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Assessment of Perceived Threat to Cervical Cancer Among Women of Reproductive Age Group in a Slum of Kolkata

[1]Anjali S. Jainendran, [2]Nirmalya Manna, [3]Sudipto Mondal and [4]Sayantan Das Mazumdar

[1-4]Department of Community Medicine, Medical College Kolkata 88,College Street, Kolkata, West Bengal, India 700073

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Corresponding Author
Anjali S. Jainendran,
Department of Community Medicine, Medical College Kolkata 88,College Street, Kolkata, West Bengal, India 700073

Author Designation
[1,3,4]3rd Year Junior Resident
[2]Professor

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ABSTRACT
The Government of India has implemented a number of cervical cancer prevention programs, but women in India lack awareness and use cervical cancer screening services at low rates as a result. This adds to the number of Indian women who are affected by cervical cancer. The purpose of this study was to determine the explanatory factors for cervical cancer and to evaluate the perceived threat of the disease among reproductive age group females residing in a slum of Kolkata. To assess the perceived threat to cervical cancer and its explanatory factors among females of reproductive age group residing in the urban field practice area of Medical College, Kolkata. This cross sectional study was conducted among 112Females of reproductive age group, from month of September to October 2023 in Kolkata. Using simple random sampling technique with a structured questionnaire. Using health belief model's perceived severity and perceived susceptibility were taken into consideration to assess the perceived threat. Data was analyzed using descriptive statistics and logistic regression using SPSS version 23. The mean age±SD of the study participants were 35.03±8.191years. Range was from 18-49years. Out of the 112 females studied, (93.7%) were found to have unsatisfactory knowledge regarding cervical cancer and its screening procedure. Statistically significant association was found between unsatisfactory level of perceived threat and age ≤35 (Adjusted odds ratio [AOR]=6.48, CI (1.348-31.179), education up to primary level ([AOR]=17.17, CI (3.477-84.832), among the study participants. The model developed was of good fit. The perceived threat of cervical cancer and the knowledge regarding cervical cancer and its screening was extremely low among the study population. Therefore, in order to boost women's uptake of cervical cancer screening, it is essential to design strong behaviour change communication campaigns that raise women's perceptions of the disease's severity and vulnerability.

INTRODUCTION

With almost 660 000 new cases in 2022, cervical cancer ranked as the fourth most frequent malignancy in women worldwide. Approximately 94% of the 350,000 cervical cancer related fatalities that year happened in low and middle income nations. South East Asia, Central America and sub-Saharan Africa have the greatest incidence and fatality rates of cervical cancer. Because younger women are disproportionately affected by cervical cancer, 20% of children lost their mothers to cervical cancer[1]. It is frequently said that cervical cancer is a "disease of disparity" due to the substantial differences in incidence and mortality between low as well as high-income and middle -income nations[2]. With the goal of bringing the incidence of cervical cancer down below the threshold of 4 cases per 100,000 women-years in every nation and so reducing the worldwide inequities linked to this illness, world health organization established the global cervical cancer elimination initiative in 2020. The initiative's 90-70-90 goal, which must be met by 2030, calls for 90% of girls to receive vaccinations by the age of 15, 70% of women to undergo at least two high-performance test screening by the age of 45 and 90% of women who are diagnosed with cervical cancer or pre cancer to receive treatment. The world health organization's eradication strategy has underlined the necessity of ongoing and enhanced cervical cancer surveillance and monitoring as a critical first step that will allow program managers to spot gaps and implement targeted measures[3]. Early identification and treatment of cervical precancerous lesions is essential to lowering the morbidity and mortality rate from cervical cancer. Due to a lack of screening facilities and poor levels of awareness among women, health professionals in India are still very concerned about early detection and screening. One of the main causes of cervical cancer is a sexually transmitted infection with the Human Papilloma Virus (HPV). Of the 100 HPV varieties, 18 have been identified as high risk for cervical cancer and the frequency of HPV rises with the number of sexual partners and poor genital hygiene[4]. Gardasil®, a quadrivalent vaccine from Merck, protects against HPV strains 16, 18, 6 and 11, whereas Cervarix®, a bivalent vaccine from Glaxo Smith Kline (GSK), protects against HPV strains 16 and 18. Due to a lack of screening facilities and poor levels of awareness among women, health professionals in India are still very concerned about early detection and screening. Cervical cancer primarily affects younger women, with its prevalence rising quickly between the ages of 25 and 45 before declining once more. This age group is particularly vulnerable, but with the right information and good hygiene habits, as well as appropriate immunization and routine screening, the disease can be prevented[4]. Women with symptoms such as atypical vaginal bleeding (menorrhagia and metrorrhagia), odd and malodorous discharge and post-coital hemorrhage in menopausal women can be easily identified with cervical cancer. One of the best screening methods for cervical cancer early detection is the Pap smear. A diet high in vitamin A, vitamin C and folic acid, genital hygiene, seeing a doctor if symptoms have appeared and adhering to ethical standards are all part of the preventive measures, in addition to the pap test. Despite the indisputable advantages of a Pap smear test, many women have never had one during a designated time frame. Cervical cancer risk will be significantly decreased by routine pap smear screening. There are a number of reasons why fewer women are going to doctors for pap smear screenings, including a lack of awareness and knowledge about Pap smears and cervical cancer, fear of the procedure's pain, a shortage of staff and health facilities, anxiety about abnormal test results and misconceptions about the test's procedure[5]. Under the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS), screening and early diagnosis of cervical cancer in basic health facilities, followed by treatment at regional cancer centers, are crucial preventative measures. Once every five years, it was carried out for free among women aged 30-65 using acetic acid for visual inspection as part of the program. Currently, under the auspices of the Ayushman Bharat initiative, this service is offered in health and well ness Centre. The underutilization of screening and preventive services for the identification and prompt treatment of asymptomatic diseases is described by the health belief model (HBM), a health behaviour change paradigm. It is separated into three primary categories likelihood of action, modifying factors, and individual perceptions. Perceived susceptibility, perceived severity, perceived benefits and perceived barriers are all examples of perceptions. Perceived threat is the sum of perceived severity and perceived susceptibility. One of the most important variables in predicting the likelihood of accepting health care is perception of threat. Thus, improving women's perception of the threat posed by cervical cancer is essential to increasing their adoption of cervical cancer screening[6]. According to a comprehensive analysis by Thulaseedharan *et al.,* the percentage of Indian women who have had cervical cancer screening at least once in their lives varies from 0-53% among various populations[7]. Therefore, it can be inferred that the perceived threat of cervical cancer will play a major role in the uptake of cervical cancer screening services provided they are both affordable and accessible in India. We must increase the number of Indian women undergoing cervical cancer screening if we are to lower the incidence and fatalities from the disease[6]. The perceived threat of cervical cancer among women in the reproductive age range has been the subject of

very few studies and data from this study setting is currently unavailable. In light of this also trying to involve late-adolescent girls to find out what they know and think about preventing cervical cancer, after obtaining the ethical permission, this study was carried out. The possible impacts on upcoming health care services were considered while conducting this study. The purpose of the study was to assess the knowledge regarding cervical cancer and its screening, evaluate the perceived hazard to cervical cancer and to determine its explanatory factors among the female residents of reproductive age group in the urban field practice area of Medical College Kolkata.

MATERIALS AND METHODS

- **Study Type:** A descriptive epidemiological observational study.
- **Research Design:** Cross sectional survey.
- **Study Setting:** Medical College Kolkata's urban field practice area.
- **Study Period:** Months of September-October 2023.
- **Study Population:** This study was carried out among the reproductive age group women in the urban field practice area of Community Medicine department of Medical College Kolkata.

Inclusion Criteria:

- Women of reproductive age group 15-49 years, from whom the assent and legal guardian's consent obtained for <18 years and consent obtained for ≥18 years.
- Females who could not be contacted in their first visit were tried to be enrolled in second visit.

Exclusion Criteria:

- Those who had undergone cervical cancer screening in the past 5 years.
- Those who were critically ill at the time of study were excluded from the study.
- Females who could not be contacted in the second visit were excluded from the study.

- **Sample Dimensions and Sampling Methodology:** By Cochrane formula, $n=(1.96x1.96)PQ/l^2$, according to a study conducted by Jayaraman L *et al.,* in Chennai, Tamil Nadu, 22.6% of the females found themselves at risk of cervical cancer (P=22.6%)[8].
- Q=100- 22.6=77.4.
- Consequently, n=100.7~101, by using a non-responsive rate of 10%, given an absolute error of 10% and design effect of 1.5.
- Final sample size was 112 females of reproductive age group who gave consent and who doesn't include in the exclusion criteria were considered for the study.
- **Sampling Technique**: followed was of simple random sampling.

The community leaders of the slum are highly trusted and well acquainted with the residents of the slum. Initially, informal discussions were done with the community leader of the study area i.e., the urban field practice area of Community Medicine Department of Medical College Kolkata, to explain the purpose of this study and seek his support in facilitating the data collection procedure. With his guidance, a systematic walkthrough of the area was done, to enumerate the households as well as to identify the potential participants for the study. A line listing of all the women in reproductive age group (15-49 years) residing in the slum was made from a total of 180 households. Each female on the list was assigned a number and then using a random number generator each of the study participant were selected without replacement until the entire sample has reached. If a selected participant is not available even after 2 visits, the next participant in the random selection list was contacted.

Method of Data Collection: A data collection form that had been pretested and prepared and translated into local Bengali language was used to interview study participants. Cronbach's alpha (0.817) was computed for items related to the perceived threat construct. The institute's public health specialists assessed the instrument's face and content validity. Throughout the interview, confidentiality and privacy were upheld.

- **Study Variables:**
- **Independent Variables:**
- **Socio Demographic Characteristics:** The variables include age, religion, educational attainment, marital status, family structure, current employment, body mass index, Socio economic status as per Modified B.G. Prasad's scale used for socio economic status was the one updated in May 2023.

B)Knowledge Regarding Cervical Cancer and Screening:

- For assessment of knowledge regarding the cervical cancer and its screening 10-point scale was used, Each correct answer was given a point of 1 and wrong answer a point of 0.The maximum points expected are 10 and minimum of 0.
- The score was dichotomized for knowledge (score of ≥5 (Satisfactory knowledge), <5 (Unsatisfactory knowledge), taking 50% of attainable score (10) as the cut off criteria.

- **Dependent Variable:**
- **Perceived Threat to Cervical Knowledge:** This construct contained a total of six elements. A three-point Likert scale was used to rate each item in the construct: three for agreement, two for neutrality and one for disagreement. Based on the 50% of attainable score (18), the score was separated into two groups: unsatisfactory (<50% of the maximum attainable score) and satisfactory (≥50% of the highest attainable score).
- **Data Analysis and Ethical Consideration:** The study was approved by the Medical College of Kolkata's Institutional Ethics Committee for Human Research and Scientific Advisory Committee. A Microsoft Excel © 2021 spreadsheet was utilized to tabulate the data and the statistical package for the social sciences software student version 23.0 was utilized for analysis.

RESULTS AND DISCUSSIONS

The mean age±SD of the study participants were 35.03±8.191years. Range was from 18- 49years. Out of the 112 females studied, majority of them belonged to age group 35-44 years (46.4%), followed Hinduism (82.1%), hailed from nuclear family (95.5%). Majority of the study participants had secondary level of education (35.7%) and were currently unemployed (97.3%). 50.9% of them belonged to class IV socio economic class according to Modified B.G. Prasad's scale, updated in May 2023. About 94.6% of them were married. **(Table 1).**

Knowledge Regarding Cervical Cancer and its Screening: Overall (93.7%) were found to have unsatisfactory knowledge regarding cervical cancer and its screening procedure. **(Table 2).**

Perceived Threat to Cervical Knowledge: Among 112 females included in the study only 11.6% of them felt that they are susceptible to cervical cancer. In terms of the perception of severity, about (35.7%) concurred that cervical cancer is a major health issue for women and that it can be fatal for those who have it (17.0%). 34.8% of the women believed that a hysterectomy could result from cervical cancer. **(Table 3).**

The majority of the participating females (61.6%) reported poor levels of perceived threat to cervical cancer, whereas just 38.4% had satisfactory levels overall. **(Fig. 1).**

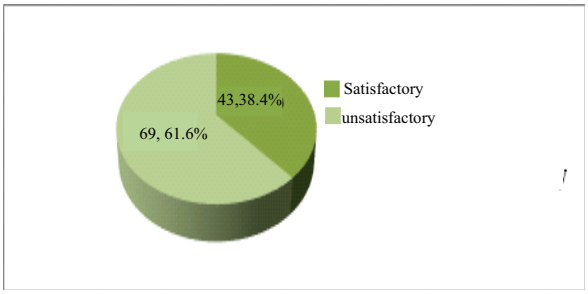

Fig. 1: Distribution of Study Participants According to their Levels of Perceived Threat.(n=112)

Factors Associated with Unsatisfactory Perceived Threat to Cervical Cancer: On testing of association using Chi square between the variables and unsatisfactory perceived threat to cervical cancer it was found that Religion, educational status, type of family , marital status and unsatisfactory knowledge on cervical cancer and its screening procedures were found to be significant, with a p value <0.05.

Predictors of Unsatisfactory Perceived Threat to Cervical Cancer: Independent variables which were found significant in Univariate logistic regression were put into multi variable logistic regression model at 95% CI. Finally age ≤35 (Adjusted odds ratio [AOR]=6.48, CI (1.348-31.179) and education up to primary level (Adjusted odds ratio [AOR]=17.17, CI (3.477-84.832), retained their significance with explained variance of 49.6% (Nagelkerke pseudo R squared) for unsatisfactory perceived threat regarding cervical cancer. The model was of good fit as predicted by Hosmer-Lemeshow test (p=0.735).The results revealed that there are around 6.48 times more odds of having unsatisfactory perceived threat to cervical cancer in women in the reproductive age group than in elder women. Similarly, there are around 17.17 times more odds of having unsatisfactory perceived threat to cervical cancer in those with education level up to primary than in those with higher education level. **(Table 4).**

Finally in this study it has been found out that the level of perceived threat among the women of reproductive age group is affected by the age as well as their educational status. The acceptability of preventive health services like screening has been extensively studied using health belief model, which is a useful paradigm for predicting health behaviors. health belief

Table 1: Socio Demographic Characteristics of the Study Participants.(n=112)

Socio demographic variables	Category	Frequency(n)	Percentage(%)
Age in completed years	15-24	14	12.5
	25-34	33	29.5
	35-44	52	46.4
	≥45	13	11.6
Religion	Hinduism	92	82.1
	Islam	20	17.9
Education	Illiterate	16	14.3
	Primary	22	19.6
	Secondary	34	30.4
	Higher Secondary	40	35.7
Type of family	Nuclear Family	107	95.5
	Joint Family	5	4.5
Current marital status	Married	106	94.6
	Not married*	6	5.4
Socio economic status*	Class (II)	3	2.6
	Class(III)	7	6.3
	Class(IV)	57	50.9
	Class(V)	45	40.2
Occupation status	Currently employed	3	2.7
	Currently unemployed*	109	97.3

*Currently not married include Widow and unmarried study participants,*Socio economic status as per Modified B.G.Prasad's scale updated May 2023, *currently unemployed include students and homemakers.

Table 2: Distribution of Study Participants According to their Scores Obtained for Knowledge Regarding Cervical Cancer and its Screening. (n=112)

Knowledge on cervical cancer and its screening	Frequency(n)	Percentage (%)
Satisfactory Knowledge (score of ≥5)	7	6.3
Unsatisfactory Knowledge (score of <5)	105	93.7
Total	**112**	**100.0**

Table 3: Distribution of Study Participants According to their Perceived Threat to Cervical Cancer. (n=112)

Variables	Agree, n (%)	Neither agree nor disagree, n (%)	Disagree, n (%)
1.Cervical cancer is one of the common cancer among women of your age	23,(20.5)	13,(11.6)	76,(67.9)
2.You are at risk of having cervical cancer	13,(11.6)	16,(14.3)	83,(74.1)
3.Women having cervical cancer can die	19,(17.0)	76,(67.8)	17,(15.2)
4.Having cervical cancer will make life difficult	40,(35.7)	2,(1.8)	70,(62.5)
5.Cervical cancer treatment may lead to removal of uterus	39,(34.8)	3,(2.7)	70,(62.5)
6.Cervical cancer involves complicated and prolonged treatment such as chemotherapy and radiotherapy	40,(35.7)	3,(2.7)	69,(61.6)

Table 4: Predictors of Unsatisfactory Perceived Threat to Cervical Cancer

Variable	Unadjusted OR*	Adjusted or*	95% CI of Exp(B)
Age ≤35 years	1.170	6.482	1.348-31.179
Education up to primary	5.983	17.174	3.477-84.832

*Both Adjusted OR and Unadjusted OR, with p value <0.05.

model makes the assumption that people's health behaviors are influenced by characteristics such as perceived threat (perceived severity and perceived susceptibility combined), perceived benefits, perceived barriers, cues to action and self-efficacy. Perceived severity and perceived susceptibility, two health belief model constructs, were used to measure perceived threats and determine whether at-risk women would use cervical cancer screening services. The application of the health belief model as an explanatory model in this study was reinforced by the inclusion of external components including socio demographic characteristics and information about cervical cancer[6]. Regarding the knowledge on cervical cancer among the reproductive age group, in this study it was found that almost 93.7% had unsatisfactory knowledge, which was much more that the results obtained in a study conducted in South India by Reichheld *et al.*, where about 84.6% had poor knowledge on cervical cancer[9]. In a study conducted in Nepal by Niresh Thappa *et al.,* it showed about 87% of the study participants had inadequate knowledge regarding cervical cancer. These variations in the result may be due to the difference in geographical and socio demographic characteristics of study populations[10]. In this research it was found that the majority of study participants did not feel that they were at risk of developing cervical cancer. Which was a similar finding to study conducted by Yadav[6]. In another study conducted using Health Belief Model in Nepal by Acharya Pandey and Karmacharya found that 55.0% of the respondents strongly disagreed to the statement that they are likely to get cervical cancer. 81.7% of the study participants did not have cervical cancer screening behaviour[11]. In this study it was seen

that about 38.4% of study participants had satisfactory levels of perceived threat to cervical cancer. These results were more than the results obtained in the study conducted by Yadav *et. al,* which was only 22.9%[6]. According to a study by Shirazi Zadeh Mehraban *et al.,* women's familiarity with the implications of cervical cancer was explained by 35% of all participants having a good perception of susceptibility and 56.5% of participants having a good perceived severity score. This discrepancy could have played a role in the two populations differing socio cultural characteristics and cut off scores. Adopting healthy behaviors depends critically on having a satisfactory perceived threat[6,12]. In this study the predictors of perceived threat regarding cervical cancer were age as well as education up to primary level. Which was similar to study conducted by Yadav *et al.,* where age, education up to primary level and poor knowledge were found to be the predictors[6]. From this study we could finally understood that perceived severity rises with academic level. High levels of education appear to raise awareness, which in turn raises participation in services for prevention and treatment. The results of this investigation are limited by the cross-sectional study design and the selection of only two health belief model's constructs. Additionally, the finding's generalizability may be impacted by the very small sample size. Since the study used self-report measures, there was also a chance that replies would be influenced by social necessity.

CONCLUSION

It can be concluded that since low educational levels, and unsatisfactory knowledge regarding cervical cancer is associated with unsatisfactory perceived threat. The upcoming generations of the society, females with lower educational status, with lack of knowledge regarding this largely preventable disease are more prone to make unhealthy health care seeking practices. Therefore, it is crucial to empower women through education and employment and to raise community health literacy about cervical cancer so that at-risk women can understand the severity and susceptibility of the disease. This will help to facilitate the adoption of appropriate cervical cancer screening and preventive services.

REFERENCES

1. Garg, P., S. Srivastava, S. Shumayla, K. Kurian and A. Rehman *et al.,* 2022. Women's Knowledge on Cervical Cancer Risk Factors and Symptoms: A Cross Sectional Study from Urban India. Asian Pac. J. Cancer Prev., 23: 1083-1090.
2. Singh, D., J. Vignat, V. Lorenzoni, M. Eslahi and O. Ginsburg *et al.,* 2023. Global estimates of incidence and mortality of cervical cancer in 2020: A baseline analysis of the WHO Global Cervical Cancer Elimination Initiative. The Lancet Global Health, 11: 197-206.
3. Bathija, G., S. Mallesh and M. Gajula, 2016. A study on awareness of cervical cancer among women of reproductive age group in urban slums of old Hubli, Karnataka, India. Int. J. Community Med. Public Health, 3: 2579-2583.
4. Mehraban, S.S., A. Namdar and M.M. Naghizadeh., 2018. 1) Assessment of preventive behavior for cervical cancer with the health belief model. Asian Pacific journal of cancer prevention: APJCP., Vol. 19 .10.22034/APJCP.2018.19.8.2155.
5. Yadav, A., M. Dobe, B. Paul and C. Taklikar, 2022. A cross-sectional study on assessment of perceived threat to cervical cancer using health belief model among women in a slum area of Kolkata. J. Educ. Health Promotion, Vol. 11 .10.4103/jehp.jehp_392_21.
6. Thulaseedharan, J., K. Frie and R. Sankaranarayanan, 2019. Challenges of health promotion and education strategies to prevent cervical cancer in India: A systematic review. J. Educ. Health Promotion, Vol. 8 .10.4103/ jehp.jehp_156_19.
7. Jayaraman, L., M.K. , S. Khichi, A. Singh and S. Goel *et al.,* 2016. Self-perceived risk and barriers to cervical cancer screening among patients seeking care at a tertiary care teaching hospital in Tamil Nadu. Int. J. Res. Med. Sci., 766-769.
8. Reichheld, A., P.K. Mukherjee, S.M. Rahman, K.V. David and R.A. Pricilla, 2020. Prevalence of Cervical Cancer Screening and Awareness among Women in an Urban Community in South India—A Cross Sectional Study. Ann. Global Health, Vol. 86 .10.5334/aogh.2735.
9. Thapa, N., M. Maharjan, M.A. Petrini, R. Shah and S. Shah *et al.,* 2018. Knowledge, attitude, practice and barriers of cervical cancer screening among women living in mid-western rural, Nepal. J. Gynecologic Oncol., Vol. 29 .10.3802/jgo. 2018.29.e57.
10. Pandey, R.A. and E. Karmacharya, 2017. Cervical cancer screening behavior and associated factors among women of Ugrachandi Nala, Kavre, Nepal. Eur. J. Med. Res., 22: 1-9.
11. Shirazi, Z.M.S., A. Namdar and M.M. Naghizadeh., 2018. 1) Assessment of preventive behavior for cervical cancer with the health belief model. Asian Pac J Cancer Prev., 19: 2155-2163.