i.e., <1.96 it is insignificant)
- Age at marriage,age at first sexual intercourse played significant role in getting warning signs.(z=6.7.,z=7.2)
- Risk factors for cancer cervix –age at menarche, age at marriage, age at first sexual intercourse, age at first child birth, parity and menstrual hygiene were not significant among the study population().
- Warning signs of cancer cervix like bleeding, discharge and dyspareunia were also not significant among study population.

Limitations
1)   Though 185 individuals were enrolled,120(58.3%) individuals have warning signs, out of which only 70 persons underwent pap smear.
2)   Questions related to sexual behaviour and personal hygiene were asked superficially. Hence accurate data could not be collected.

Recommendations:

- Awareness programs targeting women on cervical cancer and the pap smear should be initiatedExisting platforms like ARSH clinic under RCH program and RKSK under ICDS may be used for creating awareness on riskfactors and warning signs of cervical cancer along with providing information on available diagnostictechniques for screening of cervical cancer and other cancers for women.
- The existing mobile clinics in the outreach health programs may be utilisedfor creating awareness on cancers related to women(breast and cervix).

Ethical considerations: Informed consent was taken. People were educated regarding risk factors, warning signs and screening.

Conflict of interest: There are no conflicts of interest.

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