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A Study on Awareness of Cervical Cancer among Women of Reproductive Age Group in the Rural Field Practice Area of Medical College, Kolkata

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ABSTRACT
Cervical cancer is the fourth most common cancer worldwide and it is also the fourth most common death from cancer. 341, 831 deaths were attributed to this malignancy in 2020 globally. And, in women it just comes after breast carcinoma. The disease can be screened and the severity of it can be restricted. Most of the disease burden is attributed by the HPV virus. To determine knowledge regarding cervical cancer, its symptoms and risk factors, number of women screened for cervical cancer, the number of women willing to get screened and the attitude regarding the vaccine among the study participants. A cross-sectional, descriptive study of reproductive age group residents of the rural field practice areaof Medical College Hospital, Kolkata. A pre-tested, structured, pre-validated schedule was used to interview 164 participants. A Software called Statistical Package for the Social Sciences, version 21.0, was used to analyze the data. 70 (42.68%) participants have heard of Cervical Cancer. 17.68% of the total participants had adequate knowledge about symptoms and 09.14% about the risk factors of cervical cancer. Only 28(17.07%) participants have been screened for cervical cancer.31 participants have heard about vaccine but none of them received it. The findings of the study revealslack of knowledge regarding cervical cancer. Our analysis shows knowledge to be significantly associated with level of education, religion and socio-economic status. There is also resistance in getting screened. And no one received vaccine, mostly due to its unavailability in government setups.

INTRODUCTION

Cervix is the lowest part of uterus, bridging the uterine cavity with the vaginal cavity through endocervical canal in the human female reproductive system. The openings into the uterine cavity and the vaginal canal are known as internal os and external os, respectively. The upper two thirds of the cervix (endocervix) lie above the vagina, while the lower third (ectocervix) is inside the vagina. The junction between ectocervix and endocervix has a squamo-columnar junction (uterine columnar cells meets the vaginal stratified squamous epithelium)[1].

Nearly any part of the human body can develop cancer, which occurs due to uncontrolled, unchecked development of cells. It is known as cervical cancer or cancer cervix when cancerous growths appear in a woman's cervix. Most cervical cancers originate in the squamocolumnar junction, where the endocervix and ectocervix join. More than 90% of instances are caused by human papilloma virus (HPV)[2,3]. nevertheless, the majority of people who have had HPV infections do not go on to develop cervical cancer[4]. Nearly 50% of high grade cervical pre-cancers are caused by HPV 16 and 18 strains. Smoking, a weakened immune system, birth control pills, beginning sex at a young age and having numerous sexual partners are other risk factors. Cervical cancer risk is also influenced by genetic factors.

Cervical cancer is the fourth most common cancer worldwide and it is also the fourth most common death from cancer. 341, 831 deaths were attributed to this malignancy in 2020 globally[5] and in women it just comes after breast carcinoma. With 60,078 fatalities and 96, 922 new cases of cervical cancer in 2018, India is responsible for over one-fourth of all cervical cancer deaths worldwide[4-6]. In 2020 1, 23,907 new cases were registered which accounted to 9.4% of all cancers in India. Cervical cancer is the second most frequent cause of cancer mortality among Indian women (consistent with world figures), which is entirely avoidable[5-7]. Higher income countries have successfully decreased their burden of cervical cancer by up to 65% over the last four decades through HPV vaccination and screening programmes[4]. The majority of cervical cancer cases can be avoided by immunising young females against HPV 16 and HPV 18, which are responsible for 70% of cervical malignancies[5]. Regular screening also enables the early identification and treatment of precancerous lesions. A Health Technology Assessment for the early diagnosis of cervical cancer was recently published by the Department of Health Research. There is enough data to conclude that screening lowers the incidence of cervical cancer, which in turn lowers the number of cancer-related fatalities[9]. It also comes to the conclusion that VIA every five years is the most affordable screening strategy in the context of India. But screening practices are limited and one study shows it to be 30% among Indian women aged 15-49 years[3-7]. The situation is especially concerning in rural areas where the majority of women lack literacy, are unaware of the risks of cervical cancer, and where access to healthcare is limited[10]. In similar resource-limited environments around the world, women often present with advanced stages of cervical cancer and due to lack of lack treatment resources, poor prognosis due to late diagnosis is frequent[9]. Previous studies show that low income of females, far-away location of screening facilities, cost of screening test, shynessare some of the contributing factors for not being willing to get screened[3].

In India two vaccines a bivalent vaccine Cervarix, marketed by Glaxo Smith Kline (16,18) and a quadrivalent vaccine Gardasil(8,11,16,18), sold by Merck is available for over a decade(since 2008). Recombinant DNA technology is used to create non-infectious VLPs (Virus Like Particles) that contain the HPV L1 protein for both vaccinations. The Drug Controller General of India has given the go light to Serum Institute of India's CERVAVAC, the nation's first locally produced cervical cancer vaccine. The Bill and Melinda Gates Foundation and DBT's Biotechnology Industry Research Assistance Council (BIRAC), which sponsored Serum's development efforts, collaborated to create CERVAVAC. It is also a quadrivalent vaccine. But the vaccines are not included in any national programmes as of yet. Previous studies done in rural and urban settings, show very negligible knowledge about the vaccines[4]. Acceptability of the vaccine is also low, and the reasons cited were the price of the vaccine, the lack of awareness about it, the lack of nearby centres where vaccine is administered, fear from syringes etc.

Review of Literature:

- According to a study in Haryana, in comparison to urban areas, the majority of women from rural areas had less knowledge regarding HPV infection (87.5%), cervical cancer (55%) and HPV vaccination (95%) than urban women did. Both rural and urban communities had very little awareness of symptoms and risk factors[12].
- In a study in south India it is seen that 7.1% of participants had received cervical cancer screening and 14.3% had at least one lifetime pelvic check. Women with greater socioeconomic class, who were married before the age of 18 and who practiced a faith other than Hinduism were more likely to be screened. Single women were not subjected to screening. 84.6% of women had a low understanding of cervical cancer, 10.3% had intermediate awareness and 5.1% had strong knowledge. Women under the age of 41 knew more about the condition[4].

- A study in rural and urban North Bengal Risk factors like multiple pregnancies, young marriage, wearing clothes during periods, using condoms and OCP and having their first sex at a young age were all more common than average, with respective prevalence rates of 37.2%, 82%, 83.3%, 5.4%, 15.8% and 65.6%. 3.6%, 6.3%, 3.6%, 9.5%, and 14.5% of people were aware of the causes, symptoms, prevention of cervical cancer, PAP test, and HPV vaccination, respectively. According to Chi-square testing, there is a significant difference of 5% between rural and urban people in the research population with regard to the number of children, use of cloth/sanitary napkins, family history of cancer and awareness of the causes of cervical cancer. Using chi-square tests once more, the amount of education is surprisingly found to be significant for each component of KAP in urban regions as opposed to complete lack of association in rural areas[13].

Gap in Literature: Very few studies on awareness about cervical cancer were conducted in eastern India, with studies done among rural individuals being sparse. Cervical cancer is the 2nd most leading cause of death among Indian women due to cancer. The disease can be screened and the severity of it can be restricted. Most of the disease burden is attributed by the HPV virus. Thus, getting the vaccine can even prevent the disease from occurring. Hence, it is important to know the awareness regarding cancer, its screening facilities, and available vaccines.

Objectives:

- To describe the socio-demographic characteristics of the study participants.
- To determine knowledge regarding cervical cancer, its symptoms and risk factors among study participants.
- To find out the number of women screened for cervical cancer among the study participants and the number of women willing to get screened.
- To estimate the number of women vaccinated against HPV(Human Papilloma Virus) and the attitude regarding the vaccine among the study participants.

MATERIALS AND METHODS

Study Design: This study is a cross-sectional descriptive observational study that is based on a data collection form for interviews. The Human Studies, Reference number: MC/KOL/IEC/NON-SPON/ dated:) The institutional Ethics Committee accepted the study methodology, which was carried out over a two-month period from January-February 2024.

Study Setting: The study was conducted at Rural Field of Medical College, Kolkata. Rural Practice area (Rohanda Health and Wellness Centre under Madhyamgram Rural Hospital). Rohanda Health and Wellness Centre provides health care services to 5 villages: Barpol, Chowghoria, Palitpara, Gobra, Rohanda.

Study Participants (Inclusion Criterion): The study comprised Women of reproductive age group(15-49 years) residing in the rural field practice area of Medical College, Kolkata, West Bengal, uninterrupted for the last 12 months and willing to give written informed consent.

Exclusion Criterion: Participants not willing to give written consent were excluded from the study along with Severely ill residents and residents who have already suffered from cervical cancer and residents with psychiatric disorders.

Sample Size: Previous study done among women in reproductive age group in rural areas of Kerala, India showed that 72.1% of the study participants knew that cervical cancer is a cancer affecting women[5] So, using the formula $n=3.84pq/l^2$ where p=72.10 and q(100-p) =27.90. and, Considering an absolute error of 10% (relative error of 7.21%)We find n=148.56 rounded of to 149. Using a non-responsive rate of 10%, the minimum final sample size came to 164.

Sampling Technique: To obtain the appropriate sample size (n=164), a simple random sampling procedure without replacement was used from a sampling frame of women in reproductive age group residing in the villages covered by the Health and Wellness centre. The line listing of them was done in alphabetical order and names were randomly included in the study as generated by software.
The total study period is of 2 months with 1 dayper week taken for data collection. Data was collected on a total of 8 days. 21 study participants were interviewed per day on average. Then with the help of front line health workers door to door survey was conducted to collect data.

Study Tool: A pre-designed, pre-tested, semi-structured data collection form was used having two parts with the first part having socio-demographic Characteristics of the participants and the second part consisting of questions to assess the status of awareness regarding cervical cancer, its risk factors, symptoms, vaccine and screening tests(including barriers for such) using modified cervical cancer awareness measure toolkit/questionnaire.

For checking adequacy of knowledge regarding symptomsten symptoms were asked and participants who could answer five or more correctly were considered to have adequate knowledge. Similarly, for risk factors regarding cervical cancer eight risk factors were listed and participants marking four or more correctly were considered to have adequate knowledge regarding the same.

The questionnaire was first used to interview 15 participants and reliability was checked. (Cronbach's alpha came to be 0.748) These 15 participants were not included in the final frame of the study.

Method of Data Collection: The line listing of the participants was obtained from the Health and Wellness centre. The participants were sorted and arranged in alphabetical order. Then participants were selected by a simple random sampling technique without replacement. The participants were told of the study's objectives, and those who were receptive to participating in the questionnaire survey provided signed informed consent. Participants in the study were given the questionnaire's final version along with the information they needed to complete it anonymously. To preserve the confidentiality of the information acquired, participants were instructed to not disclose their names.

Statistical Analysis: The Statistical Program for the Social Sciences (SPSS version 20.0) was used to code and analyze the data that were gleaned from the study participants' answers (IBM, New York, USA). The findings were presented using descriptive statistics (frequency, percentages, mean, median, chi-square tests, etc.).

Ethical Consideration: The Human Studies, Reference number: MC/KOL/IEC/NON-SPON/1839/04/2023dated :11/04/2023) Institutional Ethics Committee accepted the study methodology, which was carried out over a two-month period from January to February 2024. The subjects received no treatment. Participants were asked for their consent. For human research, approval was obtained from the Medical College of Kolkata's Institutional Ethics Committee and Scientific Advisory Committee. Anonymity was maintained. Participants were demarcated by serial numbers. Identities were kept confidential. All the study participants were ensured confidentiality and anonymity. Data obtained from study participants was used purely for academic purposes and will be kept confidentially in the Department of Community Medicine of Medical College, Kolkata for future reference. The study was self-funded and there were no conflicts of interest.

RESULTS AND DISCUSSIONS

A total of 164 participants were interviewed for the study. The youngest participants was 16 years old and the oldest 48 years. 54.37 % of the participants were aged between 27-48 years and the rest were between 16-26 years. Mean age of the participants came to be 28.89 years(±7.877). 124(75.61%) of the participants were practicing Islam. 88.82% of the participants were married, 46.95% lived in mixed houses, 58.84% were from nuclear families. 16 participants were illiterate, 23 completed primary level of education, 8 participants passed higher secondary and only 3 of them graduates. 29 participants belonged to higher middle class, 83 to middle-middle class and 52 in lower middle class according to Modified B.G. Prasad scale updated in January 2024.Only 13.41% of the participants used addictive substances.

There were 5 villages under the Health and wellness centre and they are distributed as 14 participants from Barpol, 31 from Chowghoria, 25 from Gobra, 26 from Palitpara and 68 from Rohanda village. Out of the 164 participants only 70 (42.68%) have heard of Cervical Cancer. Now among these 70 participants, questions regarding symptoms and risk factors of Cervical cancer were asked.

Among them 62 consider abnormal vaginal bleeding, 52 considers low back pain, 34 consider persistent smelly vaginal discharge, 24 considers pain during sex,25 persistent diarrhea, 25 consider abnormal heavy menstruation, 17 consider vaginal bleeding after menopause, 32 consider persistent pelvic pain, 25 blood in stool and urine and 15 consider unexpected weight loss as symptoms for cervical cancer and a trigger to visit a doctor for consultation. Overall only 29 among the 70 participants i.e 41.42 of the 70 who have heard of cervical cancer have adequate knowledge regarding the symptoms of cervical cancer(17.68% of the total participants).

These 70 participants were asked about the risk factors that can lead to cervical cancer. 17 participants think that HPV infection can lead to cervical cancer, 52 regarded tobacco as a factor, 44 consider weaker immune system, 23 consider long time use of contraceptive pills, 17 consider sexual activity at a younger age, 36 consider having multiple sexual partners, 16 consider having many children and 16 consider sexual partner having other sexual partners as risk factors for developing cervical cancer. 15 participants had adequate knowledge regarding risk factors that comes to 21.42% of the participants who have heard of cervical cancer and 9.14 % of the total participants.

It is found that there is significant statistical association between religion of the participants and having heard

Table 1 : Distribution of the Study Participants According to Socio-Demographic Characteristics(n=164)

Categories		Frequency	Percentage
Age group	16-26 years	75	45.73
	27-48 years	89	54.37
Village of residence	Barpol	14	08.54
	Chowghoria	31	18.90
	Gobra	25	15.24
	Palitpara	26	15.85
	Rohanda	68	41.46
Religion	Hinduism	40	24.39
	Islam	124	75.61
Marital status	Married	145	88.82
	Unmarried	19	11.18
Type of family	Nuclear	96	58.54
	Joint	68	41.46
S.E.Status	I	0	0
	II	29	17.68
	III	83	50.60
	IV	52	31.72
	V	0	0
Level of education	Illiterate	16	09.76
	Primary	23	14.02
	Middle	67	40.85
	Secondary	46	28.05
	Higher-secondary	08	04.88
	Graduate	03	01.83
Addiction	Present	22	13.41
	Absent	142	96.59

Table 2 : Distribution of Study Participants According to their Knowledge Regarding Symptoms of Cervical Cancer (n=70)

Identified as a probable symptom of Cervical cancer	Frequency	Percentage
Abnormal Vaginal bleeding	62	88.57
Low back pain	52	74.28
Persistent smelly vaginal discharge	34	48.58
Pain during sex	24	34.28
Persistent diarrhoea	25	35.71
Heavy menstruation	25	35.71
Vaginal bleeding after menopause	17	24.28
persistent pelvic pain	32	45.71
Blood in stool and urine	25	35.71
Unexpected weight loss	15	21.42
Adequacy of knowledge	29	41.42

Table 3 : Distribution of Study Participants According to their Knowledge Regarding Risk Factors of Cervical Cancer (n=70)

Identified as probable risk factors of Cervical cancer	Frequency	Percentage
HPV infection	17	24.28
Using tobacco	52	74.28
Weaker immune system	44	62.86
Long term use of contraceptive pills	23	32.86
Sexual activity at younger age	17	24.29
Multiple sexual partners	36	51.43
Having many children	16	22.86
Sexual partner who had many other sexual partners	16	22.86
Adequacy Of Knowledge	15	21.42

Table 4 : Relationship Between Socio-Demographic Characteristics with Having Heard the Term Cervical Cancer(n=164)

Categories		Frequency having heard of cervical cancer(%)	Frequency never heard of cervical cancer (%)	Chi-Square value
Age group	16-26 years	29(38.67)	46(71.33)	0.911
	27-48 years	41(41.41)	48(68.59)	P = 0.340
Village of residence	Barpol	7(50.00)	7(50.00)	5.475
	Chowghoria	15(48.39)	16(51.61)	P=0.242
	Gobra	8(32.00)	17(68.00)	
	Palitpara	7(26.92)	19(73.08)	
	Rohanda	33(48.53)	35(51.47)	
Religion	Hinduism	25(62.50)	15(37.50)	8.492
	Islam	45(36.29)	79(73.61)	P=0.004
Marital status	Married	58(40.00)	87(60.00)	4.268
	Unmarried	11(57.90)	8(42.10)	P=0.118
Type of family	Nuclear	45(46.88)	51(53.12)	1.663
	Joint	25(36.76)	43(63.24)	P=0.197
S.E.Status	I	0		20.391
	II	23(79.31)	06(20.69)	P=0.001
	III	26(31.33)	57(68.67)	
	IV	21(40.39)	31(60.61)	
	V	0		
Level of education	Illiterate	01(6.25)	15(93.75)	35.360
	Primary	03(13.04)	20(86.96)	P=0.001
	Middle	36(53.73)	31(46.27)	
	Secondary	18(39.13)	28(60.87)	
	Higher-secondary	08(100.00)	0	
	Graduate	03(100.00)	0	
Addiction	Present	7(31.82)	15(68.18)	1.226
	Absent	63(42.57)	79(57.43)	P=0.268

Table 5 :Relationship Between Socio-Demographic Characteristics with Adequacy of Knowledge of Symptoms of Cervical Cancer (n=70)

Categories		Frequency having adequate knowledge regarding symptoms cervical cancer(%)	Frequency having in- adequate knowledge regarding symptoms cervical cancer(%)	Chi-Square value
Age group	16-26 years	15(51.72)	14(48.28)	2.1629
	27-48 years	14(34.15)	27(63.85)	P = 0.141
Village of residence	Barpol	3(42.86)	4(57.14)	5.475
	Chowghoria	3(20.00)	12(80.00)	P=0.242
	Gobra	3(32.00)	05(68.00)	
	Palitpara	4(57.14)	03(42.86)	
	Rohanda	17(51.52)	16(48.48)	
Religion	Hinduism	5(20.00)	20(80.00)	7.3591
	Islam	24(53.33)	21(46.67)	P=0.006
Marital status	Married	22(37.93)	36(62.07)	2.5076
Unmarried	7(63.64)	4(36.36)	P=0.113298	
Type of family	Nuclear	16(35.55)	29(64.45)	1.791
	Joint	13(52.00)	12(48.00)	P=0.180799
S.E.Status	I	0		1.7165
	II	07(30.44)	16(69.66)	P=0.4239
	III	12(46.15)	14(53.85)	
	IV	10(47.62)	11(52.38)	
	V	0		
Level of education	Illiterate	00	01(100.00)	28.921
	Primary	00	03(100.00)	P=0.001
	Middle	04(11.11)	32(88.89)	
	Secondary	14(77.78)	04(22.22)	
	Higher-secondary	08(100.00)	0	
	Graduate	03(100.00)	0	
Addiction	Present	03(42.86)	04(57.14)	0.0065
	Absent	26(41.27)	37(58.73)	P=0.935538

Table 6 :Relationship Between Socio-Demographic Characteristics with Adequacy of Knowledge of Risk Factors of Cervical Cancer (n=70)

Categories		Frequency having adequate knowledge regarding risk factors of cervical cancer(%)	Frequency having in-adequate knowledge regarding risk factors of cervical cancer(%)	Chi-Square value
Age group	16-26 years	8(27.59)	21(72.41)	1.115
	27-48 years	7(17.07)	34(82.93)	P = 0.2909
Village of residence	Barpol	01(14.29)	06(85.71)	3.8824
	Chowghoria	02(12.50)	14(87.50)	P=0.4221
	Gobra	02(25.00)	06(75.00)	
	Palitpara	01(14.29)	06(85.71)	
	Rohanda	09(36.00)	16(64.00)	
Religion	Hinduism	5(20.00)	20(80.00)	0.1704
	Islam	10(24.39)	31(75.61)	P=0.6797
Marital status	Married	11(18.97)	47(81.03)	3.5536
	Unmarried	4(36.36)	7(63.64)	P=0.0594
Type of family	Nuclear	08(17.78)	37(82.22)	0.9974
	Joint	07(28.00)	18(72.00)	P=0.31973
S.E.Status	I	0		29.682
	II	04(17.39)	19(82.61)	P=0.002
	III	05(19.23)	21(80.77)	
	IV	06(28.57)	15(71.43)	
	V	0	0	
Level of education	Illiterate	00	01(100.00)	34.280
	Primary	00	03(100.00)	P=0.001
	Middle	2(05.56)	34(94.44)	
	Secondary	07(38.89)	11(61.11)	
	Higher-secondary	05(62.50)	03(37.50)	
	Graduate	01(33.34)	02(66.66)	
Addiction	Present	1(14.29)	6(85.71)	.2357
	Absent	14(22.22)	49(77.78)	P=0.627

of cervical cancer (chi-square value 5.475, p=0.004), Socio economic status and having heard of cervical cancer(chi-square value 20.391, p=0.001) and between level of education and having heard of cervical cancer(chi-square value 35.360, p=0.001). Regarding symptoms of cervical cancer, adequacy in knowledge having statistical significant association with Religion (Chi-square value :7.3591, p = 0.006)and level of education (p = 0.006).Adequacy in knowledge regarding risk factors were found to be statistically significant with Socio-economic status (p= 0.002) and level of education (p=0.001). Only 28(17.07%) participants have been screened for cervical cancer. Among them 10 have been screened at Health and Wellness centre(SC), 02 in another Health and Wellness Centre(PHC), 08 in Block Primary Health Centre(Madhyamgram RH) and another 08 in higher centres. And 28participants said that they are willing to get screened. The reasons for not willing to get screened includedisapproval by family, Fear of the procedure and shyness due to the exposure related to the screening tests. Only 31 participants have heard about vaccine preventing Cervical cancer. And 55(73.33%) participants among 75 (i.e. below 26 years of age who are eligible to take the vaccine)are willing to take such vaccine available. But 140(61.43%) participants said they will encourage others to take the vaccine. And 154 participants (85.72%) wished that the vaccine should be made available for free. There is a significant association between age of the participants

Fig.1: Showing Distribution of Study Participants According to Adequacy of Knowledge Regarding Signs of Cervical Cancer

Fig. 2: Showing Distribution of Study Participants According to Adequacy of Knowledge Regarding Risk Factors of Cervical Cancer

and willingness to get screened(Chi-square value -6.660, p=0.01) as well as affinity to encourage for getting vaccines (Chi-square value-9.704, p=0.002). 97.5 % among the Hindus are willing to take the vaccine, whereas 81.45% of Muslim participants are willing to take vaccines(Chi-square value: 6.325, p=0.013).

164 participants were interviewed for the study. With the youngest participants being 16 years old and the oldest 48 years. More participants were in the older age group. Majority of the participants were practicing Islam, were married, were from nuclear families. 8 participants passed higher secondary and only 3 of them were graduates. <Half the participants (70 out of 164) have heard about cervical cancer. Twenty nine of these seventy participants had adequate knowledge regarding cervical cancer and sixty two of them identified Abnormal Vaginal Bleeding to be a probable symptom of the same. Only fifteen participants had adequate knowledge about risk factors leading to cervical cancer and 52 participants claimed using tobacco can lead to cervical cancer. There is significant statistical association between having heard of cervical cancer and religion of the participants, socio-economic status and education level. Adequacy in knowledge Regarding symptoms of cervical cancer have statistical significant association with Religion and level of education whereas adequacy in knowledge regarding risk factors were found to be statistically significant with socio-economic status and level of education. Significantly more Hindus have heard about cervical cancer, but among the ones who know about the disease, significantly lesser number of them have knowledge adequacy regarding signs of cervical cancer than participants practicing other faiths. <A fifth of participants have been screened for cervical cancer. Though thirty one participants have heard regarding a vaccine that can prevent such disease, no one has received the vaccine. Majority of the participants said that they will take the vaccine if made available and will encourage others to take the vaccine. Also majority of the participants think that if there is a vaccine, it should be made available free of cost to the beneficiaries.

A Study on Knowledge and Awareness of Cervical Cancer Among Females of Rural and Urban Areas of Haryana, North India showed that a Majority of the women from rural areas had poor knowledge about cervical cancer (55%) and its screening (75%), HPV infection (87.5%) and HPV vaccine (95%), which corroborates with our study where only 57.32% of the population have not heard about Cervical cancer, 82.93 % of the study participants do not want to be screened and only 18.09% of the total participants know about a vaccine that can prevent Cervical Cancer[11]. Another study on Socio-Demographic and Behavioral Risk Factors for Cervical Cancer and Knowledge, Attitude and Practice in Rural and Urban Areas of North Bengal, India found that Awareness about the cause, signs and symptoms and HPV vaccination was 3.6%, 6.3% and 14.5% respectively and there was a complete absence of association between education and elements of KAP in rural areas, but our study found out that there is a significant relationship between level of education and knowledge regarding Cervical cancer, its signs, symptoms and risk factors[13]. This is a quantitative cross-sectional survey. So, the reasons for not undergoing screening tests or taking vaccines could not be probed thoroughly.Also participants could not be followed up to see if there is a change in their attitude regarding screening procedures as BCC activities are increasing regarding such examinations. Only women of reproductive age group was taken for this study, but while conducting the study it was seen that even older women do have a say about their daughter's and daughter-in-laws'health-seeking behavior, and this was not explored during the study. As vaccines are not readily available in government setups, and are mostly to be procured from a private chemist, the actual picture about the acceptance of the same was beyond the scope of this study.

More studies regarding knowledge and awareness of cervical cancer are needed to be performed, in larger geographical domains. Cervical cancer screening

methods should be known by the CHO or the ANM, they should be trained and they should perform such screening activities at health and wellness centres, with appropriate referral. As ASHA is already involved with women of reproductive age group they should be used to raise awareness about Cervical Cancer at the ground level. Awareness about the disease and importance of receiving the vaccine can also be disseminated by the AWW at local Anganwadi programme. Counselling services are to be provided and trust is to be gained regarding safety and benefits of the screening methods and the vaccine available. Activities to raise such awareness to be conducted in schools and VHND sessions.

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