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Original Research Article

A study on unhealthy cervix and its risk factors among currently married women of reproductive age group attending an urban health centre of Kolkata

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ABSTRACT

Background: Cancer of cervix is the third most common cancer in women in India accounting for 21.7% of cancer deaths among women. Unhealthy cervix, characterized by presence of any abnormal growth, ulcer, or vasculature, is a clinically detectable early stage in the life history of cervical cancer. Very few studies have been conducted to determine risk factors of unhealthy cervix.
Methods: A clinic-based cross-sectional study was conducted among currently married women of reproductive age group attending Urban Health Unit and Training Centre, Chetla, Kolkata. A total of 189 women attending the clinic was selected using systematic random sampling method was who were interviewed and examined using pre-designed pre-tested schedule. Analysis was done using (SPSS version 16).
Results: Among 189 women, 45.5% were diagnosed with unhealthy cervix. Hierarchical logistic regression showed that educational status, PCI, frequency of cleaning external genitalia and extramarital relationship of the spouse were significantly associated with unhealthy cervical condition.
Conclusions: Most of the risk factors of unhealthy cervix are behavioral and modifiable. Health education and behaviour change communication of women of reproductive age group would help in reducing their morbidity as well as mortality from cervix related conditions that includes cervical cancer.

Keywords: Cervical cancer, Unhealthy cervix, Risk factors

INTRODUCTION

Cancer of cervix is the third most common cancer in women and is one of the leading cause of cancer death among women globally.[1] Worldwide, 528,000 new cases and 266,000 deaths from cervical cancer were recorded in 2012.[2] Developing nations contribute to 86% of all cervical cancer cases and 88% of all cervical cancer deaths.[1,3,4] In India, 122,844 women are diagnosed with cervical cancer annually and 67,477 die from the disease.[5] It is responsible for 21.7% of cancer deaths among women.[6]

Unlike other cancers, cervical cancer is preventable, detectable and even treatable if detected at early stages.[7] It can be detected and treated with evidence-based, inexpensive solutions that make it suitable for low-resource contexts. Facilities for early detection of cervical cancer through opportunistic screening is being provided at the Regional Cancer Care Centers or medical colleges

under National Programe for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke.[8]

Unhealthy cervix is a clinical diagnosis by naked eye evaluation. If abnormal growth, ulcer, or vasculature is present, the cervix is clinically diagnosed as unhealthy which may be considered as a primitive stage in the progression of many cervical lesions, including cancer. Health personnel, in different health care settings, frequently come across women with evidence of "unhealthy cervix" while examining cervix.[9,10]

Risk factors of cancer cervix are largely known, but risk factors of unhealthy cervix are not yet clear and needs to be studied.[11-15] As cervical cancer if detected at early stage is treatable, screening for early detection may play a pivotal role in reducing morbidity and mortality due to cancer cervix but the screening facilities are not yet being utilized by general population.[16] In light of the current status of poor utilization of screening facilities by the Indian women and preponderance of cervical cancer victims diagnosed at late stage of the disease, this study was conducted among the currently married women of reproductive age group attending the family planning clinic at Urban Health Unit & Training Centre, Chetla, Kolkata with the objective to assess the proportion of women suffering from unhealthy cervix and to highlight socio-demographic, behavioral, lifestyle and the reproductive factors affecting cervical health.[17]

METHODS

It was a clinic-based observational study with cross-sectional design conducted over a period of one year (March 2017 to February 2018) among currently married women of reproductive age group (15-49 years) attending Family Planning Clinic of Urban Health Unit & Training Centre, All India Institute of Hygiene & Public Health, Kolkata. The clinic caters to the population living in nearby 18 slums. Services provided at the clinic are family planning advice, supply of condoms, oral contraceptive pills, insertion of intra uterine contraceptive devices (IUCDs), screening for cervical cancer through visual inspection of acetic acid (VIA), treatment of reproductive tract infections (RTI), treatment of any gynecological and obstetric conditions and referral services.

Sample size was estimated based to the patient turn-over and times required to interview and examine one patient. The Annual report of previous 3 years of the Centre showed that on an average 800 clients attend the clinic annually.[18-20] The clinic runs weekly for 3 hours, thus, on an average expected number of attendees daily is 15-18. A pilot study was conducted to get an estimate of the time required that showed it takes 35-40 minutes per patient. Thus, it was decided to include every 3rd patient after assessing for the inclusion and exclusion criteria. In this way, a total of 189 study participants were interviewed and examined in 12 months.

Exclusion criteria: Women who were pregnant or were in puerperal period, women who were menstruating at the time of visit, diagnosed cases of carcinoma cervix, post-hysterectomy cases, critically ill or intellectually disabled patients and women who did not give informed consent either for interview or examination or both were excluded.

Study participants were interviewed for back-ground characteristics and history of symptoms related to lower reproductive tract pathologies using pre-designed and pre-tested schedule. Clinical findings of per-speculum examination done by specialist Gynaecologist were also recorded in the schedule. of the clinic were recorded.

Ethical Issues

The protocol was approved by the Institutional Ethics Committee. Participants were explained that the purpose of the study was academic and data provided by the participants would be kept confidential and anonymous. Informed written consent was taken from them in their mother tongue (Bangla or Hindi). Women were examined and interviewed maintaining privacy and in the presence of a female attendant. Women diagnosed with unhealthy cervix were treated by the specialist of the clinic.

Operational definition

- *Unhealthy cervix* - If on per speculum examination, any bleeding or white discharge was seen coming out or any polyp or tumor or inflamed area
- *Satisfactory toilet facility* - Sanitary latrine available with adequate water supply (as perceived by the woman) inside the latrine.
- *Satisfactory bathing facility* - Bathroom available for bathing purpose with adequate water supply (as perceived by the woman) inside the bathroom and where privacy was considered to be maintained.
- *Smoke nuisance* - Smoke nuisance at the cooking place was considered to be absent if separate kitchen was available, cooking fuel used was only LPG and cross ventilation present.
- *Years of menstruation* - It was the time (in years), the women had been exposed to the sex hormones during the menstrual cycle. It was computed since age at menarche till the current age or the age of menopause, whichever is earlier.

Statistical analysis

Data were entered and analyzed using SPSS (version 16). Descriptive statistics was done. Logistic regression was done to find association of unhealthy cervix with various independent variables. Variables with significant association with unhealthy cervix were divided in three domains. [Domain 1: socio-demographic and environmental, domain 2: behavioral and domain 3: reproductive parameters.] Hierarchical logistic regression

was employed to assess domain-wise contribution in the change of the outcome variable.

RESULTS

Among 189 women included in the study, 45.5% were diagnosed with unhealthy cervix. Most common finding was discharge that was present in more than one-fourth of the women. Findings of inspection of cervix by per speculum examination among the study participants is shown in Table 1.

Study revealed that about one third (65.6%) of women had suffered foul smelling vaginal discharge any time during last one year. Similarly, 45.7% and 22.8% complained of genital itching and dysmenorrhea, respectively. Only 34.6% of the attendees of the clinic didn't complain about any symptom relating to lower genital tract pathologies. Surprisingly, 49% of these women had unhealthy cervix.

Table 1: Cervical condition by per speculum examination (n=189).

Findings	Number (%)
Discharge	54 (28.6)
Erosion	26 (13.8)
Bleeding	16 (8.5)
Inflammation	14 (7.4)
Polyp	5 (2.6)
Ulcer	1 (0.05)
Bleeds on touch	1 (0.05)
Tear, endometrial tissue visible	1 (0.05)
Cyst	1 (0.05)

*Multiple responses

Table 2: Bivariate logistic regression: association of unhealthy cervix with various independent variables. (n=189).

Variable	No (%)	Unhealthy cervix No (%)	OR (95% CI)	P value[#]
Age (↑)	-	-	1.014 (0.98, 1.05)	0.435
Religion				
Muslim	174 (92.1)	83 (47.7)	3.648 (1.00, 13.38)	0.051
Hindu	15 (7.9)	3 (20.0)	1	
Education				
Below middle school	98 (51.9)	66 (67.3)	7.322(3.82, 14.05)	<0.001
Middle school & above	91 (48.1)	20 (21.9)	1	
Occupation				
Home-maker	153 (81)	73 (47.7)	1.614 (0.73, 3.42)	0.211
Works for earning	36 (19)	13 (36.1)	1	
PCI				
Cat I (≤2500)	115 (60.8)	68 (59.1)	4.501 (2.354, 0.607)	<0.001
Cat II (>2500)	74 (39.2)	18 (24.3)	1	
Smoke nuisance				
Present	157 (83.1)	80 (51)	4.502 (1.76,11.54)	0.002
Absent	32 (16.9)	6 (18.8)	1	
Toilet				
Satisfactory	50 (26.5)	17 (34.0)	1	0.051
Not satisfactory	139 (73.5)	69 (49.6)	1.913 (0.999, 3.75)	
Bathing area				
Satisfactory	38 (20.1)	9 (23.7)	1	0.004
Not satisfactory	151 (79.9)	77 (51.0)	3.353 (1.49, 7.56)	
Overcrowding				
Yes	64 (33.9)	41 (64.1)	3.169 (1.69, 5.94)	<0.001
No	125(66.1)	45 (36.0)	1	
Washing genitalia				
Sometimes	86(43.9)	51 (59.3)	2.712 (1.50, 4.89)	0.001
Always	103 (56.1)	35 (34)	1	
Smokeless tobacco				
Yes	124 (65.6)	32 (49.2)	1.257 (0.69, 0.46)	0.456
No	65 (34.4)	54 (43.5)	1	
Smoking				
Yes	9 (4.8)	3 (33.3)	0.584 (0.14, 2.41)	0.457
No	180 (95.2)	83 (46.1)	1	

Continued.

Variable	No (%)	Unhealthy cervix No (%)	OR (95% CI)	P value#
Passive smoking				
Yes	113 (59.8)	59 (52.2)	1.983 (1.09, 3.60)	0.025
No	76 (40.2)	27 (35.5)	1	
Extramarital relation of spouse				
Yes	15 (7.9)	13 (86.7)	8.993 (1.97, 41.07)	0.005
No	174 (92.1)	73 (42.0)	1	
Age at menarche (↑)	-	-	0.893 (0.737, 1.081)	0.246
Duration of marriage (↑)	-	-	1.042 (1.01, 1.08)	0.022
Parity (↑)	-		1.354 (1.07, 1.71)	0.012
H/O Abortion				
Yes	106 (56.1)	53 (50)	1.515 (0.85,2.71)	0.161
No	83 (43.9)	33 (39.8)	1	
Number of abortions (↑)	-	-	1.127 (0.82, 1.54)	0.458
Family history of cancer				
Positive	19 (10.1)	11 (57.9)	1.742 (0.67, 4.55)	0.257
Negative	170 (89.9)	75 (44.1)	1	
Clinical history				
Asymptomatic	49 (25.9)	24 (49)	1.208 (0.63, 2.32)	0.570
Symptomatic	140 (74.1)	62 (44.3)	1	

#p value less than 0.05 was considered significant.

Table 3: Hierarchical logistic regression: association of unhealthy cervix with socio-demographic, behavioral and reproductive characteristics (n=189).

Variable	AOR (95% CI)		
	Model 1	Model 2	Model 3
PCI			
Cat I (≤2500)	3.574 (1.784, 7.322)	3.625 (1.543, 8.652)	3.364 (2.753, 8.952)
Cat II (>2500)	1	1	1
Education			
Below middle school	6.276 (2.970, 13.263)	6.691 (2.900, 15.439)	5.981(2.509, 14.247)
Middle or above	1	1	1
Overcrowding			
Yes	2.199 (1.021, 4.739)	2.051 (0.887, 4.742)	1.776 (0.75, 4.205)
No	1	1	1
Bathing facility			
Not Satisfactory	3.510 (0.680, 18.112)	5.080 (0.867, 29.775)	5.834 (0.914, 37.228)
Satisfactory	1	1	1
Smoke nuisance			
Present	4.004(1.301, 12.316)	3.330 (1.044, 10.618)	3.343 (0.902, 12.397)
Absent	1	1	1
Washing genitalia			
Sometimes		3.173 (1.413, 7.126)	2.974 (1.305, 6.778)
Always		1	1
Passive smoking			
Yes		2.394 (1.033, 5.546)	1.947 (0.823, 4.606)
No		1	1
Extramarital relation of spouse			
Yes		11.84 (2.073, 67.638)	11.08 (1.874, 65.564)
No		1	1
Duration of marriage (↑)			1.003 (0.835, 1.264)
Parity (↑)			1.021 (0.528, 1.336)

Socio-demographic factors

Mean age of the study participants was 32.84 years with a standard deviation of 8.2 years. Maximum percentage (41.8%) of the study participants belonged to the age group of 25-31 years. Majority of the study participants followed Hinduism. 17.5% of the women were illiterate. Majority (63%) could not continue their education beyond Class VIII. 44.4% belonged to middle class followed by lower-middle (26.5%) and upper-middle (20.1%).

Environmental characteristics

Less than one-third of the women reported to have kitchen. 10.4% of them still didn't have access to provision of LPG. Cross-ventilation was reported to be present in the cooking area of only around one-fifth of the women. Smoke nuisance was present in 83.1% of the households.

Behavioral characteristics and family history

Less than half of all used commercially available sanitary napkins. 43.9% reported the habit of washing external genitalia after coitus/ micturition with water. More than half of them were exposed to passive smoking. Five women were exposed to all the 3 forms while one fourth were not exposed to any form. Out of all, 137 women were found to be exposed to tobacco in any form. 10% of the study participants gave history of cancer among the family members.

Reproductive parameters

Mean duration of marriage was 14.2 years with a SD of 8.4 years. Age at marriage ranged from 12-28 years. With increasing duration, proportion of unhealthy cervix was found to increase. Among those married for more than 20 years, more than half had unhealthy cervix. High parity (3 or more children) was found in 52.9% of the women. Teenage pregnancy was found among one third of the study participants. 56.1% had a history of abortion either once or multiple times.

Association of unhealthy cervix with various factors

On bivariate analysis, low per capita income, poor educational status, presence of smoke nuisance in the cooking area, overcrowding in the household, unsatisfactory bathing facility, poor frequency of washing external genitalia, passive smoking, extramarital relation of the spouse, longer duration of marriage and higher parity were found to be significantly associated with unhealthy cervix. (Table 2)

All the significant factors were grouped in three domains. Domain 1 included socio-demographic and environmental characteristics, domain 2 comprised of behavioral characteristics and domain 3 had reproductive parameters in it. Hierarchical logistic regression was performed to ascertain their association with unhealthy cervix. Goodness of model fit was checked by Hosmer Lemeshow test. (Table 3)

Model 1: PCI, educational status, smoke nuisance in the cooking area and overcrowding in the household together explain 44.8% of the change in the outcome (Negelkerke's R Square = 0.448)

Model 2: PCI, educational status, smoke nuisance in the cooking area, passive smoking, frequency of cleaning external genitalia and extramarital relationship of the spouse together explain 53.5% of the change in the outcome (Negelkerke's R Square = 0.535).

Model 3: educational status, PCI, frequency of cleaning external genitalia and extramarital relationship of the spouse of the study participant were found to be significantly associated with unhealthy cervix in the final model. These 4 variables explain 54.1% change in the outcome variable.

DISCUSSION

The current study showed that unhealthy cervix is not a very uncommon condition among the women of reproductive age group. Women attending the clinic for some other reasons had chances of incidentally being diagnosed with cervical ill health. It was found that 86 out of 189 (45.5%) women examined were unhealthy. Similar results were concluded by Malathi P et al by a study conducted at a tertiary hospital in Hyderabad where 19% of women were screened positive. 59.5% cervices they examined, were found to be unhealthy. [21] In a hospital based study in New Delhi in the year 2012, 55.7% of patients were diagnosed with unhealthy cervix on per-speculum examination. Of these, 62.8% had benign histopathological changes on biopsy. [22]

Risk factors of cancer cervix are known but as the risk factors of unhealthy cervical condition are not yet substantiated by research, the findings if the current study about the risk factors cannot be compared.

Limitations

It was a clinic-based study; so, the results cannot be generalized to all women of the community. Most of the data were self-reported by women, which might not be authentic due to social desirability and recall bias.

CONCLUSION

More studies specially community based should to undertaken to explore these risk factors. Health education based on knowledge of the risk factors of this condition would help in ameliorating the suffering of millions of women folk. Screening of cases with unhealthy cervix for cervical cancer is expected to substantially contribute to

reduce burden of this cancer and thus reducing cancer deaths among women.

Raising awareness in favor of cancer cervix screening and popularizing screening is the need of the hour. Capacity building of health personnel through on-the-job training and supportive supervision will enable them to maintain / enhance their skills of detection of unhealthy cervix. Activities like observation of World Cancer Day (February 4) at the community and innovative use of mass / social media etc. should also be undertaken.

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