Original article

Readiness for cancer cervix control in a North Indian population: Identifying the gaps

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Abstract

Background: Cancer of the cervix is the most common cause of cancer-related deaths amongst women in India. Apart from the availability of healthcare services, awareness and attitude, the cornerstone of public health measures such as screening and vaccination are useful in the control of cervical cancer. There is a lack of studies regarding cervical cancer in the selected region. ***Objectives:*** To assess the knowledge of cervical cancer and its associated factors amongst rural women in a densely populated state of Northern India. ***Methodology:*** This cross-sectional study was undertaken for a period of one year, i.e., from April 2018 to March 2019, in five randomly selected villages of the Bakshi Ka Talab Block of District Lucknow, Uttar Pradesh. Systematic random sampling was performed to include females aged 15 years and above by a house to house survey. Trained social workers interviewed the consenting participants using a self-structured, pretested and validated questionnaire. The suitable statistical test was used to analyze the data. ***Results:*** The majority of the participants (n=300) were aged between 20-24 years, and the mean age was 28.5 years. Sixty-four per cent of the females were married, and round 43.7% belonged to lower socioeconomic class. Nearly one third reported to have not heard of cervical cancer previously. The knowledge of the various aspects of cancer cervix varied from 3.2% to 55.3%. The most frequently recognized risk factors were early pregnancy (15.7%), giving birth to ≥ 3 children (13.2%) and early sexual initiation (11.7%). Majority of respondents (56.4 per cent) reported weakness to be the most common effect of leucorrhoea. Nearly half of females falsely perceived the actual cause of the leucorrhoea as excess heat in the body. None of the participants had either undergone screening for cervical cancer or had received HPV vaccination despite the availability of healthcare facilities within 30 kilometres. The educational and socioeconomic status were found to be significant predictors of knowledge of cervical cancer on multivariate logistic regression analysis ***Conclusion*****:** A general lack of awareness has been noted regarding cervical cancer in the study population. None of the participants had undergone screening for cancer cervix or had been administered HPV vaccination, which points to a lack of healthcare utilisation. There is a need to sensitize the target population to the menace of cervical cancer and the usefulness of screening and HPV uptake.

Keywords: Cervical cancer; leucorrhoea; health education; screening; rural health; vaccine

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Introduction:

Cervical cancer is commonly encountered in women worldwide and represents 6.6% of all female cancers. Majority of cervical cancer deaths are reported from low- & middle-income countries having limited cervical cancer screening & vaccination.[1-

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[6]An estimated 0.12 million new cases and 68,000 deaths per year are related to cervical cancer in India.[7]Cervical cancer deaths could be prevented by effective interventions like immunizing adolescent girls against human papillomavirus (HPV) & cervical screening & management of pre-cancerous lesions. Leucorrhoea accounts for nearly one-fourth of the gynecologic visits, which can be used for screening cancer cervix.[8,9] Persistent HPV infection of specific high-risk types is the significant cause of development of cervical cancers and their precancerous lesions.[10] Cofactors such as sexual habits, reproductive history, sexually transmitted diseases, smoking, nutritional deficiencies and genetic susceptibility, act in conjunction with HPV contribute to the disease progression.[11]The cancer cervix is much more prevalent among low socioeconomic status as well as rural women inIndia.[12,13]The national cancer registry program reported an incidence of 18,692 cases of cervical cancer in Uttar Pradesh in 2012.[14]Use of low-cost HPV screening tests and HPV vaccination could both act as reducing the cervical cancer burden.[15] Although there have been advancements in methods of early detection, most of the cervical cancer cases are detected at a late stage.[16] There has been increasing focus on public health measures to control cervical cancer. However, any public health measure is limited by the strength of the response of the community in public health exercise. Cervical cancer prevention requires more robust community preparedness in order to overcome the barriers to the adoption of preventive measures.[17] There is a paucity of research detailing variables of community preparedness regarding cervical cancer, especially in this region of North India with good healthcare infrastructure and availability of tertiary care centres. With this background, the current study aimed to determine the knowledge of cervical cancer and the prevalence of leucorrhoea among women residing in rural Lucknow.

Material &Methods

This cross-sectional study was carried out from April 2018 to March 2019. The Bakshi ka Talab block in District Lucknow being the field practice area of the department of Community Medicine, Integral Institute of Medical Sciences and Research, Lucknow, Uttar Pradesh was purposively selected. This block has 161 villages, and the population is 239938. Out of these, five villages namely Sansarpur, Pandri, Bada Khempur, GangoliandLikhna were randomly selected and females aged 15 years and above habitant of the selected areas were approached on the house to house basis using sampling interval and probability Proportional to Size (PPS) sampling. Our study sample had a representative mix of females from different social and demographic groups.

The sample size was calculated using the formula - $SS= 4pq/l^2$, using 74.6% prior prevalence rate of Knowledge about cervical cancer reported in a study by Narayana et al.,[18] with 5% allowable error which came out to be nearly 291 and the non-response rate was taken as 3%. Hence, the sample size came out to be 300. All women who voluntarily agreed to participate in the study were included, and the desired sample size was reached. The females already diagnosed with any severe illness, and those who did not give consent were excluded from the study. Prior approval from the institutional ethical committee was obtained.

The women were interviewed by the investigators by a face to face interview method using self-structured, pretested and validated questionnaire as a study tool. The sections in the questionnaire were about: (i) Socio-demographic characteristics (ii) Knowledge about risk factors, symptoms, preventive measures of cervical cancer (iii) History of pathological leucorrhoea. Modified BG Prasad socioeconomic scale[19] was used to categorize the participant's economic status. The pathological leucorrhoea was clinically diagnosed based on the colour, consistency and odour of discharge and accompanying signs.

Data entry was done in Microsoft Excel, and data analysis was carried out using Epi-info 6 software. Proportions, the test of significance and multiple logistic regression analysis were applied wherever found suitable. A p-value of < 0.05 was considered significant.

Ethical clearance: The current study has been undertaken after obtaining suitable informed consent from participants. Confidentiality of the gathered information was maintained.

Results

Table 1: Socio-demographic profile of the subjects. (N=300)

Socio-demographic variables	Number	(%)
Age in years		
15-19	38	12.6
20-24	143	47.6
25-29	74	24.6

Socio-demographic variables	Number	(%)
≥30	45	15.2
Religion		
Hindu	184	61.3
Muslim	116	38.7
Educational Status		
Illiterate	156	52
Just Literate*	76	25.3
Primary	43	14.3
High School	20	6.7
Intermediate or above	5	1.7
Marital status		
Married	192	64
Unmarried	108	36
Family Type		
Joint	283	94.3
Nuclear	17	5.7
Socioeconomic class**		
Upper class	5	1.6
Upper middle class	13	4.3
Middle class	24	8.0
Lower middle class	127	42.4
Lower class	131	43.7

(aged seven years& above who can read & write with understanding in any one language;**Socio-economic class according to modified BG Prasad socioeconomic scale)*

The majority (47.6%) of the participants belonged to the age group of 20-24 years. Respondents' mean age was 28.5 years. Nearly 2/3rd of the respondents were married. About 43.7% of the females belonged to the lower socioeconomic class. (Table 1)

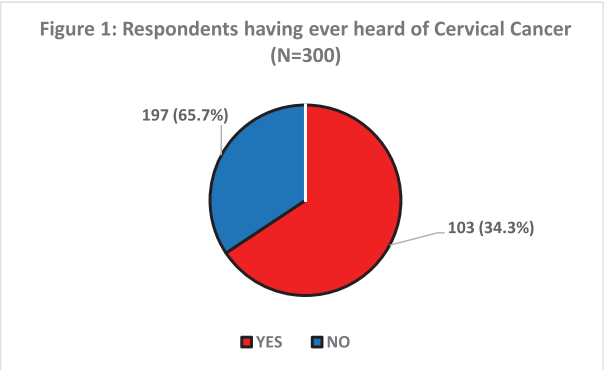

Figure-1 reveals that nearly 2/3rdof the respondents had ever heard of cervical cancer. None had undergone screening for cervical cancer.

Table 2: Knowledge regarding various aspects of cervical cancer (n=197)

Knowledge	Number	Percentage
1. Cervical cancer can lead to terminal illness		
a) Yes	109	55.3
b) No	65	33.0
c) Don't know	23	11.7
2. Females aged 35-44 years are at high risk of developing cervical cancer		
a) Yes	126	63.9
b) No	71	36.1
3. Most common signs & symptoms for cervical cancer (YES responses)		
a) Painful micturition **b)** White discharge per vagina (Leucorrhoea) **c)** Pelvic pain **d)** Post-coital bleeding/spotting	53 79 47 18	26.9 40.1 23.8 09.1
4. Risk factors for cervical cancer		
a) Early pregnancy **b)** Early sexual initiation **c)** Multiple sexual partners **d)** Sexually transmitted diseases **e)** HPV Infection **f)** Smoking **g)** Giving birth to ≥ 3 children. **h)** Contraception **i)** Miscarriages and abortion **j)** HIV infection **k)** Can not say	31 23 09 07 05 05 26 11 05 04 71	15.7 11.7 4.6 3.6 2.5 2.5 13.2 5.6 2.5 2.0 36.1

The knowledge of the various aspects of cancer cervix varied from 3.2% to 55.3%. The most frequently recognized risk factors were early pregnancy (15.7%), giving birth to ≥ 3 children(13.2%) and early sexual initiation (11.7%). (Table - 2)

Table 3: Perceptions regarding leucorrhoea (n=197)

Perceptions	Number	Percentage
Perceptions about effects of Leucorrhoea (YES responses)		
(a) Weakness (Lethargy)	111	56.4
(B) Urinary problem	53	26.9
(c) Sexual problem	8	04.1
(d) Infertility	5	02.5
(e) Anxiety and/ or stress	20	10.1
Perceived causes of Leucorrhoea (YES responses)		

Perceptions	Number	Percentage
(a) Excess heat in the body	97	49.2
(b) Hot foods	25	12.6
(c) Mental tension	08	04.1
(d) Weakness (Lethargy)	67	34.1

Majority of respondents (56.4 per cent) reported weakness to be the most common effect of leucorrhoea. Nearly half of females falsely perceived the actual cause of the leucorrhoea as excess heat in the body. (Table - 3)

Table 4: Predictors of knowledge of cervical cancer in the total study sample using Multivariate Logistic Regression Analysis . (N = 300)

Socio-demographic variables	Category	Knowledge about cervical cancer			Log odds	Odds ratio	95% Confidence interval		p- value
		Yes (197)	No (103)	Total (300)			Lower limit	Upper limit	
Age	< 30 yrs	167	88	255	-	1	-	-	>0.05
	≥ 30 yrs	30	15	45	0.05	1.05	0.54	2.06	
Religion	Hindu	115	69	184	-	1	-	-	>0.05
	Muslim	82	34	116	0.37	1.45	0.87	2.38	
Educational Status	Illiterate	102	54	156	-	1	-	-	**<0.05**
	Literate	95	49	144	0.02	1.02	0.63	1.65	
Marital status	Married	128	64	192	-	1	-	-	>0.05
	Unmarried	69	39	108	-0.12	0.88	0.54	1.45	
Family Type	Joint	183	100	283	-	1	-	-	>0.05
	Nuclear	14	3	17	0.93	2.55	0.71	9.08	
Socioeconomic class	Better off	140	29	169		1			**<0.05**
	Lower class	57	74	131	-1.34	0.26	0.14	0.45	

Literate women and those socioeconomically better off had a sound knowledge about cervical cancer as compared to that illiterate and belonging to lower class respectively. The educational and socioeconomic status were found to be significant predictors of knowledge of cervical cancer on multivariate logistic regression analysis. (Table 4)

Discussion:

Cervical cancer stood first among the leading cancers of females in India however ranks fourth for both incidence and mortality globally .[20,21] Cervical cancer screening is one of the simplest and useful methods for identification and prevention. This study found that overall knowledge about various aspects of cervical cancer was between 3.2 to 55.3 per cent (Table 2). Our findings are comparable to the study of Lokesh et al., [22] where a majority of the women from rural areas of Haryana a North Indian state had poor knowledge about symptoms and risk factors cervical cancer (55%). Our findings are also almost similar to those reported by a study conducted in Southern India,[23] and International Agencies for Research on Cancer [24]. This indicates that women with a lack of knowledge about cervical cancer may not be in a position to seek medical attention for its screening, early diagnosis and prompt management.

The common symptoms related to cervical cancer reported in this study were white discharge per vagina (40.1%) followed by painful micturition (27%), pelvic pain (23.8%) and postcoital bleeding/spotting (9.1%) (Table 2), however, another community study from developing country Uganda reported a higher percentage of symptoms related to cervical cancer including inter-menstrual bleeding (85%), post-menopausal bleeding (84%), and offensive vaginal discharge (83%). [25] More than half of females in this study reported weakness to be the most common effect of leucorrhoea and nearly half of females falsely perceived the actual cause of the leucorrhoea as excess heat in the body. (Table - 3) Our findings are consistent with a study on the perceived effects of leukorrhea among currently married women aged 15-49 years in Northern India by Kaur et al. [26]

Our study findings are in agreement with prior studies pinpointing the significance of demographic and socioeconomic factors in planning to control cervical cancer.[27,28]

Among the participants in our study, none had undergone screening for cervical cancer even

though several health facilities are located within 30 kilometres of the area where this study was conducted. This finding is similar to those of another study conducted in rural Maharashtra where just eight out of a sample size of 131746 women had undergone previous cervical cancer screening ever.[29] Visual Inspection Using Acetic Acid (VIA) is recently recommended by WHO as a new cervical cancer screening test in low-resource settings. A recent study from Dhaka reported VIA to be more sensitive than Pap smear and also had comparable specificity and accuracy to Pap smear. [30]

Literate women and those socioeconomically better off had a sound knowledge about cervical cancer as compared to the illiterate ones and those belonging to the lower class, respectively, in our study. (Table 4) Awareness programs to increase knowledge should be implemented and strengthened in rural females. Positively changing the behaviours and attitudes of individuals helps to reduce cervical cancer risk and is highly fruitful in terms of improving culturally specific educational programs.[31,32]

Illiteracy and poverty are the identified significant readiness gaps in cervical cancer control in the present study. WHO has recently called for accelerated action for the global elimination of cervical cancer, and a planned strategy for the scaling up of HPV vaccination, cervical screening and precancer or cancer treatment.[33] Our study highlights the fact that we have to go far and to be steady in our efforts to achieve the measurable WHO global target to eliminate cervical cancer. HPV vaccination is very cost-effective when there is no cervical screening program or if the programme coverage is inferior in a country [34]

Cervical cancer can be primarily prevented through better education, knowledge and joint responsibility of individuals and communities.[35]

CONCLUSION: Low awareness about cervical cancer was found in the study population with nearly one-third of the females not having heard of carcinoma cervix. The findings indicate a need for creating widespread awareness and sensitize the target population to the menace of cervical cancer and the usefulness of screening and HPV uptake.

Conflict of interest:

All the authors declare that there is no conflict of interest.

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Author's contribution:

Study concept &design: SEM

Data gathering: IA

Data analysis: AA

Writing and submitting the manuscript: SEM, KM

Editing and approval of final draft: MTA, HMA

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