ORIGINAL RESEARCH ARTICLE

Knowledge on Risk factors and Screening Method of Cervical Cancer among Women in Rural field practice area of a Medical college in Chittoor District, Andhra Pradesh

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ABSTRACT:

Background: Cervical cancer is the most prevalent among Indian women and the second most common malignancy in women. Indian women are not very aware of cervical cancer and how to prevent it. A quick and affordable method for detecting cervical cancer early is the Pap test.

Objectives: To assess the knowledge about the cervical cancer and cervical screening method among women and to determine the association between socio-demographic characteristics and knowledge on cervical cancer, screening method among women in a rural area of Tirupati.

Methodology: A community based cross sectional study was carried out in a rural area of Tirupati. Systematic random sampling method was used to select the study subjects. A pretested, semi structured questionnaire was used to collect the data. Necessary statistical tests like chi-square tests were applied for data analysis.

Results: A total of 212 females aged 30 years and above were included in the study. Mean age of the study group was 47.68 ± 12.57 years. Majority of study participants belongs to 30 to 40 years age group (32.5%). Mean age at the time of marriage was 20.26 ± 3.035 years. About 38.7% of study participants have heard about cervical cancer, 9.4% of women were heard about cervical screening and 4.7% have knowledge on availability of HPV vaccine. The knowledge of cervical cancer and the knowledge of screening method were significantly associated with women who had family history of cervical cancer, family history of other cancers and educational status (p value < 0.05).

Conclusions: Lack of awareness and motivation are the important reasons for the high burden of disease. Planning and conducting information education communication activities on this important issue on a regular basis are extremely necessary.

Keywords: knowledge, cervical screening, rural, women, cervical cancer, HPV vaccine

INTRODUCTION:

In 2020, GLOBOCAN estimates that 6,04,000 women worldwide were diagnosed with cervical cancer and approximately 3,42,000 women died from the disease. Cervical cancer is the most commonly diagnosed cancer in 23 countries and is the leading cause of cancer death in 36 countries. Most of these countries are located in sub-Saharan Africa, Melanesia, South America and South-Eastern Asia. In low- and middle-income nations, new cases and fatalities accounted for around 90% of global mortality in 2020.[1] The World Health Organization (WHO) projects that the number of global cancer deaths will rise by 45% between 2008 and 2030.[2] Burden of cervical cancer is greatest in low- and middle-income countries, because of limited access to public health services and screening for the disease. Cervical cancer is a preventable disease. It is also curable if detected early and adequately treated. Yet it remains one of the most common cancers and causes of cancer-related death in women across the globe. More than 85% of those affected are young, undereducated women who live in the world's poorest countries. Many are also mothers of young children whose survival is subsequently truncated by the premature death of their mothers.[3]

Cervical cancer prevention also plays an integral role in reaching the Sustainable Development Goals (SDGs), both for health (SDG 3) and gender equality (SDG 5).[4] India accounts for nearly one-fourth of the world's cervical cancer deaths, with 60,078 deaths and 96,922 new cases in 2018.[5,6] This largely preventable disease is the second most common cause of cancer mortality among Indian women.[7] In the world, about 25% of all cervical cancer deaths occur in India where the incidence is very high among women in rural areas and low socio-economic status.[8] Most cases of cervical cancer are preventable, with access to HPV vaccine and early detection. Pap smear test has been credited with dramatically reducing the number of cases of cervical cancer in developed countries.[9] Despite the availability of methods for prevention, >95% of women in India have never been screened for cancer cervix.[10] There are several barriers to cervical cancer screening uptake for women in developing countries like India that include low level of awareness and knowledge of risk factors and early signs and symptoms of disease, prevention services, stigma. With this background, the present study was conducted with the following objectives:

OBJECTIVES
1. To assess the knowledge about cervical cancer among women in rural field practice area of SVIMS-Sri Padmavathi Medical College for Women, Tirupati.
2. To assess the knowledge about cervical screening method among women in rural field practice area of SVIMS-Sri Padmavathi Medical College for Women, Tirupati.
3. To determine the association between socio-demographic characteristics and knowledge on cervical cancer, screening method among women in rural field practice area of SVIMS-Sri Padmavathi Medical College for Women, Tirupati.

METHODOLOGY

This was a Community based cross sectional study conducted women aged above 30 years in three months from June 2022 to August 2022 in the rural field practice area of

SVIMS-Sri Padmavathi Medical College for Women, Tirupati. The field practice area includes rural field practice area which comes under Rural Health Training Centre, Mangalam, Tirupati, Chittoor District, Andhra Pradesh. Rural Health Training Centre, Mangalam comprises of 5 sub-centres i.e Mangalam-1, Mangalam-2, Settipalli, BTR colony and TUDA quarters.

Sample size: Considering 43.8% subjects were aware of at least one screening method for cervical cancer, in a study conducted by Shubhashis Saha et al. [11], by using formula $N = Z^2pq/L^2$ with acceptable error 7 % at 95% confidence interval, sample size in the present study was calculated. The estimated sample size was 192. Considering non response rate as 10%, final sample size was 212.

Sampling strategy:
Systematic random sampling method was used to select the study subjects. Three sub-centres in rural area were selected randomly using random number table method. Households in each selected village were selected by systematic random sampling method. All the women aged 30 years and above in the selected households were included in the study.

Ethical clearance: Before starting the study, ethical clearance was obtained from Institutional Ethics committee (IEC), Sri Venkateswara Institute of Medical Sciences (SVIMS), Tirupati.

Inclusion criteria: Women aged above 30 years and who had given consent were included in the study.

Exclusion criteria: Women diagnosed with cervical cancer and who did not given consent to participate in this study were excluded.

Data collection: A pretested, semi structured questionnaire was used to collect the data. A pilot study was conducted using study questionnaire and tested for appropriateness and the actual study was started after making necessary corrections and advises in it. Informed written consent was taken from the study subjects after explaining the purpose and objectives of the study in their own language and confidentiality was assured. Questionnaire was divided into two sections a) socio-demographic characteristics of the participants b) knowledge about cervical cancer with questions related to awareness and screening methods.
Statistical analysis: Collected data was entered in MS Office Excel Worksheet and analysed by using IBM SPSS software 26.0 Version. Categorical data was represented in the form of percentages and proportions. Continuous variables were represented in the form of mean and standard deviation. Chi-square test was applied to test the difference in awareness levels by Socio-demographic and p-value less than 0.05 was considered as statistically significant.

RESULTS:
The present study was conducted in the field practice area of Rural Health Training Centre (RHTC) of the Department of Community Medicine, SVIMS-Sri Padmavathi Medical College for Women, Tirupati, Chittoor district, Andhra Pradesh. A total of 212 females were

included in the study. Mean age of the study group was 47.68 $\pm$ 12.57 years. Majority of study participants belongs to 30 to 40 years age group (32.5%) and were Hindu (95.3%) by religion. Mean age at the time of marriage was 20.26 $\pm$ 3.035 years. About 96.2% of the study participants were married. Majority of the study participants were illiterates (41.0%) followed by high school level education (33.5%); Majority of study participants belongs to nuclear family (85.4%) and middle class (45.8%). (Table1)

Table 1: Socio-demographic characteristics of the study population (N=212)

| Characteristic	Category	Number (n)	Percentage (%)
Age group (in years)	30 - 40	69	32.5
	41 - 50	60	28.3
	51 - 60	48	22.6
	Above 60	35	16.5
Religion	Hindus	202	95.3
	Christians	5	2.4
	Muslims	5	2.4
Marital status	Married	204	96.2
	Unmarried	2	0.9
	Widowed	6	2.8
Education	Illiterate	87	41
	Primary	27	12.7
	Secondary	71	33.5
	Intermediate	11	5.2
	Degree	16	7.5
Type of family	Nuclear	181	85.4
	Joint	29	13.7
	Three generation	2	0.9
Socioeconomic status	Upper class	9	4.2
	Upper Middle Class	73	34.4
	Middle Class	97	45.8
	Lower Middle Class	27	12.7
	Lower class	8	2.8

Women who were having family history of cervical cancer and family history of other cancers were 2.8% and 1.9% respectively. (Table 2 & Figure 1)

Table 2: Distribution of study participants according to family history of cancer (N =212)

	N	%
Family history of cervical cancer		
Yes	6	2.8
No	206	97.2
Family history of other cancers		

Yes	4	1.9
No	208	98.1

Figure 1: Distribution of study participants according to family history of cancer
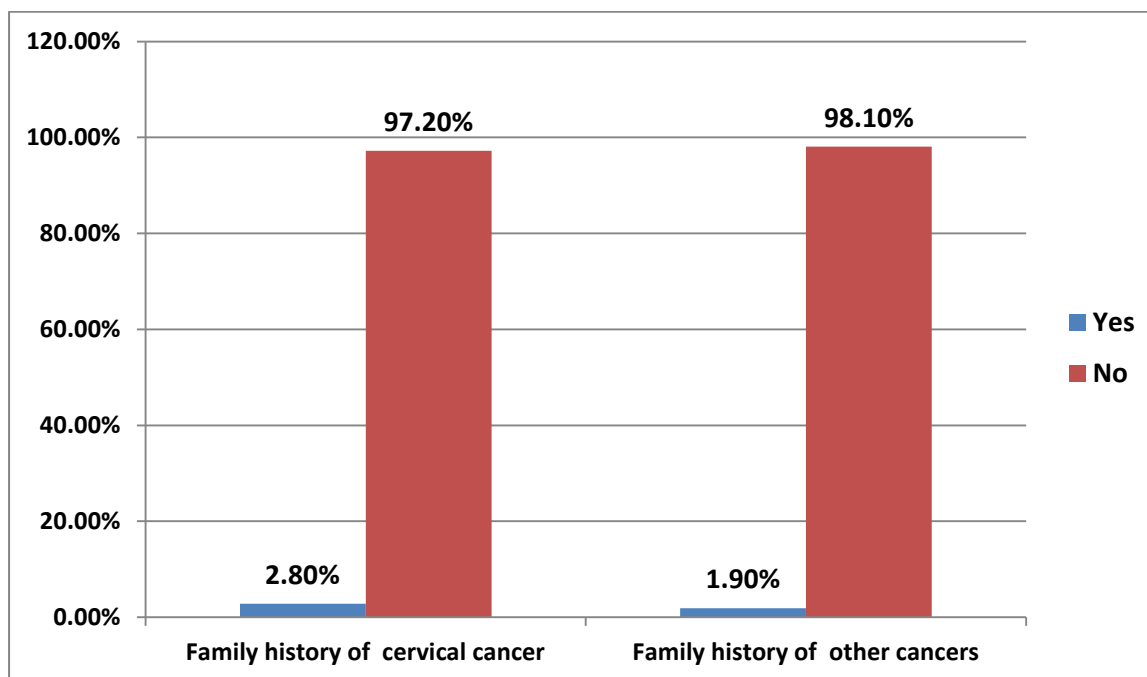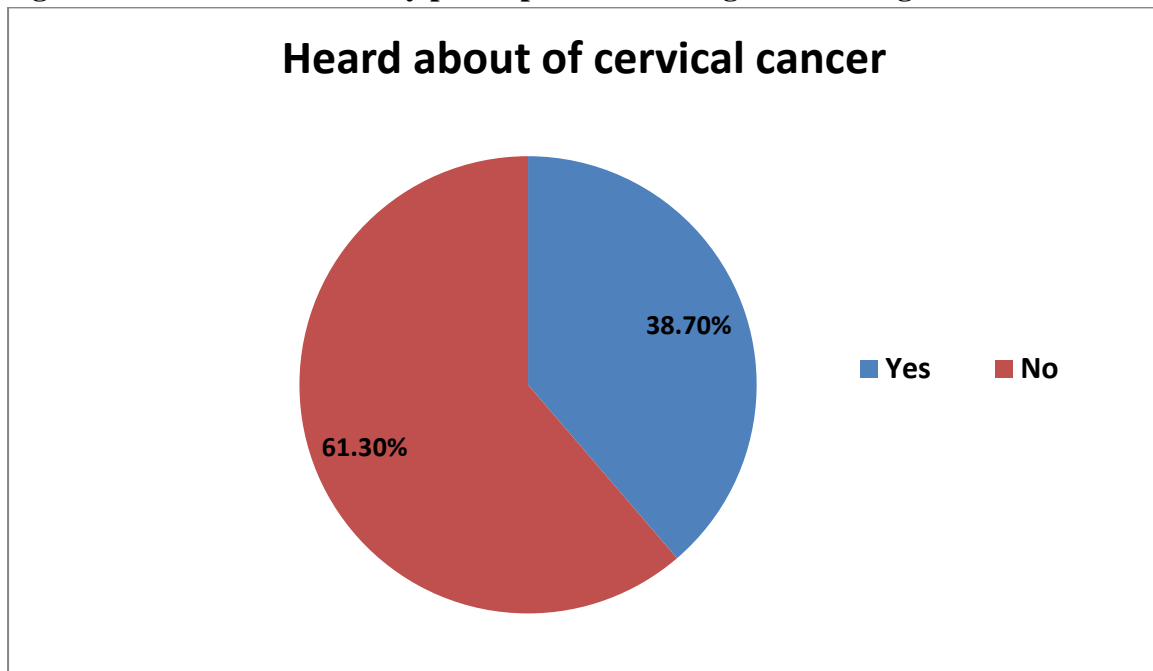

Knowledge about cervical cancer: 38.7% of women have heard about cervical cancer. (Figure 2). Knowledge regarding risk factors showed that women knew HPV infection (6.6%), multiple sexual partners (7.5%), young age of coitus (3.3%), tobacco use (4.7%), history of sexually transmitted diseases (8.5%), poor genital hygiene (9.0%), prolonged use of birth control pills (>5 years) (6.1%), young age at first child birth (2.8%) and multiple pregnancies (3.8%). The responses of cervical cancer signs and symptoms were reported as bleeding in between periods(15.1%), foul smelling vaginal discharge (12.3%), postmenopausal bleeding (9.4%), periods heavier and of longer duration than usual (12.7%), pain during intercourse (9.0%) and post coital bleeding (7.1%). (Table 3 & Figure 2)

Table 3: Distribution of study participants according to Knowledge of cervical cancer (N =212)

Knowledge	Category	Number (n)	Percentage (%)
Heard of cervical cancer	Yes	82	38.7
	No	130	61.3
Risk factors of cervical cancer	HPV infection	14	6.6
	Multiple sexual partners	16	7.5
	Young age of coitus	7	3.3
	Tobacco use	10	4.7
	History of sexually transmitted diseases	18	8.5

	Poor genital hygiene	19	9.0
	Prolonged use of birth control pills (>5 years)	13	6.1
	Young age at first child birth	6	2.8
	Multiple pregnancies	8	3.8
Signs and symptoms of cervical cancer	Bleeding in between periods	32	15.1
	Foul smelling vaginal discharge	26	12.3
	Postmenopausal bleeding	20	9.4
	Periods heavier and of longer duration than usual	27	12.7
	Pain during intercourse	19	9.0
	Post coital bleeding	15	7.1

Figure 2: Distribution of study participants according to knowledge of cervical cancer

Heard about of cervical cancer

38.70%
61.30%
Yes No

Knowledge about screening methods: 9.4% of women were heard about cervical screening. Majority (88.2 %) were not sure about age for screening. Majority (99.5%) have no knowledge on how often screening should be done. (Table 4)

Knowledge on cervical cancer prevention:

Only 4.7% have knowledge on availability of HPV vaccine. None of the study participants know about age for HPV vaccination.

Table 4: Distribution of study participants according to Knowledge about screening methods (N =212)

Knowledge about screening methods	N	%
Heard of cervical cancer screening		
Yes	20	9.4

No	192	90.6
Age for screening		
From 20 years	8	3.8
From 30 years	2	0.9
After Menopause	15	7.1
Not sure	187	88.2
How often screening should be		
Don't know	211	99.5
3 years	1	0.5

The knowledge of cervical cancer was significantly associated with age (p=0.001), education (p<0.0001), socio economic status (p<0.0001) and was not associated with religion, marital status and type of family. (Table 5)

Table 5: Association between socio demographic characteristics and knowledge of cervical cancer among women

Variable	Category	Knowledge		χ^2	p-value
		Yes (%)	No (%)		
Age group	31 - 40	36 (52.2)	33 (47.8)	17.543	0.001*
	41 - 50	28 (46.7)	32(53.3)		
	51 - 60	12 (25.0)	36 (75.0)		
	Above 60	6 (17.1)	29 (82.9)		
Religion	Hindus	77 (31.8)	125 (61.9)	0.989	0.610
	Christians	63 (60.0)	2 (40.0)		
	Muslims	2 (40.0)	3 (60.0)		
Marital status	Married	81(39.7)	123 (60.3)	3.983	0.136
	Unmarried	1(50.0)	1 (50.0)		
	Widowed	0 (0.0)	6 (100)		
Education	Illiterate	19 (21.8)	68 (78.2)	21.883	<0.0001*
	Primary	9 (33.3)	18 (66.7)		
	Secondary	39 (54.9)	32 (45.1)		
	Intermediate	6 (54.5)	5 (45.5)		
	Degree	9 (56.3)	7 (43.8)		
Type of family	Nuclear	76 (42.0)	105 (58.0)	6.563	0.38
	Joint	5 (17.2)	24 (82.8)		
	Three generation	1 (50.0)	1 (50.0)		
Socioeconomic status	Upper class	4 (21.8)	5 (55.6)	21.883	<0.0001*
	Upper Middle Class	29 (33.3)	44(60.3)		
	Middle Class	42(54.9)	55(56.7)		
	Lower Middle Class	5(54.5)	22(81.5)		
	Lower class	2 (56.3)	4(66.7)		

(*p-value < 0.05, Significant)

The knowledge of cervical screening method, was associated with age group (p=0.006), education (p<0.0001) and was not associated with religion, marital status, type of family and socio-economic status (Table 6).

Table 6: Association between socio demographic characteristics and knowledge of cervical cancer screening method

Variable	Category	Knowledge		χ^2	p-value
		Yes (%)	No (%)		
Age group	31 - 40	13 (18.8)	56 (81.2)	12.435	0.006*
	41 - 50	5 (8.3)	55 (91.7)		
	51 - 60	2 (4.2)	46 (95.8)		
	Above 60	0 (0.0)	35 (100)		
Religion	Hindus	17 (8.4)	185 (91.6)	6.366	0.41
	Christians	2 (40.0)	3 (60.0)		
	Muslims	1 (20.0)	4 (80.0)		
Marital status	Married	20 (9.8)	184 (90.2)	3.983	0.136
	Unmarried	0 (0.0)	2 (100)		
	Widowed	0 (0.0)	6 (100)		
Education	Illiterate	5 (5.7)	82 (94.3)	21.883	<0.000*
	Primary	4 (14.8)	23 (85.2)		
	Secondary	4 (5.6)	67 (94.4)		
	Intermediate	0 (0.0)	11 (100)		
	Degree	7 (43.8)	9 (56.3)		
Type of family	Nuclear	76 (42.0)	105 (58.0)	6.563	0.38
	Joint	5 (17.2)	24 (82.8)		
	Three generation	1 (50.0)	1 (50.0)		
Socioeconomic status	Upper class	1 (11.1)	8 (88.9)	4.953	0.292
	Upper Middle Class	3 (4.1)	70 (95.9)		
	Middle Class	13 (13.4)	84 (86.6)		
	Lower Middle Class	3 (11.1)	24 (88.9)		
	Lower class	0 (0.0)	6 (100.0)		

(*p-value < 0.05, Significant)

The knowledge of availability of vaccine was associated with education (p=0.001) not associated with age, religion, marital status, type of family and socio-economic status (Table7).

Table 7: Association between socio demographic characteristics and knowledge of availability of vaccine

Variable	Category	Knowledge		χ^2	p-value
		Yes (%)	No (%)		
Age group	31-40	5 (7.2)	64(92.8)	3.963	0.265
	41- 50	4 (6.7)	56(93.3)		

	51- 60	1 (2.1)	47(97.9)		
	Above 60	0 (0.0)	35(100)		
Religion	Hindus	9 (4.5)	193(95.5)	2.877	0.237
	Christians	1 (20.0)	4(80.0)		
	Muslims	0 (0.0)	5(100)		
Marital status	Married	10 (4.9)	194(95.1)	0.412	0.814
	Unmarried	0 (0.0)	2 (100)		
	Widowed	0 (0.0)	6 (100)		
Education	Illiterate	4 (4.6)	83 (95.4)	19.143	0.001*
	Primary	2 (7.4)	25 (92.6)		
	Secondary	0 (0.0)	71 (100)		
	Intermediate	0 (0.0)	11 (100)		
	Degree	4 (25.0)	12 (75.0)		
Type of family	Nuclear	10 (42.0)	171 (94.5)	1.797	0.407
	Joint	0 (0.0)	29 (82.8)		
	Three generation	0 (0.0)	2 (50.0)		
Socioeconomic status	Upper class	0 (0.0)	9 (100)	3.487	0.480
	Upper Middle Class	3 (4.1)	70 (95.9)		
	Middle Class	7 (7.2)	90 (92.8)		
	Lower Middle Class	0 (0.0)	27 (100)		
	Lower class	0 (0.0)	6 (100.0)		

(*p-value < 0.05, Significant)

The knowledge of cervical cancer associated with women who had family history of cervical cancer (p=0.033), knowledge of cervical cancer screening method associated with women who had family history of cervical cancer (p=0.001) and family history of other cancers (p=0.005), knowledge of availability of vaccine was significantly associated with women who had family history of cervical cancer (p=0.001) and family history of other cancers (p<0.0001) (Table 8)

Table 8: Association between family history of cancer and knowledge of cervical cancer among women

Variable	Knowledge of cervical cancer		Knowledge on screening method		Knowledge on availability of vaccine	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Family history of cervical cancer	5 (83.3)	1 (16.7)	3 (50.0)	3 (50.0)	3 (50.0)	3 (50.0)
	77 (37.4)	129 (62.6)	17 (8.3)	189 (91.7)	7 (3.4)	199 (96.6)
	χ^2 5.191 p-value 0.033*		χ^2 11.983 p-value 0.001*		χ^2 11.983 p-value 0.001*	
Family history of other cancers	3 (71.4)	1 (28.6)	2 (50.0)	2 (50.0)	2 (50.0)	2 (50.0)
	79 (11.3)	129 (88.7)	18 (8.7)	190 (91.3)	8 (3.8)	200 (96.2)
	χ^2 2.268		χ^2 7.852		χ^2 18.600	

	p-value 0.132	p-value 0.005*	p-value <0.0001*

(*p-value < 0.05, Significant)

DISCUSSION

This study assessed the knowledge and screening practices of cervical cancer among 212 women in rural area of Tirupati. Only 38.7% have heard about cervical cancer, 9.4% were heard about cervical cancer screening method, 4.7% were heard about availability of vaccine. In a study conducted by Boratne AV et al.[12] reported 37.6% had awareness on cervical cancer, 90.6% not heard about PAP smear, 95.3% not heard about HPV vaccine, which is similar to the present study and also showed women's knowledge of the cervical cancer associated with education and the difference was statistically significant and it was not associated with the type of family which is similar to the present study. Ramaiah R and Jayarama S [13] from rural Karnataka found that 65.5% of the study subjects have heard about cervical cancer which is higher than the present study. This variation may be attributed to the difference in literacy rate among the respondents. Begum R et al.[14] reported 7.5% of the respondents had heard about cervical cancer. Shresthas et al. [15] reported education level of women was statistically significant with level of knowledge regarding cervical cancer screening.

Paras Kharbanda et al [16] found that only 10% of women were aware of pap-smear and none of the women known that HPV vaccine is available which is similar to the present study. In a study conducted by Misra M etal.[17] showed that 66% were aware of cervical cancer and 20% were aware with pap smear. Nelson SB et al. [18] reported 32% have awareness on cervical cancer which is similar to the present study, 30.9% were aware about screening test which is higher than the present study may be due to high literacy status. Aswathy S et al. [9] in a study in rural Kerala also reported that 72.1% of the women were aware of cervical cancer which is higher than the present study may be due to high literacy status and difference in the sample size. Awareness level reported by Raychaudhuri S et al. [19] in rural West Bengal was 87.3% which was higher than the present study. In the present study, there was relatively little knowledge about illness symptoms, risk factors, screening tests and vaccine. This could be as a result of the women's lower literacy levels and lower socioeconomic class. All women need to adopt new behaviours, and community-based organisations must be involved. Health facilities, as well as the community, may plan health education sessions. Teachers and family members can be key participants in awareness campaigns. The main causes of the high burden of disease are lack of knowledge and lack of drive. It is also important to regularly plan and carry out information education communication initiatives on cervical cancer.

CONCLUSIONS:

There is a lack of knowledge on cervical cancer risk factors, signs, symptoms, screening method and prevention of cervical cancer in this study. A well-organized cervical cancer screening programme is recommended to increase knowledge regarding risk factors, screening test and prevention. There is need for organized education programs to create on cervical screening and prevention. Community health workers are important sources of motivation for promoting cervical cancer screening among the general public. Once

motivated, rural women can visit the closest health facility for screening. Thus, it is crucial to start efforts to close the current gap between perception and actual cervical cancer screening practices. This can be accomplished by expanding the educational opportunities available to community health workers and motivating them to take part in screening efforts.

Source of funding: Nil.

Conflicts of interest*:* Authors declare no conflicts of interest.

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