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Cervical Cancer Awareness and Screening Attitudes Among Women Attending a Tertiary Care Hospital in Dhaka, Bangladesh

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Abstract

Background

Cervical cancer is one of the leading causes of cancer-related morbidity and mortality among women worldwide, particularly in low- and middle-income countries. Although cervical cancer can be prevented through early detection and treatment of precancerous lesions, inadequate awareness and unfavourable attitudes towards screening continue to hinder effective prevention efforts.

Objective

This study aimed to assess cervical cancer awareness and screening attitude among women attending the Gynaecology Outpatient Department of a tertiary care hospital.

Methods

A hospital-based cross-sectional study included 346 women aged 30-60 years attending the Gynaecology Outpatient Department of Dhaka Medical College Hospital. Sociodemographic characteristics and whether participants had heard of cervical cancer were assessed among all 346 women. Detailed cervical cancer awareness and screening-attitude analyses were restricted to the 303 respondents (87.6%) who had heard of cervical cancer. Data were collected through face-to-face interviews using a pretested semi-structured questionnaire. Associations between the four-category awareness outcome and categorical sociodemographic variables were examined using the Fisher-Freeman-Halton exact test. Associations involving the binary screening-attitude outcome were examined using Pearson's chi-square or Fisher's exact test, as appropriate. Continuous age and monthly income were compared between attitude groups using independent-samples Welch t-tests. All tests were two-sided, with $p < 0.05$ considered statistically significant.

Results

The mean age of the 346 participants was 38.3 ± 6.3 years. Overall, 303 of 346 women (87.6%) had heard of cervical cancer. Among these 303 women, 129 (42.6%) identified unusual vaginal bleeding as a symptom, 86 (28.4%) identified human papillomavirus (HPV) infection as a risk factor, 100 (33.0%) were aware of precancerous cervical lesions, and 216 (71.3%) knew that cervical cancer could be detected through screening. Poor awareness of symptoms and risk factors was observed in 174 (57.4%) and 173 (57.1%), respectively. Sufficient screening attitudes were observed in 86 (28.4%) women, whereas 217 (71.6%) had insufficient attitudes. Age was associated with awareness level (Fisher-Freeman-Halton exact test, $p = 0.048$), whereas occupation was not ($p = 0.295$). No sociodemographic characteristic was significantly associated with the screening-attitude category.

Conclusions

Although most respondents had heard of cervical cancer, important gaps remained in their awareness of risk factors, screening methods, HPV infection, and precancerous lesions. Attitudes towards cervical cancer screening were also classified as insufficient in most respondents.

Categories: Obstetrics/Gynecology, Public Health, Oncology
Keywords: awareness, cervical cancer, cervical cancer prevention, screening, women health

Introduction

Cervical cancer is a worldwide health problem and is one of the most common causes of cancer-related

morbidity and mortality among women, especially in low-income and middle-income countries. Persistent infection with high-risk types of human papillomavirus (HPV) is a necessary cause of the disease [1]. Cervical cancer typically arises slowly, through identifiable precancerous lesions that can be detected in advance of the development of invasive cancer. HPV vaccination, screening tests like Papanicolaou (Pap) or HPV tests and treatment of precancerous lesions provide effective means to prevent cervical cancer, which is one of the most preventable cancers through evidence-based interventions [2]. Poor awareness, accessibility of screening services and sociocultural factors still impede the implementation of these preventive methods. Consequently, it still accounts for a large number of morbidity and mortality among women in the world even when greater awareness exists as to cervical cancer risk factors, particularly in developing countries where organised screening services have not been widely established, nor have effective health education strategies [3].

Several effective screening methods are available to identify precancerous lesions before they progress to invasive cancer, including the Pap smear, HPV DNA testing and visual inspection with acetic acid (VIA) [4]. When these screening approaches are implemented systematically and at a large scale, they have been shown to significantly reduce both the incidence and mortality of cervical cancer. However, limited awareness, absence of well-organised national screening programmes, restricted access to healthcare facilities and sociocultural barriers continue to hinder the utilisation of cervical cancer screening services, particularly in countries such as Bangladesh [2,5].

Adequate awareness regarding cervical cancer and its screening is a key factor that influences women's health-seeking behaviour and participation in screening programmes. Evidence from several countries indicates that many women still have insufficient understanding of the risk factors, symptoms and preventive measures related to cervical cancer [6]. For instance, a study conducted among women attending a gynaecology outpatient clinic in Pakistan found that only 41.2% of participants had heard about cervical cancer, 33.6% were aware of cervical cancer screening, and merely 15.9% had ever undergone a screening test. These findings highlight the significant awareness gap that continues to limit the utilisation of preventive services in many developing settings [7].

Recognising the global burden of the disease, the World Health Organization introduced a global strategy aimed at eliminating cervical cancer as a public health problem. This strategy proposes the 90-70-90 targets to be achieved by 2030: vaccinating 90% of girls against HPV by the age of 15, screening 70% of women at least twice in their lifetime by ages 35 and 45 and ensuring that 90% of women diagnosed with cervical disease receive appropriate treatment and care. Successful implementation of these targets is expected to substantially reduce the global incidence and mortality of cervical cancer in the coming decades [2].

In Bangladesh, it is reported to be the second most common cancer among Bangladeshi women, accounting for about 13.3% of all female cancers. According to recent estimates, approximately 9,640 new cases and around 5,826 deaths from cervical cancer occur each year in the country. The high mortality rate is largely associated with late-stage diagnosis, insufficient screening coverage and limited awareness among women regarding the risk factors, symptoms and preventive measures of the disease [8].

Several studies carried out in Bangladesh have identified significant gaps in women's awareness regarding cervical cancer and its associated risk factors. Although some women have heard about the disease, their understanding of its causes - particularly infection with HPV - as well as preventive measures, such as cervical cancer screening and vaccination, remains limited. A study among women attending a tertiary-level hospital in Bangladesh reported that while a proportion of respondents had heard about cervical cancer, only a small number were able to correctly identify its risk factors and available preventive strategies. These deficiencies in awareness highlight the need for effective health education and awareness initiatives to promote early detection and timely management of the disease [9]. Even when screening facilities are available, misconceptions, insufficient awareness and sociocultural barriers often result in low participation in screening programmes. Therefore, understanding the level of awareness and their attitudes towards cervical cancer screening is essential for designing appropriate interventions aimed at improving screening uptake and ultimately reducing the burden of cervical cancer [10].

Tertiary care hospitals play an important role in providing specialised healthcare services, including gynaecological consultation and cervical cancer screening. Women attending Gynaecology Outpatient Departments represent a diverse group who may benefit from health education and preventive services. Assessing their awareness and attitudes towards cervical cancer and its screening can help identify awareness gaps and barriers that limit the use of screening services. Understanding these factors is essential for developing effective educational interventions and improving cervical cancer prevention programmes.

Therefore, this study aims to assess the level of cervical cancer overall awareness and screening attitudes among women attending the Gynaecology Outpatient Department of a tertiary care hospital.

Materials And Methods

This was a hospital-based cross-sectional study, conducted to assess cervical cancer awareness and attitudes

towards cervical cancer screening among women attending the Gynaecology Outpatient Department of a tertiary care hospital.

The total study period was from July 2025 to June 2026. The period included topic selection, literature review, protocol preparation and approval, ethical clearance, questionnaire development and pretesting, data collection, data processing, analysis, report writing and final submission.

The study was conducted in the Gynaecology Outpatient Department of Dhaka Medical College Hospital, Dhaka. The site had been selected purposively because it was a large tertiary care public hospital that provides gynaecological services to women from Dhaka and other districts. The high patient flow and diverse patient population make the department suitable for assessing cervical cancer awareness and screening attitudes among women who were already in contact with reproductive healthcare services.

Participants

Women aged 30-60 years who attended the gynaecological outpatient department of Dhaka Medical College Hospital during the data collection period and gave consent to participate in the study were included as study participants. Women diagnosed with cervical cancer underwent total hysterectomy with removal of the cervix, and seriously ill patients were excluded.

Sampling

A convenience sampling technique was used to enrol eligible participants from the Gynaecology Outpatient Department during the data collection period.

Study population

Women aged 3060 years attending the Gynaecology Outpatient Department of Dhaka Medical College Hospital during the study period who provided written informed consent to participate were included. Women previously diagnosed with cervical cancer or currently receiving treatment for cervical cancer, women who had undergone total hysterectomy with removal of the cervix, seriously ill patients who were unable to respond to the questionnaire, and women who were unwilling to participate were excluded.

Sample size

The sample size was calculated using the single population proportion formula:

$$n = \frac{Z^2 pq}{d^2}$$

where Z is the standard normal variate at a 95% confidence level (1.96), p is the estimated proportion of cervical cancer awareness (71.7% or 0.717) [9], q is 1 - p (0.283), and d is the margin of error, considered to be 5% or 0.05.

$$n = \frac{(1.96)^2 \times 0.717 \times 0.283}{(0.05)^2} = 312$$

After accounting for 10% missing data, the sample size (n) was 346. Therefore, the final sample size was 346 participants. For the analysis of variables related to cervical cancer awareness and screening attitudes, data from 303 participants were analysed.

Data collection and questionnaire administration

Data were collected using a pretested semi-structured questionnaire. The questionnaire was developed from a literature review.

The final questionnaire consisted of 41 items organised into several sections, including sociodemographic characteristics, symptoms, risk factors, screening methods for cervical cancer, precancerous lesions, treatment options for precancerous lesions, preventive measures, cervical cancer awareness and attitudes towards screening. Out of the total items, 28 were used to assess the awareness score, while six items were used to measure attitude towards cervical cancer screening. The remaining questions were designed to capture participants' background information and their previous exposure to health services.

The questionnaire was prepared in English and translated into Bangla. Back translation was performed to check consistency of meaning. The instrument was pretested among women with similar characteristics outside the final sample, and necessary modifications were made for clarity, cultural appropriateness and interview flow.

Data were collected through face-to-face interviews in a quiet and private area of the Gynaecology Outpatient Department. Each interview was expected to take approximately 15-20 minutes. Data were recorded on separate questionnaires for each respondent, and confidentiality was maintained throughout the process.

Pretesting was done at the Shaheed Suhrawardy Medical College, Dhaka.

Data processing

After data collection, questionnaires were checked, coded and cleaned. Data were entered into a master dataset and cross-checked for completeness, consistency and outliers. Identifying information was removed from the analysis dataset. The data were used only for this study and were stored securely.

Variables and outcomes

The dependent variables were level of cervical cancer awareness and attitude towards cervical cancer screening.

The independent variables included sociodemographic characteristics (age, religion, education, occupation, place of residence, marital status, and household income) and reproductive and clinical characteristics (parity, contraceptive use, menstrual and reproductive history, history of sexually transmitted infections or HPV infection, and gynaecological symptoms).

Statistical analysis

Data were analysed using IBM SPSS Statistics for Windows, Version 27.0 (IBM Corp., Armonk, NY). Descriptive statistics were used to summarise sociodemographic characteristics, awareness scores and attitude scores. Frequencies and percentages were presented for categorical variables, while means with standard deviations (SDs) were presented for continuous variables according to distribution.

The awareness section included 28 scored items. Each correct response received 1 point; incorrect responses received 0. Total score ranged from 0 to 28. Scores were converted into percentages, and overall awareness was categorised as poor (50%), average (50-70%), good (70-80%) and excellent (>80%) [9]. Here, cut-off marks were mutually exclusive: poor, less than or equal to 50% (⩽ 50%); average, greater than 50% and less than or equal to 70% (50%-70%); good, greater than 70% and less than or equal to 80% (70%-80%); and excellent, greater than 80% (>80%).

Attitude towards cervical cancer screening was assessed using six binary items. Each item was assigned 1 point for the prespecified attitude-positive response and 0 points otherwise. Item scores were summed without weighting, giving a theoretically possible total attitude score of 0-6. A total score of 5-6 was classified as a sufficient screening attitude, and a score of 0-4 as an insufficient screening attitude [11].

Inferential statistics included the chi-square test and Fisher's exact test, which were done to find out the association between categorical variables. The association between independent variables and awareness/attitude categories was assessed using the chi-square test or Fisher’s exact test where expected cell counts are small. Tests of significance were performed according to the objectives as needed. Associations between sociodemographic characteristics and the four-category awareness outcome were assessed using the Fisher-Freeman-Halton exact test for contingency tables. For comparisons involving the binary screening-attitude category, Pearson chi-square tests or a two-sided Fisher exact test were used; continuous age and monthly income were compared using independent-samples Welch t-tests. A two-sided p-value < 0.05 was considered statistically significant. Any association was tested using the chi-square test. A p-value < 0.05 was regarded as significant. The level of significance is set at a 95% confidence interval.

Ethical considerations

Ethical clearance was obtained from the Institutional Review Board of Dhaka Medical College. Written permission was obtained from the study site before data collection. Participants were informed about the aim, objectives, procedures, voluntary nature, expected duration, potential risks and benefits of the study. Written informed consent was obtained before participation. Participants were informed that refusal or withdrawal would not affect their treatment or access to hospital services. Privacy was maintained during interviews by conducting them in a quiet and suitable place within the outpatient department. Personal identifiers were removed from the analysis dataset. Completed questionnaires and electronic data were stored securely and accessed only by the research team.

Results

A total of 346 women aged 30-60 years attending the Gynaecology Outpatient Department of Dhaka Medical College Hospital were included in this hospital-based cross-sectional study. Table *1* describes all 346 respondents. Of these, 303 (87.6%) had heard of cervical cancer, and the detailed analyses of awareness and

screening attitudes are based on this subgroup, except for the initial "ever heard" item, which uses all 346 respondents.

Sociodemographic characteristic	Frequency (n)	Percentage (%)
Age group (years)		
30-34 years	88	25.4
35-39 years	127	36.7
40-44 years	68	19.7
≥ 45 years	63	18.2
Age, mean ± SD (years)	38.3 ± 6.3	
Educational qualification		
Illiterate	31	9.0
Primary incomplete	70	20.2
Primary completed	92	26.6
Secondary	57	16.5
Higher secondary completed	53	15.3
Graduated	32	9.2
Completed master's degree	11	3.2
Marital status		
Married	239	69.1
Unmarried	39	11.3
Widowed	42	12.1
Divorced	26	7.5
Socioeconomic status (taka)		
≤ 21,500 BDT	128	37.0
>21,500 BDT	218	63.0
Mean ± SD (BDT)	24,106.9 ± 6,087.1	

TABLE 1: Sociodemographic characteristics of the respondents (n = 346)

Sociodemographic characteristics of all study participants (n = 346). All percentages are based on n = 346

Categorical data are presented as frequencies and percentages; continuous data are presented as mean ± standard deviation (SD).

BDT: Bangladeshi taka

Sociodemographic characteristics

The mean age of the 346 respondents was 38.3 ± 6.3 years. The largest age group was 35-39 years (127, 36.7%), followed by 30-34 years (88, 25.4%). Primary education had been completed by 92 women (26.6%), whereas 31 (9.0%) were illiterate. Most respondents were married (239, 69.1%). Monthly family income exceeded BDT 21,500 for 218 respondents (63.0%), and the mean monthly income was BDT 24,106.9 ± 6,087.1 (Table *1*).

Awareness of cervical cancer and screening

Of the 346 participants, 303 (87.6%) reported having heard of cervical cancer, and 43 (12.4%) had not. Among the 303 respondents assessed for detailed awareness, the most frequently reported symptoms were

vaginal infection (173, 57.1%), abnormal vaginal discharge (157, 51.8%) and unusual vaginal bleeding (129, 42.6%). Pain after intercourse and growth in the cervix or uterus were each identified by 86 women (28.4%). Oral contraceptive pill use, multiple sexual partners, and early sexual intercourse were each identified as risk factors by 216 respondents (71.3%); 86 (28.4%) identified HPV infection, and 43 (14.2%) identified smoking (Table *2*).

Awareness indicator/response	Frequency (n)	Percentage (%)
Ever heard of cervical cancer (n = 346)		
Yes	303	87.6
No	43	12.4
Awareness of cervical cancer symptoms (n = 303)		
Unusual vaginal bleeding	129	42.6
Vaginal infection	173	57.1
Abnormal discharge from vagina	157	51.8
Pain after intercourse	86	28.4
Growth in cervix/uterus	86	28.4
Awareness of cervical cancer risk factors (n = 303)		
Oral contraceptive pill	216	71.3
Multiple sexual partner	216	71.3
Having sex at an early age	216	71.3
Multiparity	174	57.4
Smoking	43	14.2
Virus (HPV)	86	28.4
Awareness that screening can detect cervical cancer (n = 303)		
Yes	216	71.3
No	87	28.7
Awareness of cervical cancer screening methods (n = 303)		
VIA	216	71.3
Pap smear	87	28.7
Awareness of precancerous cervical lesions (n = 303)		
Yes	100	33.0
No	203	67.0
Awareness of treatment options for precancerous lesions (n = 303)		
Electrocautery	180	59.4
LEEP	43	14.2
TAH	162	53.5
Diagnostic D&C	43	14.2

TABLE 2: Awareness of cervical cancer, screening and precancerous lesions among study participants

The “ever heard of cervical cancer” responses use n = 346. All other item percentages are based on the 303 women who had heard of cervical cancer; multiple responses were permitted where applicable, so some percentages do not sum to 100%.

D&C: dilatation and curettage; HPV: human papillomavirus; LEEP: loop electrosurgical excision procedure; TAH: total abdominal hysterectomy; VIA: visual inspection with acetic acid

A total of 216 respondents (71.3%) knew that cervical cancer could be detected through screening. VIA was recognised by 216 (71.3%), whereas 87 (28.7%) identified the Pap smear. Awareness of precancerous cervical

lesions was reported by 100 women (33.0%). When asked about treatment options for precancerous lesions, 180 respondents (59.4%) cited electrocautery, 162 (53.5%) cited total abdominal hysterectomy, and 43 (14.2%) each cited loop electrosurgical excision procedure (LEEP) and diagnostic dilatation and curettage (Table 2).

Levels of awareness across domains

Poor awareness was observed for cervical cancer symptoms in 174 respondents (57.4%) and for risk factors in 173 (57.1%); the corresponding mean ± SD scores were 2.56 ± 1.18 and 2.71 ± 1.27. For screening-method types and treatment options for precancerous lesions, the most frequent classification was average awareness (173 respondents, 57.1%, in each domain), with mean scores of 0.85 ± 0.64 and 1.13 ± 0.64, respectively. Awareness of preventive measures was classified as average in 174 respondents (57.4%), with a mean score of 4.99 ± 1.51 (Table 3).

Variables	Level of awareness				Mean	SD
	Poor n (%)	Average n (%)	Good n (%)	Excellent n (%)		
Symptoms for cervical cancer	174 (57.4)	86 (28.4)	40 (13.2)	3 (1.0)	2.56	1.18
Risk factors for cervical cancer	173 (57.1)	87 (28.7)	39 (12.8)	4 (1.4)	2.71	1.27
Screening method types for cervical cancer	87 (28.7)	173 (57.1)	30 (9.9)	13 (4.3)	0.85	0.64
Treatment for precancerous lesions of cervical cancer	87 (28.7)	173 (57.1)	38 (12.6)	5 (1.6)	1.13	0.64
Preventive measures of cervical cancer	43 (14.2)	174 (57.4)	43 (14.2)	43 (14.2)	4.99	1.51

TABLE 3: Awareness level among respondents on different variables of cervical cancer (n = 303)

Levels of awareness among respondents who had heard of cervical cancer (n = 303). All category percentages were calculated using n = 303.

Associations between awareness and sociodemographic characteristics

Among the 303 respondents included in the awareness analysis, age group was significantly associated with awareness level (Fisher-Freeman-Halton exact test, p = 0.048). No statistically significant associations were identified for religion (p = 0.933), marital status (p = 0.785), educational qualification (p = 0.524), occupation (p = 0.295), residence (p = 0.597), or economic status (p = 0.347) (Table 4).

Variable	Categories	Level of awareness				p-value
		Poor (n = 86) n (%)	Average (n = 174) n (%)	Good (n = 40) n (%)	Excellent (n = 3) n (%)	
Age groups (years)	30-34 years	19 (22.1)	49 (28.2)	11 (27.5)	0 (0.0)	0.048
	35-39 years	40 (46.5)	53 (30.5)	14 (35.0)	0 (0.0)	-
	40-44 years	10 (11.6)	39 (22.4)	8 (20.0)	3 (100.0)	-
	≥ 45 years	17 (19.8)	33 (19.0)	7 (17.5)	0 (0.0)	-
Religion	Islam	83(96.5)	166 (95.4)	38 (95.0)	3 (100.0)	-
	Hindu	3 (3.5)	8 (4.6)	2 (5.0)	0 (0.0)	0.933
Marital status	Married	60 (69.8)	117 (67.2)	29 (72.5)	2 (66.7)	-
	Unmarried	11 (12.8)	19 (10.9)	5 (12.5)	0 (0.0)	0.785
	Widowed	7 (8.1)	26 (14.9)	4 (10.0)	1 (33.3)	-
	Divorced	8 (9.3)	12 (6.9)	2 (5.0)	0 (0.0)	-
Educational qualification	Illiterate	6 (7.0)	14 (8.0)	5 (12.5)	1 (33.3)	-
	Primary incomplete	14 (16.3)	35 (20.1)	9 (22.5)	0 (0.0)	0.524
	Primary completed	23 (26.7)	50 (28.7)	8 (20.0)	0 (0.0)	-
	Secondary	14 (16.3)	28 (16.1)	8 (20.0)	1 (33.3)	-
	Higher secondary completed	20 (23.3)	25 (14.4)	3 (7.5)	1 (33.3)	-
	Graduated	7 (8.1)	17 (9.8)	4 (10.0)	0 (0.0)	-
	Completed master's degree	2 (2.3)	5 (2.9)	3 (7.5)	0 (0.0)	-
Occupation	Housewife	31 (36.0)	87 (50.0)	15 (37.5)	1 (33.3)	0.295
	Working woman	36 (41.9)	58 (33.3)	18 (45.0)	2 (66.7)	-
	Others	19 (22.1)	29 (16.7)	7 (17.5)	0 (0.0)	-
Residence	Urban	31 (36.0)	52 (29.9)	10 (25.0)	1 (33.3)	0.597
	Rural	55 (64.0)	122 (70.1)	30 (75.0)	2 (66.7)	-
Economic status	≤ 21500 BDT	34 (39.5)	60 (34.5)	18 (45.0)	0 (0.0)	0.347
	>21500 BDT	52 (60.5)	114 (65.5)	22 (55.0)	3 (100.0)	-

TABLE 4: Association between awareness level and sociodemographic characteristics (N = 303)

Analysis restricted to 303 women who had heard of cervical cancer. Percentages are calculated within awareness-category columns: poor n = 86, average n = 174, good n = 40, and excellent n = 3. p-values are from the Fisher-Freeman-Halton exact test.

Attitudes towards cervical cancer screening

Among the 303 respondents assessed, 86 (28.4%) were classified as having sufficient screening attitudes and 217 (71.6%) as having insufficient attitudes. The recommendation of VIA screening to other women was reported by 86 of 86 women (100.0%) in the sufficient-attitude group, compared with 173 of 217 (79.7%) in the insufficient-attitude group ($\chi^2(1) = 20.40$, $p < 0.001$). Advising VIA testing for all eligible women was reported by 86 (100.0%) and 44 (20.3%) respondents, respectively ($\chi^2(1) = 159.80$, $p < 0.001$) (Table 5).

Attitude item (yes response)	Sufficient (n = 86) n (%)	Insufficient (n = 217) n (%)
Recommend other women to undergo VIA screening	86 (100.0)	173 (79.7)
Advise a VIA test for all eligible women	86 (100.0)	44 (20.3)
Think nearby female neighbours would be willing to undergo VIA screening	43 (50.0)	0 (0.0)
Willing to undergo VIA screening in the future	86 (100.0)	87 (40.1)
Consider undergoing VIA screening after learning about cervical cancer risk	86 (100.0)	217 (100.0)
Perceive oneself to be at risk of cervical cancer	43 (50.0)	0 (0.0)

TABLE 5: Attitude items by overall screening-attitude category (N = 303)

Analysis restricted to 303 women who had heard of cervical cancer. Percentages are calculated within the sufficient-attitude group (n = 86) and insufficient-attitude group (n = 217).

VIA: visual inspection with acetic acid

Willingness to undergo VIA screening in the future was reported by 86 women (100.0%) with sufficient attitudes and 87 (40.1%) with insufficient attitudes. Both the perceived willingness of nearby female neighbours to undergo VIA screening and the perceived personal risk of cervical cancer were reported by 43 women (50.0%) in the sufficient-attitude group and none in the insufficient-attitude group (Table *5*).

Associations between screening attitudes and sociodemographic characteristics

No statistically significant associations were observed between screening-attitude category and age group ($\chi^2(3) = 2.01$, $p = 0.571$), religion (Fisher's exact test, $p = 1.000$), marital status ($\chi^2(3) = 0.56$, $p = 0.905$), education ($\chi^2(6) = 5.83$, $p = 0.443$), residence ($\chi^2(1) = 0.41$, $p = 0.523$), occupation ($\chi^2(2) = 0.30$, $p = 0.860$) or monthly income category ($\chi^2(1) = 0.04$, $p = 0.835$) (Table *6*).

Characteristic	Sufficient (n = 86) n (%)	Insufficient (n = 217) n (%)	Test statistic	p-value
Age group (years), n (%)				
30-34	22 (25.6)	57 (26.3)	$\chi^2(3) = 2.01$	0.571
35-39	34 (39.5)	73 (33.6)	-	-
40-44	13 (15.1)	47 (21.7)	-	-
≥45	17 (19.8)	40 (18.4)	-	-
Religion, n (%)				
Islam	83 (96.5)	207 (95.4)	-	1.000
Hindu	3 (3.5)	10 (4.6)	-	-
Marital status, n (%)				
Married	60 (69.8)	148 (68.2)	$\chi^2(3) = 0.56$	0.905
Unmarried	10 (11.6)	25 (11.5)	-	-
Widowed	9 (10.5)	29 (13.4)	-	-
Divorced	7 (8.1)	15 (6.9)	-	-
Educational qualification, n (%)				
Illiterate	5 (5.8)	21 (9.7)	$\chi^2(6) = 5.83$	0.443
Primary incomplete	16 (18.6)	42 (19.4)	-	-
Primary completed	24 (27.9)	57 (26.3)	-	-

Secondary	12 (14.0)	39 (18.0)	-	-
Higher secondary completed	18 (20.9)	31 (14.3)	-	-
Graduate	10 (11.6)	18 (8.3)	-	-
Completed master's degree	1 (1.2)	9 (4.1)	-	-
Residence, n (%)				
Urban	29 (33.7)	65 (30.0)	$\chi^2(1) = 0.41$	0.523
Rural	57 (66.3)	152 (70.0)	-	-
Occupation, n (%)				
Housewife	37 (43.0)	96 (44.2)	$\chi^2(2) = 0.30$	0.860
Working woman	34 (39.5)	79 (36.4)	-	-
Other	15 (17.4)	42 (19.4)	-	-
Monthly income group (BDT), n (%)				
≤21,500	31 (36.0)	81 (37.3)	$\chi^2(1) = 0.04$	0.835
>21,500	55 (64.0)	136 (62.7)	-	-
Age, mean ± SD (years)	38.3 ± 6.8	38.5 ± 6.4	t(148.0) = -0.34	0.734
Monthly income, mean ± SD (BDT)	23,918.6 ± 5,935.4	24,248.8 ± 6,139.8	t(161.0) = -0.43	0.666

TABLE 6: Association of sociodemographic characteristics with attitude category (N = 303)

Analysis restricted to 303 women who had heard of cervical cancer. Percentages are calculated within the sufficient-attitude group (n = 86) and insufficient-attitude group (n = 217).

All percentages are column percentages. Pearson chi-square tests were used for categorical characteristics except religion (two-sided Fisher's exact test, because one expected cell was below five). Continuous age and monthly income were compared using independent-samples Welch t-tests. Tests were two-sided and unadjusted for multiple comparisons.

BDT: Bangladeshi taka

The mean age was 38.3 ± 6.8 years in the sufficient-attitude group and 38.5 ± 6.4 years in the insufficient-attitude group (Welch t(148.0) = -0.34, p = 0.734). Mean monthly income was BDT 23,918.6 ± 5,935.4 and BDT 24,248.8 ± 6,139.8, respectively (Welch t(161.0) = -0.43, p = 0.666). Neither continuous measure differed significantly between the groups (Table *6*).

Discussion

Cervical cancer remains a major public health concern among women in low- and middle-income countries, despite being largely preventable through effective screening and early treatment of precancerous lesions. The present study assessed awareness of cervical cancer and attitudes towards cervical cancer screening among women attending the Gynaecology Outpatient Department of Dhaka Medical College Hospital.

In the current study, the mean age of the respondents was 38.3 ± 6.3 years, with the largest proportion (36.7%) belonging to the 35- to 39-year-old age group. This finding is comparable to studies conducted in Bangladesh and other South Asian countries, where women attending reproductive health services were predominantly in their late thirties and early forties [12,13]. Women in this age group are particularly important targets for cervical cancer screening because the risk of developing precancerous cervical lesions increases with age.

The study found that 87.6% of respondents had heard about cervical cancer. This level of awareness is higher than that reported in several community-based studies conducted in Bangladesh, where awareness was 71.7% [9]. The relatively higher awareness observed in the present study may be attributed to the hospital-based setting, where women are more likely to receive health information from healthcare providers and media sources.

Awareness regarding symptoms of cervical cancer was inconsistent among respondents. In our study, vaginal infection was identified by 173 respondents (57.1%), abnormal vaginal discharge by 157 (51.8%), and

unusual vaginal bleeding by 129 (42.6%). Pain after intercourse and growth in the cervix or uterus were each identified by 86 respondents (28.4%). Similar findings were reported by [14], who observed that women were generally aware of common gynaecological symptoms but had limited understanding of specific signs suggestive of cervical malignancy. Insufficient awareness of symptoms may contribute to delays in seeking medical care and ultimately lead to late-stage diagnosis.

Regarding risk factors, approximately three-fourths of respondents identified multiple sexual partners and oral contraceptive pill use as risk factors, while awareness of HPV infection was remarkably low (28.4%). This finding is concerning because persistent infection with high-risk HPV is recognised as the principal cause of cervical cancer worldwide [15]. Low levels of HPV-related knowledge have also been reported among adolescent girls in Dhaka, Bangladesh [16]. In the present study, although 87.6% of participants had heard of cervical cancer, important gaps remained in domain-specific knowledge. Because exposure to awareness campaigns was not assessed, these findings cannot establish whether such campaigns were effective. The lack of awareness about HPV may hinder the acceptance of preventive measures such as HPV vaccination and regular screening.

The findings further showed that 71.3% of respondents knew that cervical cancer could be detected through screening, and VIA was more commonly recognised than the Pap smear. This observation is consistent with the national cervical cancer screening strategy in Bangladesh, where VIA is the primary screening tool available at public health facilities [17]. Increased recognition of VIA may therefore reflect the growing visibility of government screening programmes. However, awareness of precancerous lesions was extremely low, with only 33.0% of respondents reporting awareness of this condition. This suggests that most women remain unaware that cervical cancer develops gradually and can be prevented through the early detection and treatment of precancerous changes.

Assessment of overall awareness levels demonstrated that more than half of the respondents had poor awareness regarding cervical cancer symptoms and risk factors. Similar findings have been reported by Alam et al. [18], who found substantial gaps in awareness among Bangladeshi women despite relatively high levels of general awareness [18]. These results indicate that awareness campaigns may have succeeded in introducing the concept of cervical cancer but have not adequately communicated detailed information regarding prevention, risk factors and early detection.

A statistically significant association was observed between age group and awareness level ($p = 0.048$). In contrast, occupation was not significantly associated with awareness ($p = 0.295$), nor were education, religion, marital status, residence, or economic status. Women aged 40-44 years tended to demonstrate better awareness compared to younger participants. This may be because older women have greater exposure to healthcare services and reproductive health counselling. However, no significant associations were found between awareness and educational status, marital status, residence, religion, or economic status. Similar findings have been reported in some regional studies where awareness was influenced more by healthcare exposure than by socioeconomic characteristics alone [19].

The study also revealed that 71.6% of respondents had an insufficient attitude towards cervical cancer screening. Despite being aware of cervical cancer, many women remained hesitant regarding screening practices. This finding is consistent with studies conducted in other developing countries where fear, embarrassment, perceived absence of symptoms and misconceptions about screening procedures were identified as barriers to screening uptake [9].

Women with sufficient attitude scores demonstrated significantly greater willingness to recommend VIA screening, undergo future screening and encourage other women to participate. A single self-perceived-risk item does not constitute a full assessment of the Health Belief Model, and non-significant demographic tests do not prove that unmeasured psychosocial variables are stronger determinants. The age-group finding ($p = 0.048$) should be interpreted cautiously because multiple comparisons were unadjusted. They were also more likely to perceive themselves as being at risk of cervical cancer [20]. Women who understand their risk and appreciate the benefits of screening are more likely to participate in screening programmes and advocate for them within their communities.

Interestingly, none of the sociodemographic characteristics was significantly associated with attitude levels. This finding suggests that attitudes towards screening may be shaped more by personal beliefs, cultural perceptions, health literacy and previous healthcare experiences than by demographic factors alone. Similar observations have been reported by studies in Nepal and India, where psychosocial factors were found to be stronger determinants of screening attitudes than age, education, or income [21,22].

Overall, the findings of this study highlight an important gap between awareness and attitude. Although most women had heard of cervical cancer and were aware of the existence of screening methods, detailed awareness regarding HPV infection, precancerous lesions and appropriate treatment options remained poor. Furthermore, the predominance of insufficient attitudes towards screening indicates that awareness alone is not enough to ensure participation in preventive services. Strengthening educational interventions, promoting risk perception and expanding access to culturally appropriate screening information are

essential to improve cervical cancer prevention efforts among Bangladeshi women.

Limitations

The study was conducted in a single tertiary care hospital; therefore, the findings may not be generalisable to all women in Bangladesh. The cross-sectional design limits the ability to establish causal relationships between awareness, attitudes and sociodemographic factors. Women attending a Gynaecology Outpatient Department may have greater healthcare exposure than the general population, potentially overestimating awareness levels.

Conclusions

The study found that although the majority of women attending the Gynaecology Outpatient Department of Dhaka Medical College Hospital were aware of the term cervical cancer, their overall awareness of the disease was not satisfactory. Among women who had heard of cervical cancer, awareness level was associated with age group but not with occupation or the other sociodemographic factors examined. Awareness regarding symptoms, risk factors, screening methods, HPV infection, precancerous lesions and available treatment options remained limited among many respondents. Age group was associated with awareness level, whereas occupation was not. The findings also revealed that most respondents had an insufficient attitude towards cervical cancer screening. Despite this, many women expressed a willingness to undergo VIA screening and recommend it to others when informed about its benefits and their potential risk of cervical cancer. The study highlights the need for health education programmes focusing on cervical cancer prevention, early detection and the importance of regular screening to be enhanced.

Comprehensive health education programmes should be implemented to improve women's awareness regarding cervical cancer symptoms, risk factors, HPV infection, precancerous lesions and available screening methods. Future community-level studies with larger sample sizes should be conducted across Bangladesh to improve the generalisability of findings.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

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