

Knowledge, attitude, and practice of reproductive age women towards cervical cancer prevention at Edward Francis Small Teaching Hospital, Banjul

Abstract

Background: Cervical cancer (CC) remains a significant public health concern affecting women globally, with an estimated 604,000 new cases and 342,000 deaths reported in 2020. It ranks as the fourth most prevalent cancer and the fourth leading cause of cancer-related mortality among women.

Methods: A cross-sectional study was conducted at the Gynecology Clinic of Edward Francis Small Teaching Hospital (EFSTH). Participants were selected through a single-stage cluster sampling technique. The sample size was calculated using Epi Info version 7.2.5, and data were entered, cleaned, and analyzed using SPSS version 20. Statistical significance was set at $p < 0.05$.

Results: A total of 362 reproductive-age women participated. The majority 336 (92.8%) exhibited poor knowledge of cervical cancer. While 290 (80%) of the respondents had a positive attitude toward prevention, 292 (80.7%) demonstrated poor practice, as they had never undergone screening. Only 70 (19.3%) had been screened at least once. Educational status ($p = 0.00$, $V = 0.4$) and religion ($p = 0.04$, $V = 0.1$) were associated with good knowledge levels. Additional associations were observed between sociodemographic variables and attitudes or practices, although screening uptake remained generally low.

Conclusion: There is a clear disparity between the positive attitude toward cervical cancer prevention and the actual preventive practices among women in The Gambia. Strengthening education and improving access to screening are essential to reduce the burden of cervical cancer in The Gambia.

Keywords: attitude, cervical cancer, knowledge, practice, prevention, screening, The Gambia

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Introduction

Cervical cancer (CC) remains a significant public health concern, particularly in low- and middle-income countries (LMICs). Globally, it is the fourth most common cancer and the fourth leading cause of cancer-related deaths in women, accounting for approximately 604,000 new cases and 342,000 deaths in 2020.^{1,2} Over 90% of these cases and deaths occurred in LMICs, largely due to inadequate access to prevention, screening, and treatment services.¹ In The Gambia, the burden is especially high. According to the 2021 HPV and related cancers fact sheet, an estimated 286 women are diagnosed with CC annually, and 199 succumb to the disease. CC is the leading cancer among Gambian women, particularly those aged 15 to 44 years.³

The crude incidence rate of CC in The Gambia was reported at 23.5 per 100,000 women in 2021, with a mortality rate of 16.3 per 100,000.³ The age-standardized incidence rate was 42.9 per 100,000 women, and the cumulative lifetime risk of developing CC was estimated at 3.9%.^{1,3,4} Alarmingly, only 9% of Gambian women were screened between 2014 and 2019, with just 11% ever having been screened as of 2019.⁴ Several risk factors contribute to the development of CC, including behavioral (e.g., smoking, obesity), sexual and reproductive factors (e.g., early marriage, early coitarche, multiple sexual partners, use of oral contraceptives), infections such as HPV, herpes simplex virus, and HIV, as well as poor dietary habits and genetic predispositions.⁵⁻⁸

HPV is identified as the primary etiological agent in nearly all cervical malignancies, making it the only human cancer with a well-

established cause.¹⁰ Though CC is largely preventable and treatable, it remains a leading cause of cancer deaths in LMICs due to limited awareness and access to early detection services. Common symptoms in the symptomatic phase include pelvic pain, dyspareunia, abnormal vaginal bleeding, and foul-smelling discharge.⁹ In contrast to many high-income countries, where robust screening programs and HPV vaccination have drastically reduced CC incidence,¹¹ The Gambia continues to struggle with late-stage presentations and poor outcomes.

The Gambian strategic plan for CC prevention and control (2016–2020) introduced HPV vaccines—Gardasil, Gardasil 9, and Cervarix—for girls aged 9–13 through school-based and community outreach programs, aiming for 90% coverage by 2020.¹² For secondary prevention, cytology-based screening targets women aged 20 to 80 years. However, as of 2021, there were no guidelines for early symptom detection at the primary healthcare level, although a structured referral pathway exists.¹² Available screening modalities include Papanicolaou (Pap) smears, HPV DNA tests, and visual inspection with acetic acid (VIA).¹² Nevertheless, awareness and uptake remain low, hindering the effectiveness of these interventions.¹³⁻¹⁵ Most Gambian CC cases present at advanced stages, when treatment options are limited and more costly.¹⁶

Management options in The Gambia include pathology services, cancer surgery, and chemotherapy, but radiotherapy remains unavailable.⁴ Studies within and outside the country reveal a general lack of awareness regarding HPV, CC screening, and vaccination.^{10,13,16-20} This lack of awareness, especially among

reproductive-aged women, may contribute to delayed presentation and poor outcomes.

This study was conducted among women of reproductive age (15–49 years) at Edward Francis Small Teaching Hospital (EFSTH), Banjul, to assess their knowledge, attitude, and practice regarding cervical cancer prevention. The findings aim to inform targeted interventions, raise awareness, and enhance the uptake of available preventive services in The Gambia.

Methodology

Study design

A cross-sectional study was conducted at the Gynecology Clinic of Edward Francis Small Teaching Hospital (EFSTH), Banjul, from 14th November 2022 to 20th January 2023. Data were collected using an interviewer-administered structured questionnaire targeting women of reproductive age (15–49 years) attending the clinic during the study period.

Study population and setting

The study included all women aged 15–49 years attending EFSTH's gynecology clinic, either for first-time or follow-up consultations. EFSTH, located in Banjul, is The Gambia's national referral hospital and serves as the country's main cervical cancer screening center.

Eligibility criteria

Inclusion: Women aged 15–49 years who visited the clinic during the study period.

Exclusion: Women with known mental illness, critically ill individuals, and those who declined participation after being informed of the study's objectives.

Sample size and sampling technique

A sample size of 362 was calculated using Epi Info™ version 7.2.5.0 based on a hypothetical clinic population of 6,061 women (average monthly attendance from January to October 2022), at a 95% confidence level and 5% margin of error. Participants were selected using single-stage cluster sampling, a probability-based method.

Data collection

A structured questionnaire adapted from a similar study (49) was used. It was written in English and covered socio-demographics, knowledge of cervical cancer symptoms and risk factors, awareness of prevention and treatment services, attitudes and practices regarding screening, and barriers to screening. Reliability was evaluated using Cronbach's alpha.

Pretesting and quality control

Pretesting was conducted with 18 women (5% of the sample) one week prior to data collection to ensure clarity and consistency. These responses were excluded from the final analysis. Reliability was considered acceptable at Cronbach's alpha > 0.7.

Operational definitions

- Cervical cancer:** Uncontrolled cell growth at the cervix.²¹
- Cancer screening:** Procedures aimed at detecting abnormal cervical cells.²¹
- Knowledge:** Assessed via "Yes/No" questions; correct answers scored 1, incorrect scored 0. Scores were classified as good (80–100%), satisfactory (50–79%), or poor (<50%).¹³

d. Attitude: Measured using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Scores above the mean indicated a positive attitude; below the mean indicated negative attitude.¹⁵

e. Practice: Defined as *good* if the respondent had ever been screened, and *poor* if never screened.²¹

Data processing and analysis

Data were entered and analyzed using SPSS version 20. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarized sample characteristics. Associations between socio-demographic variables and outcomes (knowledge, attitude, and practice) were tested using Chi-square tests (significance at $p \leq 0.05$), with Phi and Cramer's V used for effect size measurement. Microsoft Excel was used to generate graphs and charts for selected variables.

Ethical considerations

Ethical approval was obtained from the EFSTH Research and Publication Committee. Written informed consent was secured from each participant following explanation of the study's aim. Confidentiality and anonymity were ensured, and participants were informed of their right to withdraw at any time without consequence.

Results

Socio-demographic characteristics of respondents

A total of 362 women participated (mean age 31.2 ± 8.29 years, range 16–49); 34.0% were aged 36–49. Most were Muslims (92.5%), married (79.6%), and urban residents (95.0%). Educational levels varied: 45.3% had high school education, 18.8% had a diploma/degree, and 27.9% had no formal education. Most had 0–3 children (79.6%). Employment included self-employed (34.0%), housewives (28.2%), and private employees (13.2%) (Table 1).

Table 1 Distribution of the respondents by sociodemographic characteristics, EFSTH. November 2022 to January 2023. n=362

Socio-demographic characteristics	Frequency	Percent (%)
Age		
15 to 25	120	33.1
26 to 35	119	32.9
36 to 49	123	34
Religion		
Muslim	335	92.5
Christian	27	7.5
Marital Status		
Single	65	18
Married	288	79.6
Divorced	7	1.9
Separated	1	0.3
Widowed	1	0.3
Educational Status		
None	24	6.6
Quranic	77	21.3
Primary	29	8
Secondary	164	45.3
Undergraduate	54	14.9
Postgraduate	13	3.6
Diploma	1	0.3
Residence		
Rural	18	5

Table 1 Continued...

Urban	344	95
Number of Children		
0 to 3	288	79.6
4 to 7	65	18
8 and above	9	2.5
Occupation		
Housewife	102	28.2
Student	44	12.1
Private employed	48	13.2
Government employed	38	10.5
Self employed	123	34
Unemployed	7	2

Knowledge of cervical cancer, its screening, and treatment

“Overall, the majority of respondents (92.8%) demonstrated poor knowledge of cervical cancer, with only 0.6% exhibiting good knowledge.” This emphasizes the poor knowledge clearly. Awareness of HPV as a cause was low (6.4%), and most were unaware of risk factors, symptoms, and prevention methods. While 60.5% had heard of screening, few knew the methods (8.3%) or recommended intervals (12.2%). Awareness of HPV vaccination (6.4%) and treatment options (15.5%) was also limited, highlighting significant gaps in knowledge (Table 2).

Table 2 Composite distribution of respondent's knowledge about cervical cancer and its screening, EFSTH November 2022 to January 2023. n=362

Knowledge of Cervical Cancer	Response n (%)	
Level of knowledge	Frequency	Percent (%)
Good	2	0.6
Satisfactory	24	6.6
Poor	336	92.8
Knowledge regarding the cause of cervical cancer (CC):	Frequency	Percent (%)
Contaminated food and water	1	0.3
Bacteria	8	2.2
Human papilloma virus	23	6.4
Do not know	330	91.2
Good knowledge	23	6.4
Poor knowledge	339	93.6
Knowledge related to the risk factors for CC:	Yes	No
Know about risk factors	95 (26.2%)	267 (73.8%)
Multiple sex partners	61 (16.9%)	301 (83.1%)
Infection with HPV	35 (9.7%)	327 (90.3%)
Early sexual intercourse	44 (12.2%)	318 (87.8%)
Early marriage	48 (13.3%)	314 (86.7%)
Cigarette smoking	54 (14.9%)	308 (85.1%)
Long term OCP use	27 (7.5%)	335 (92.5%)
Knowledge related to the symptoms of CC:	Yes	No
Know about symptoms	80 (22.1%)	282 (77.9%)
Post-menopausal bleeding	31 (8.6%)	331 (91.4%)
Vaginal bleeding	61 (16.9%)	301 (83.1%)
Unexplained weight loss	40 (11.0%)	322 (89.0%)
Foul smelling vaginal discharge	57 (15.7%)	305 (84.3%)
Pain during sex	46 (12.7%)	316 (87.3%)

Knowledge related to the prevention of CC:	Yes	No
Know about prevention	172 (47.5%)	190 (52.5%)
Use of condom during sex	49 (13.5%)	313 (86.5%)
Vaccine for HPV	30 (8.3%)	332 (91.7%)
Avoid cigarette smoking	54 (14.9%)	307 (84.8%)
Delaying the age of first sexual contact	27 (7.5%)	335 (92.5%)
Limiting the number of sexual partners	40 (11.0%)	322 (89%)
Avoiding sexual intercourse with people who have had many partners	17 (4.7%)	345 (95.3%)
Abstaining from sexual intercourse	21 (5.8%)	341 (94.2%)
Knowledge of CC screening	Yes	No
Know what is meant by CC screening	219 (60.5%)	143 (39.5%)
Availability of screening service	159 (43.9%)	203 (56.1%)
Know the test procedure	30 (8.3%)	332 (91.7%)
Knowledge related to screening eligibility	Yes	No
Women 30 years and above	38 (10.5%)	324 (89.5%)
18 years	89 (24.6%)	273 (75.4%)
25 years	48 (13.3%)	314 (86.7%)
Knowledge related to screening interval	Yes	No
Every year	125 (34.5%)	237 (65.5%)
Every three years	44 (12.2%)	318 (87.8%)
Every five years	16 (4.4%)	346 (95.6%)
Do not know	177 (48.9%)	185 (51.1%)
Knowledge about HPV vaccine availability	Yes	No
Availability of HPV vaccine	66 (18.2%)	296 (81.8%)
Knowledge about HPV vaccine eligibility	Yes	No
9 – 13 years	23 (6.4%)	339 (93.6%)
15 years	13 (3.6%)	349 (96.4%)
25 years	19 (5.2%)	343 (94.8%)
Do not know	307 (84.8%)	55 (15.2%)
Knowledge related to the treatment of CC	Yes	No
Chemotherapy	29 (8.0%)	333 (92.0%)
Radiotherapy	9 (2.5%)	353 (97.5%)
Surgery	56 (15.5%)	306 (84.5%)
Do not know	292 (80.7%)	70 (19.3%)

Attitude towards cervical cancer prevention

Respondents were assessed using eight questions, yielding a mean score of 6.1 (± SD 1.94). Those scoring below the mean (72; 20.0%) were considered to have a negative attitude, while the majority (290; 80.0%) had a positive attitude. Most respondents (193; 53.3%) strongly agreed that cervical cancer is a major health problem in The Gambia. A large proportion (280; 77.3%) strongly agreed that screening is vital for prevention. Additionally, 73.2% strongly agreed that any woman, including themselves, could develop cervical cancer, and 96.4% were willing to undergo screening (Table 3).

Practice of cervical cancer screening

A significant majority 292(80.7%) of respondents had never been screened for cervical cancer. While 163(45.0%) had undergone screening for other reproductive health issues such as HIV and STIs, only 70(19.3%) had ever been screened for cervical cancer. Among those screened, most did so at public health facilities, and

the screening was mainly prompted by a doctor's recommendation, followed by self-initiation and community or peer influence (Table 4).

Table 3 Distribution of respondent's attitude of cervical cancer, EFSTH November 2022 to January 2023. n=362

Variable	Frequency	Percent (%)
Cervical cancer is highly prevalent in the Gambia		
Strongly agree	193	53.3
Agree	53	14.6
Neither agree nor disagree	109	30.1
Disagree	4	1.1
Strongly disagree	3	0.8
Cervical cancer is the leading cause of death among all other malignancies in the Gambia		
Strongly agree	197	54.4
Agree	41	11.3
Neither agree nor disagree	117	32.3
Disagree	6	1.7
Strongly disagree	1	0.3
Any adult woman including you can acquire cervical cancer		
Strongly agree	265	73.2
Agree	44	12.2
Neither agree nor disagree	42	11.6
Disagree	8	2.2
Strongly disagree	3	0.8
Cervical cancer cannot be transmitted from one person to another		
Strongly agree	164	45.3
Agree	28	7.7
Neither agree nor disagree	136	37.6
Disagree	20	5.5
Strongly disagree	14	3.9
Screening helps in the prevention of cervical cancer		
Strongly agree	280	77.3
Agree	49	13.5
Neither agree nor disagree	28	7.7
Disagree	4	1.1
Strongly disagree	1	0.3
Screening causes no harm to the client		
Strongly agree	223	61.6
Agree	28	7.7
Neither agree nor disagree	95	26.2
Disagree	12	3.3
Strongly disagree	4	1.1
Cervical cancer screening is not expensive		
Strongly agree	245	67.7
Agree	31	8.6
Neither agree nor disagree	59	16.3
Disagree	10	2.8
Strongly disagree	17	4.7
If screening is free and causes no harm, will you screen		
Yes	349	96.4
No	13	3.6
Overall Attitude		
Negative	72	20
Positive	290	80

Table 4 Distribution of respondent's response of practice towards cervical cancer screening, EFSTH November 2022 to January 2023. n=362

Variable	Frequency	Percentage (%)
Have you ever been screened for reproductive health services like HIV/STI		
Yes	163	45
No	199	55
Have you ever been screened for cervical cancer		
Yes	70	19.3
No	292	80.7
Where did you screen		
Private health facility	32	8.8
Public health facility	38	10.5
None	292	80.7
How many times did you screen		
One	50	13.8
More than one	20	5.5
None	292	80.7
Who initiated your screening		
Doctor's request	43	11.9
Self-initiated	23	6.3
Mass screening	4	1.1
None	292	80.7
Overall practice towards cervical cancer screening		
Poor	292	80.7
Good	70	19.3

Barriers to cervical cancer screening

The main reasons mentioned by the respondents as to why they have not been screened for cervical cancer were lack of information 212 (58.6%), never been told to screen 256(70.7%), the anticipation of a painful procedure 10 (2.8%) and not knowing where to screen 8 (2.2%) (Figure 1).

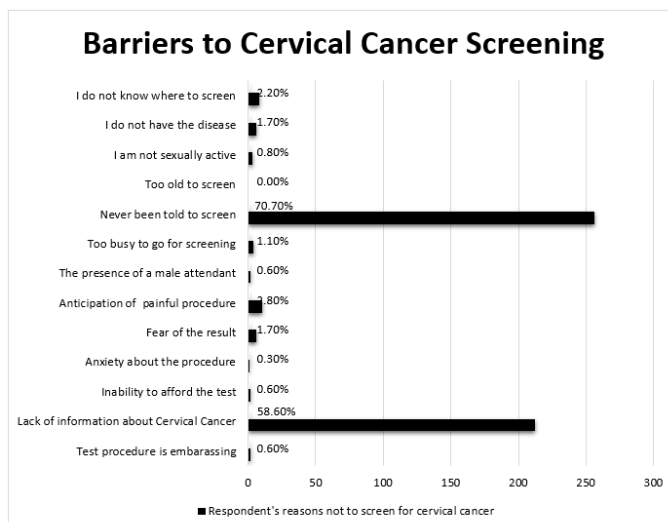


Figure 1 Distribution of respondent's barriers to cervical cancer screening, EFSTH November 2022 to January 2023. n=362.

Note: Percent exceeds 100% because of multiple responses.

Factors associated with knowledge of cervical cancer screening

Educational status and religion were significantly associated with

knowledge of cervical cancer screening, with education showing a moderate (Cramer's $V = 0.4$) and religion a weak (Cramer's $V = 0.1$) relationship ($p < 0.05$) (Table 5).

Table 5 Relationship between level of knowledge and sociodemographic characteristics, EFSTH November 2022 to January 2023. $n=362$

Socio-demographic characteristics	Level of knowledge	
	X ²	V
Age	0.07	0.11
Religion	0.04	0.13
Tribe	0.26	0.25
Marital status	0.97	0.54
Educational status	0	0.39
Residence	0.99	0.18
Number of children	0.86	0.42
Occupation	0.74	0.26

Factors associated with the attitude towards cervical cancer screening

The study found significant associations ($p < 0.05$) between women's attitudes toward cervical cancer screening and age, education, marital status, number of children, and occupation. Age and education showed weak associations ($V = 0.2$), marital status and number of children had moderate associations ($V = 0.3$), while occupation had the strongest association ($V = 0.4$) (Table 6).

Table 6 Relationship between attitude and socio-demographic characteristics, EFSTH November 2022 to January 2023. $n=362$

Socio-demographic characteristics	Attitude	
	X ²	V
Age	0.01	0.2
Religion	0.85	0.1
Tribe	0.89	0.19
Marital status	0	0.26
Educational status	0.01	0.21
Residence	0.79	0.13
Number of children	0.001	0.28
Occupation	0	0.41

Factors associated with practice towards cervical cancer screening

Age, marital status, number of children, and occupation were significantly associated with cervical cancer screening practices ($p < 0.05$). Marital status showed a weak association ($V = 0.2$), while the others had moderate associations ($V = 0.3$), indicating that socio-demographic factors influence screening practices (Table 7).

Table 7 Relationship between Socio-demographic characteristics and practice of cervical cancer screening, EFSTH November 2022 to January 2023. $n=362$

Socio-demographic characteristics	Practice	
	X ²	V
Age	0	0.32
Religion	0.15	0.07
Tribe	0.11	0.28
Marital status	0.04	0.16
Educational status	0.1	0.17
Residence	0.75	0.02
Number of children	0	0.31
Occupation	0.01	0.3

Relationship between attitude and practice and level of knowledge of cervical cancer

Knowledge of cervical cancer was significantly associated with women's attitude ($p = 0.03$, $V = 0.14$) and practice ($p = 0.01$, $V = 0.20$), though the relationships were weak. This suggests that knowledge influences attitude and practice, but not strongly (Table 8).

Table 8 Relationship between attitude and practice and the level of knowledge, EFSTH November 2022 to January 2023. $n=362$

	Level of knowledge	
	X ²	V
Attitude	0.03	0.14
Practice	0.01	0.2

Discussion

Cervical cancer continues to be a major public health issue globally, especially in low- and middle-income countries where access to preventive services is limited. In The Gambia, cervical cancer is the leading cause of cancer-related deaths among women, highlighting the urgency of implementing effective prevention strategies.³ Understanding the knowledge, attitude, and practice (KAP) of women regarding cervical cancer prevention is essential to reducing morbidity and mortality. This study, conducted among women of reproductive age attending the gynecology clinic at Edward Francis Small Teaching Hospital (EFSTH), offers critical insights into the current state of cervical cancer awareness and prevention in the country.

As shown in Table 2, only 7.2% of respondents had adequate knowledge of cervical cancer, revealing a substantial gap. This result is consistent with studies from similar low-resource settings. For instance, a study in India reported that 11% of women had sufficient knowledge of cervical cancer,²² while only 4.8% of women were knowledgeable in a Nigerian study.²³ These findings underscore the widespread lack of awareness and the need for intensified educational campaigns. Alarming, as indicated in Table 2, 93.6% of respondents in this study did not know that Human Papillomavirus (HPV) is the primary cause of cervical cancer. This mirrors findings in Northwest Ethiopia, where many women were similarly unaware of the link between HPV and cervical cancer.²⁴ Since HPV is preventable through vaccination and screening, this lack of knowledge could negatively affect the uptake of preventive measures.

In terms of perceived risk factors, the most frequently cited by participants were multiple sexual partners (16.9%), cigarette smoking (14.9%), early marriage (13.3%), and early sexual initiation (12.2%)—as presented in Table 2. These perceptions align with studies conducted in Bangladesh²⁵ and Ethiopia,²¹ where similar risk factors were identified. While the percentages may be relatively low, they reflect a foundational awareness that could be strengthened through targeted health education initiatives. Socio-cultural differences and exposure to health information likely account for variations in awareness across regions.

The attitude of respondents toward cervical cancer prevention was notably positive. As shown in Table 3, a large majority (80%) expressed favorable attitudes, with 77.3% agreeing that screening is essential for prevention. Furthermore, Table 3 shows that 96.4% indicated a willingness to undergo screening if the procedure was free and painless. These encouraging results are in line with findings from Nigeria, Southern Ethiopia, Zambia, and Zimbabwe,^{21,26–30} suggesting that women are generally open to screening when barriers

are minimized. This willingness presents a valuable opportunity for public health authorities to design accessible and acceptable screening services.

Despite the positive attitudes, Table 4 shows that only 19.3% of respondents had undergone cervical cancer screening. This figure, while higher than the 5.8% reported in Zimbabwe and similar to low rates in Southern Ethiopia,^{21,28} remains inadequate. The discrepancy between attitude and practice suggests that external barriers may prevent women from acting on their intentions. These include systemic and informational obstacles that hinder access to screening services.

Key barriers identified by respondents included a lack of information (58.6%), never being advised to undergo screening (70.7%), fear of pain during the procedure (2.8%), and lack of knowledge about where to access screening (2.2%)—as detailed in Figure 1. These barriers are consistent with those reported in studies from India, Nigeria, Ghana, and Uganda.^{31–34} Addressing these issues requires a multifaceted approach that includes community outreach, healthcare provider training, and improved service delivery infrastructure.

Socio-demographic factors were found to be significantly associated with KAP toward cervical cancer prevention. As shown in Table 5, educational level and religion were associated with knowledge, with women who attained higher education showing better understanding—similar to findings from other studies.^{22,23} Attitude was influenced by age, educational status, marital status, number of children, and occupation, also reflected in Table 6. These associations have also been reported in earlier research, where older women and those with formal education or employment tended to have more positive health attitudes.^{21,29} Practice was significantly associated with age, marital status, number of children, and occupation—again as demonstrated in Table 7—suggesting that social responsibilities and life experiences may influence women's health-seeking behaviors.

In summary, this study highlights significant gaps in knowledge and practice regarding cervical cancer prevention, despite positive attitudes. Public health interventions should focus on enhancing awareness of HPV and the benefits of early screening. Efforts should also aim to eliminate structural and informational barriers to screening. Strengthening community education, improving communication from healthcare providers, and integrating screening into routine gynecological care are essential next steps to reduce the burden of cervical cancer in The Gambia.^{35–63}

Conclusion

In conclusion, while there is a positive attitude toward cervical cancer prevention among women in The Gambia, the lack of adequate knowledge and low practice rates indicate the need for urgent public health interventions. By addressing the socio-demographic factors influencing knowledge, attitude, and practice, and improving access to information and screening services, it is possible to enhance cervical cancer prevention in The Gambia and reduce the burden of this preventable disease. Future studies should explore the underlying reasons for the low practice rates and examine the effectiveness of different intervention strategies in increasing screening uptake.

Acknowledgments

None.

Study limitations

This study was limited to women of reproductive age attending the Gynecology Clinic at Edward Francis Small Teaching Hospital, which may not fully represent the broader population of women aged

15 years and above in The Gambia (estimated at 670,131 in 2021) who are at risk for cervical cancer. Additionally, its limited geographic and temporal scope may not capture regional or seasonal differences in awareness and screening behavior.

Availability of data and material: The datasets generated and/or analyzed during this study are available and can be shared on reasonable request. The corresponding author can be contacted for the data if required.

Author contributions

PMO collected the data and wrote the first draft of the manuscript. TO supervised data collection, guided the data analysis, and oversaw the compilation of the final output. MA critically reviewed the draft and provided editorial corrections.

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Conflicts of interest

The authors declare no conflict of interest.

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