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Cervical Cancer Awareness in Bihar, India: Lots of Light but no Illumination

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Abstract:
Objective: *To identify levels of cervical cancer risk factor and symptom awareness as well as reasons for not seeking medical help in Bihar (India) female population.*
Design: *Population based survey.*
Setting: *Mahavir Cancer Sansthan , Patna.*
Sample: *Bihar representative sample of females aged 16 years and over (n = 142).*
Materials and methods*: Respondents completed the Cervical Cancer Awareness Questionnaire which included questions on awareness of cervical cancer symptoms, risk factors (both recalled and recognised) and reasons for not seeking medical help. Multiple regression analysis were used to identify predictors of higher symptom and risk factor recognition .*
Main outcome measures*: Awareness of cervical cancer symptoms and risk factors; reasons for not seeking medical help.*
Results: *20% of respondents were unable to recall any risk factors and 65% to recall any symptom . Awareness was higher when women were prompted (79% recognised at least one risk factor and 93% at least one symptom). 91% of the respondents admitted lack of information and knowledge as a reason for not seeking medical help (hindrance in early detection). Independent predictors of risk factor recognition was older age . Symptom recognition was also associated with older age having a close experience of cervical cancer.*
Conclusions: *To create awareness and reduce inequalities in awareness, interventions should target younger women irrespective of their education status and those from rural background groups.*
Keywords: *Cancer Awareness in Bihar, Cervical Cancer , Indian Women ,Risk factors, Symptom Awareness, Early detection hindrance.*

I. Introduction

Cervical Cancer is one of the most common gynecological malignancy worldwide. 5,00,000 new cases are diagnosed every year with a higher rate of incidence among women of lower socioeconomic status especially in developing countries. India has a population of 432.20 million women aged 15 years and older who are at the risk of developing Cervical Cancer. 1,22,844 women are diagnosed every year with cervical cancer and out of them 67,477 die from the disease.[1]

India bears about one fifth of the world's burden of cervical cancer . More than 100,000 new cases are detected in India per year and the disease causes almost 20 percent of all female deaths in India [2]. About 75-80 % of the cases are reported in advanced stage [3]. The menace of cervical cancer is still haunting India in-spite of this being a preventable disease.

The key to reduce cervical cancer morbidity and mortality is early detection and treatment of precancerous cervical lesions. Population-based screening program utilizing exfoliative cervical cytology, the Papanicolaou (Pap) test, has reduced the cervical cancer morbidity and mortality in developed countries [4] , [5]. Screening test for cervical infection of human papillomavirus (HPV), the primary cause of cervix cancer, has proved to be more effective [6]. Recently developed prophylactic vaccines to HPV have the potential to protect new generation of girls.

Despite being effective most of the women in developing and under-developed countries do not have access to Pap smear screening. In India also, both early detection and screening remains a major area of concern to the health workers in the absence of screening facilities coupled with poor literacy and low level of awareness amongst Indian women. This ultimately becomes a hindrance towards formulation of an exhaustive policy to tackle the problem of cervical cancer.

Cervical cancer diagnoses made at an earlier stage [FIGO (International Federation of Gynecology and Obstetrics) stages 1A1 to 1B2] are associated with higher survival rates (80–99%) than diagnoses made at a later stage [stages III–IV have associated five-year survival rates of 20–50%][7]. At present, in England, almost 10%

of cervical cancers are diagnosed at stage III or worse. If this figure can be decreased, cervical cancer mortality can be further reduced.[8]

The success and benefit of a public health program to control and prevent cervical cancer will depend on the level of awareness about different basic aspects of the disease. Various studies [9]; [10]; [11]) have been undertaken to assess women's awareness and knowledge level about cervical cancer. However, currently, less information is available on knowledge base of the Indian women on cancer of the Cervix.

The aim of this study was to explore knowledge and awareness of the women of Bihar about cervical cancer. Additionally, we attempted to identify and analyze a probable relationship between the overall knowledge level and a few sociodemographic parameters. In the present study we aimed to determine cervical cancer risk factor and symptom awareness in Bihar,India female population. We hypothesised that higher education level , having a personal or close experience of cervical cancer and Urban background would predict higher risk factor and symptom awareness. We also expected that older age would be associated with symptom awareness, but that younger age would be associated with risk factor awareness.There is also evidence that knowing close family or friends who have experienced cancer can increase awareness of some symptoms of cancer.

The outcome measurement of this short study may provide inputs towards designing apt Information , Education and Communication (IEC) strategies to inform and educate the women on prevention of cervical cancer and thus augment the national cancer control program. It will give an insight for the areas to be on the priority while implementing the policies (for Cervical Cancer Awareness).

II. Material & Methods

Recruitment

Bihar females aged 16 years and over were recruited using random location sampling from Mahavir Cancer Sansthan & Research Centre,Patna during Awareness camps and regular OPD. Data were collected between October 2014 and January 2015.

Sample Characteristics:

The number of rural participant were less so we grouped respondents from semi urbans and rural backgrounds together, dichotomizing the women into 'Rural or 'Urban'. Semi Urban women were included in the' Rural' category. Education was grouped into 'Low-level' (women educated till school level IX and those with no formal education), 'Mid-level' (women educated to Highers, X,XII) higher education degree (Graduation & above) .Two dichotomous group of Parity i.e <3 and ≥3 was made. Age was measured as a continuous variable.

Table 1: Sample Characteristics

Characteristics	Number	Percentage(%)
Age(years)		
16-24	9	6
25-39	38	27
40-59	82	58
60+	13	9
Background		
Rural	91	64
Urban	51	36
Education		
High	15	11
Middle	28	20
Low	99	70
Parity		
<3	47	33
≥3	95	67

Awareness of Risk Factors:

We measured risk factor awareness with both open and closed questions. The open question (presented before the closed question to reduce bias) measured recall and read: 'What things do you think affect a woman's chance of developing cervical cancer?'. Respondents were given a blank space to freely respond .The closed question (measuring recognition) read: 'The following may or may not increase the chance of getting cervical cancer. Participants were presented with 10 cervical cancer risk factors

Scores from the open and closed questions were each summed to create an overall score for recall and for recognition

Table 2: Awareness of Risk Factors

Risk factors	Number	Percentage (%)
Tobacco	113	80
Diet	11	8
Weight	5	4
Environmental	15	11
Infection	21	15
Genetic	1	0.7
Unhygienicity	4	3
Trauma	4	3
Obesity	1	0.7

Awareness of Signs and Symptoms:

We measured symptom recall using the question: 'There are several warning signs and symptoms of cervical cancer Are you aware of any of them '.Participants were presented with a blank space for responses. Again, we measured recognition with a closed question: 'The following may or may not be warning signs for cervical cancer. We are interested in your opinion. Participants were presented with 3 symptoms of cervical cancer.

Table 3: Awareness of Signs and Symptoms.

Signs & symptoms	Recalled N %	Recognised N %
Vaginal bleeding after menopause	13 9	21 15
Vaginal bleeding during and after sex	2 1	10 7
Persistant vaginal discharge that smells unpleasant	11 8	9 6

Reasons for not seeking Medical Help / hindrance in early detection of Cervical Cancer :

We measured reasons for not seeking medical help by giving list of options before them and asking them to reply using the question – "Name the reason for not seeking medical help even having symptoms you thought might be cervical cancer ". Participants were presented with nine reasons and asked to reply.

Table 4 . Reasons for not seeking medical help.

Reasons for not seeking medical help	n	%
Lack of information /knowledge	129	91
Scared & guilt	12	8
Embarassed,no lady doctors	3	2
Social stigma	8	6
Concern about family ,children	5	4
Neglect	21	15
Diagnostic facility,no oncologist	22	16
Not aware of process/referral services	2	1
Financial Concerns	53	37

III. Results & Data Analysis

The sample consisted of 142 women. Table 1 details the sample characteristics.The data analysis was done using SPSS version 16.0. Participants were aged 16–72 (M = 47 years)years. Most were from rural backgrounds (64%) and either had no formal education or were educated to a low level (70%). The majority of participants were those of family size of more than 5 individuals.

Awareness of risk factors: 80% of the respondents were aware of tobacco as a risk factor.15% showed environmental factors like pollution ,heavy metals as risk factor. 21% new about infection as a risk factor and very few of them identified unhygienicity ,genetic,diet or obesity as risk factors for cervical cancer.

Awareness of signs & symptom: More than two-thirds of the women were unable to recall any of the symptoms (82%). Recognition was better than recall, with 28% correctly recognising at least one symptom of cervical cancer. Vaginal bleeding after menopause (15%) ,vaginal bleeding during and after sex (7%) , Persistant vaginal discharge that smells unpleasant (6%) were identified as symptoms for Cervical Cancer.

Reasons for not seeking medical help:

91% of the respondents expressed lack of information/knowledge about the disease as reason for not seeking medical advice.37% showed financial concern as a reason for not seeking medical help.Lack of oncologists ,referrals and neglect were some important reasons to be heighlighted..

Table 5. Results of Multiple Regression Analysis: Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.283	.124		-2.285	.024
	EDU	.084	.048	.152	1.770	.079
	Age	.006	.003	.194	2.056	.042
	Background	-.081	.073	-.089	-1.111	.268
	Parity	.014	.018	.078	.796	.427
a. Dependent Variable: Risk factor Awareness						

The variability explained by the predictor variables was not very high, the variable 'age' was found to be significant predictor (p-value <0.05) .Thus, results clearly indicated that there was no association with education status and awareness(p –value0.079).

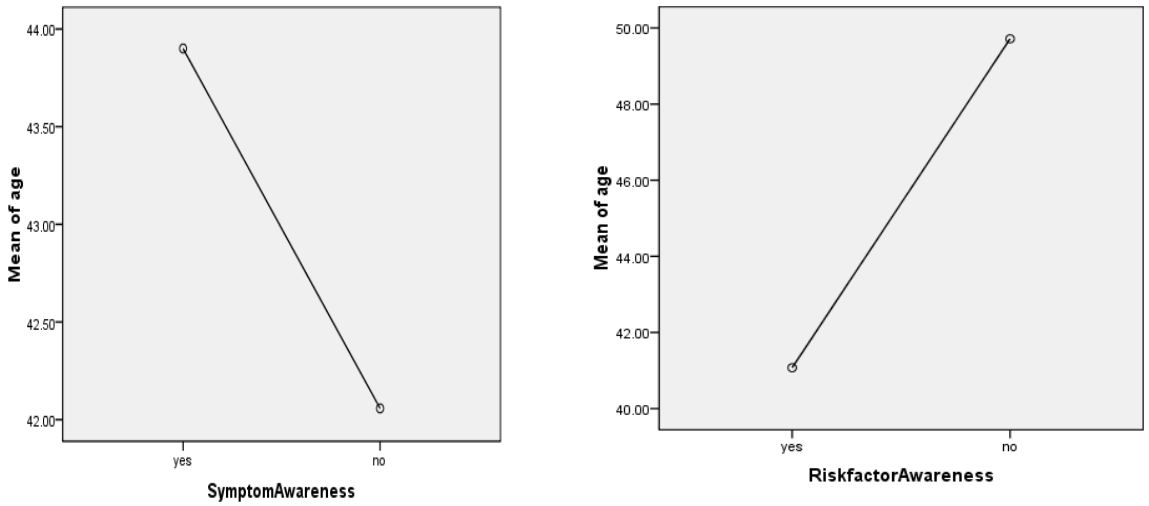

Fig 1.Relation of Age with Symptom awareness as well as Risk Factor awareness in Cervical Cancer.

IV. Discussion

This study throws light on the existing awareness level of Cervical Cancer in the state of Bihar,India. Most respondents were unable to recall any symptoms or risk factors for cervical cancer. Awareness was much higher when prompted ; although even then women were only able to recognise around less than half of the symptoms and risk factors presented. Although the most recognised risk factors for cervical cancer was' tobacco' (>80%) and infection (15%) . It was disappointing, however, that awareness of HPV in particular was more or less nil inspite of the fact that more than 85% of the cases are associated with persistant HPV infection. Despite the introduction of the HPV vaccine in 2008 and the associated publicity awareness of HPV as a risk factor was nil.

The most recalled symptoms in our sample were 'vaginal bleeding after menopause' (29%) and 'persistent/abnormal/ unusual vaginal discharge' (15%). However, less reassuring was the fact that most women were unable to recall any symptoms and even for these common symptoms, recall was still quite low.

In contrast to our hypothesis, we found that younger, not older women had lower awareness of risk factors for cervical cancer. This is concerning, as incidence is highest in women aged 30–45 and there is evidence that younger women may be more vulnerable to some risk factors such as infection with HPV and Chlamydia.[12,13]. One explanation of our findings may be our use of a composite risk factor score, whereas previous research has investigated awareness of individual risk factors for cervical cancer, or cancer risk factors in general.[14,15,16] A composite score may lead to higher awareness in older women as younger women may be more aware of specific risk factors (such as HPV) but less aware of risk factors overall.

It was surprising that there was no association between level of education and awareness for cervical cancer. This reflects the need of awareness programs in schools and colleges as the younger generation is more prone to have infections .

About 91% stated lack of information/knowledge about the cancer for not seeking medical help even having symptom which they thought might be of cervical cancer .Awareness programs need to be more vibrant and should reach to the remote areas as well and not restricted to the urban areas.

In a nutshell ,awareness level in the state of Bihar is almost negligible regardless of level of education .Government, NGOs need to gear up to take the issue from the front. Even awareness programs in schools and colleges should be planned for giving basic knowledge about Cancer in general and Cervical Cancer in specific .Awareness too should become the focus of research(research on new ways of creating awareness which are innovative ,appealing and has more impact) rather than focusing only on new treatment modalities as awareness is the only tool to prevent and to detect in an early stage where the chances of cure is maximum.

V. Limitations

Sample size was not sufficient,recall bias may be a problem and it was a hospital based study so not a true representative of the population and thus the findings cannot be generalized.

An important limitation was that although we identified some variables that significantly predicted both risk factor and symptom awareness, the total amount of variance explained by each model was very small, suggesting that there are other, stronger influences on awareness that we have not included in our analyses. Further work should be carried out to identify these variables.A final limitation of this study was that, as the sample was population representative of Bihar but most of them were knowing someone suffering from the disease.Most of the females were from rural background so next study should be planned with equal sampling from urban background too.Samples should have been taken from school and colleges too.

VI. Conclusion

Awareness of both risk factors and symptoms of cervical cancer was low in Bihar . Future research should investigate awareness of the association between sexual behaviour, HPV and cervical cancer as our findings suggest that this relationship may not be fully understood. Some population sub-groups may benefit from education on risk factors and symptoms including younger women irrespective of their education status .More research needs to be done on developing new ways of creating awareness and bringing it on ground realities. It is hoped that by improving awareness in these groups, prompt help-seeking will be encouraged, reducing the chances of a poor outcome and helping in early diagnosis and hopefully a cancer free state.

Ethical approval

The study was exempted from ethical approval as no identifying details were collected from the participants.

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