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Knowledge, Attitude, Practice, and Correlates of Cervical Cancer Screening Uptake among Female Health Workers in Nigeria

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Abstract

Cervical cancer remains a leading cause of cancer death among Nigerian women despite being largely preventable through early screening. Female health workers occupy an influential position in promoting screening uptake in the wider population, yet the extent to which their own knowledge, attitude, and screening practice align with this role is not well characterised. This study assessed the knowledge, attitude, and practice (KAP) of cervical cancer screening among female health workers in Nigeria and identified the sociodemographic and professional factors independently associated with screening uptake. A cross-sectional survey of 212 female health workers was analysed. A composite knowledge score (0–7) and attitude score (5–25, with negatively worded items reverse-scored) were constructed from structured questionnaire items. Practice was defined as ever having been screened for cervical cancer. Because both composite scores departed significantly from normality (Shapiro–Wilk $p < .001$), Mann-Whitney U tests were used to compare scores by screening status. Chi-square and Fisher's exact tests examined bivariate associations between sociodemographic/professional characteristics and screening uptake, and a multivariable logistic regression model identified independent predictors, adjusting simultaneously for age, marital status, religion, knowledge score, and attitude score. Most respondents (60.8%) demonstrated good knowledge and expressed strongly positive attitudes toward the importance of screening (92.9% agreement), yet only 48.1% had ever been screened themselves. A specific and actionable knowledge gap was identified: only 17.9% of respondents correctly identified the recommended screening

interval. The most frequently perceived barriers were inadequate knowledge (39.2%), fear of diagnosis (33.5%), and limited access to services (21.7%). After multivariable adjustment, religion (Muslim vs. non-Muslim: adjusted OR = 0.29, 95% CI [0.13, 0.64], p = .002) and knowledge score (adjusted OR = 1.44 per point, 95% CI [1.19, 1.75], p < .001) were the only independent predictors of screening uptake; professional cadre, educational qualification, and years of experience were not significant. Despite generally favourable knowledge and attitudes, screening uptake among Nigerian female health workers remains suboptimal, and is independently shaped by religion and knowledge rather than by professional characteristics. Targeted, culturally sensitive interventions that correct specific knowledge gaps and improve institutional screening access are needed to close this knowledge-practice gap and strengthen health workers' capacity to model screening uptake for the wider population.

Keywords: cervical cancer; screening; knowledge, attitude and practice; health workers; Nigeria; cross-sectional study.

Introduction

Background

Cervical cancer remains one of the most significant preventable cancers affecting women worldwide. Globally, an estimated 662,301 new cases and 348,874 deaths were attributed to cervical cancer in 2022, making it the fourth most commonly diagnosed cancer and the fourth leading cause of cancer death among women worldwide (Bray et al., 2024). The burden of this disease is markedly unequal: more than 85% of cervical cancer deaths occur in low- and middle-income countries, where organised screening programmes are limited or absent (World Health Organization, 2020). Within Africa, Nigeria carries the single largest share of the continent's cervical cancer burden, recording an estimated 13,676 new cases and 7,093 deaths in 2022 alone — more than any other African country (Zhou et al., 2026). Cervical cancer is the second most common cancer among Nigerian women after breast cancer, and it disproportionately affects women in their reproductive and economically productive years (Okolie et al., 2022).

Virtually all cases of cervical cancer are caused by persistent infection with high-risk human papillomavirus (HPV), which makes the disease unusual among major cancers in being both highly preventable and, when detected early through screening, highly treatable. The World Health Organization's Global Strategy to Accelerate the Elimination of Cervical Cancer, launched in 2020, set internationally agreed "90-70-90" targets to be achieved by 2030: 90% of girls fully vaccinated against HPV by age 15, 70% of women screened with a high-performance test by ages 35 and 45, and 90% of women with cervical disease receiving appropriate treatment (World Health Organization, 2020). Nigeria, however, remains far from these targets. The country lacks a nationally organised, population-based cervical cancer screening programme; existing services are largely opportunistic, unevenly distributed, and are estimated to have reached less than 9% of eligible Nigerian women (Okolie et al., 2022).

Health Workers as a Strategic Population for Cervical Cancer Screening

Female health workers occupy a uniquely influential position in efforts to close this screening gap. As trusted sources of medical information, health workers are expected not only

to counsel and refer patients for screening but also to model the health-seeking behaviour they promote (Okolie et al., 2022). Evidence from Lagos suggests that a physician's or nurse's personal recommendation is among the strongest drivers of a woman's decision to seek screening (Okolie et al., 2022), which means that a health worker's own knowledge, attitude, and screening practice can have a multiplier effect well beyond her individual health outcome. Yet a growing body of Nigerian research suggests that health workers themselves frequently exhibit a disconnect between what they know and believe about cervical cancer screening and whether they act on that knowledge for their own health (Okolie et al., 2021). Studies of Nigerian health workers have generally reported good knowledge and positive attitudes toward screening (Adejimi et al., 2026; Ogundipe et al., 2023), yet personal screening uptake often remains substantially lower than would be predicted from this favourable knowledge and attitude base (Okolie et al., 2021).

Rationale and Gap in the Literature

Existing Nigerian knowledge, attitude, and practice (KAP) studies of cervical cancer screening have predominantly focused on either the general population of women (Agboola & Bello, 2021) or on single professional cadres, such as nurses, in isolation (Okolie et al., 2021). Fewer studies have examined a professionally heterogeneous sample of female health workers spanning nurses, community health extension workers, laboratory scientists, doctors, and pharmacy staff within a single analytic framework that jointly tests sociodemographic and professional correlates of screening behaviour alongside knowledge and attitude. This distinction matters because the systematic review evidence suggests that the factors influencing screening practice do not act uniformly across professional groups or demographic strata, and that professional-level assumptions (for example, that clinical cadres such as doctors and nurses will show higher uptake than non-clinical cadres) are not always borne out empirically (Okolie et al., 2021). A clearer, quantitatively grounded picture of which specific factors independently predict screening uptake among Nigerian female health workers is therefore needed to inform targeted, rather than generic, workplace interventions.

Aim and Objectives

This study assessed the knowledge, attitude, and practice of cervical cancer screening among female health workers in Nigeria and identified the factors influencing their screening behaviour. The specific objectives were to:

1. Determine the level of knowledge about cervical cancer, its risk factors, and available screening methods among health workers.
2. Assess attitudes and beliefs regarding the importance and effectiveness of cervical cancer screening.
3. Determine the prevalence and frequency of cervical cancer screening uptake among health workers.
4. Identify barriers (personal, social, institutional) that prevent health workers from accessing or undergoing screening.
5. Analyse the relationship between selected sociodemographic and professional characteristics and screening behaviour.

Statistical Methods

Data from 212 female health workers were cleaned prior to analysis: free-text entries for educational qualification, professional cadre, and years of experience were standardised into coherent categories, and a single non-numeric religion category (n = 1) was merged into “Other.” A composite knowledge

score (0-7) was constructed from seven items covering awareness of cervical cancer, its cause, symptoms, screening methods, the recommended screening interval, and preventability; scores were categorised as good (≥80%), moderate (60-79%), or poor (<60%) of the maximum score, following the conventional cut-off used in comparable Nigerian knowledge, attitude, and practice (KAP) surveys (Ogundipe et al., 2023). A composite attitude score (5-25) was constructed from five Likert items, with negatively worded items (fear/anxiety and perceived cultural/religious discouragement) reverse-scored so that higher totals consistently reflect a more screening-favourable attitude; scores were categorised using the same percentage convention (positive ≥80%, neutral 60-79%, negative <60%). Practice was defined primarily as ever having been screened for cervical cancer (yes/no). Normality of the knowledge and attitude scores was assessed with the Shapiro-Wilk test; both departed significantly from normality ($p < .001$), so between-group comparisons of these scores used the Mann-Whitney U test. Associations between categorical sociodemographic/professional characteristics and screening uptake were tested with the chi-square test of independence (Fisher's exact test used for the 2×2 religion comparison). A multivariable logistic regression model was fitted to identify independent predictors of ever having been screened, adjusting simultaneously for age, marital status, religion, knowledge score, and attitude score. Multiple-response items (barriers and reasons for non-screening) were analysed as the percentage of respondents endorsing each option; because respondents could select more than one option, percentages sum to more than 100%. Statistical significance was set at $\alpha = .05$.

Sociodemographic and Professional Characteristics

Respondents were predominantly aged 35-44 years (32.5%) and 25-34 years (27.8%), with 26.4% under 25 years. The majority were married (59.0%), of the Islamic faith (72.2%), and held a Diploma/HND-level qualification (48.1%) or Bachelor's degree (37.7%). Nurses/midwives constituted the largest professional cadre (41.0%), followed by Laboratory/Scientific staff and Community Health Extension Workers (CHEW; 15.6% each) and doctors (9.0%). Most respondents (57.1%) had fewer than 5 years of work experience (Table 1).

Table 1. Sociodemographic and professional characteristics of respondents (N = 212).

Characteristic	Category	N	%
Age (years)	<25	56	26.4
	25–34	59	27.8
	35–44	69	32.5
	45–54	21	9.9
	≥55	7	3.3
Marital status	Married	125	59.0
	Single	66	31.1
	Divorced/Separated	12	5.7
	Widowed	9	4.2
Religion	Islam	153	72.2
	Christianity	58	27.4
	Other	1	0.5
Education	Diploma/HND	102	48.1
	Bachelor's degree (BSc)	80	37.7
	Postgraduate/doctorate	24	11.3

Characteristic	Category	N	%
	Secondary school or below	2	0.9
Professional cadre	Nurse/Midwife	87	41.0
	Laboratory/Scientific staff	33	15.6
	CHEW	33	15.6
	Doctor	19	9.0
	Pharmacy staff	11	5.2
	Public health/records staff	8	3.8
	Other/unclear cadre	21	9.9
Years of experience	<5 years	121	57.1
	5–10 years	36	17.0
	11–15 years	23	10.8
	>15 years	23	10.8

Note. Percentages are of N = 212 and may not sum to 100% within a variable because of missing responses.

Knowledge of Cervical Cancer and Screening

Awareness of cervical cancer was high: 89.2% of respondents had heard of the disease, 82.1% were aware that screening methods exist, and 80.7% correctly identified it as preventable. However, knowledge was less consistent on specific technical points: 75.0% correctly identified human papillomavirus (HPV) as a cause, 84.9% identified at least one correct symptom, and 81.6% identified at least one correct screening method, but only 17.9% correctly identified the recommended screening interval (every 3 years), with the majority (44.3%) instead believing screening should occur every 6 months (Table 2).

Table 2. Individual knowledge items (N = 212).

Knowledge item	Correct/aware, n	%
Heard of cervical cancer	189	89.2
Correctly identified HPV as a cause	159	75.0
Identified ≥1 correct symptom	180	84.9
Aware that screening methods exist	174	82.1
Identified ≥1 correct screening method	173	81.6
Correctly identified screening interval (every 3 years)	38	17.9
Correctly identified cervical cancer as preventable	171	80.7

On the composite 0-7 knowledge score, the mean was 5.11 (SD = 1.77, median = 6). Using the conventional percentage cut-offs, 60.8% of respondents (n = 129) demonstrated good knowledge, 22.6% (n = 48) moderate knowledge, and 16.5% (n = 35) poor knowledge (Figure 1).

Objective 2: Attitudes and Perceptions

Attitudes toward the value of screening were strongly positive: 92.9% agreed or strongly agreed that screening is important for early detection, and 85.8% agreed or strongly agreed that it should be a routine part of health workers' own health checks. However, substantial ambivalence and perceived barriers were also evident: 54.2% agreed or strongly agreed that they feel anxious or fearful about undergoing screening themselves, 54.7% agreed or strongly agreed that cultural or religious beliefs

discourage women from screening, and only 35.8% agreed or strongly agreed that they personally perceive themselves to be at risk of developing cervical cancer, with 27.4% actively disagreeing with this statement (Table 3).

Table 3. Distribution of responses to attitude items (N = 212).

Attitude item	Strongly agree/Agree, n (%)	Neutral, n (%)	Disagree/Strongly disagree, n (%)
Screening is important for early detection	197 (92.9)	13 (6.1)	2 (0.9)
Should be routine part of health workers' checks	182 (85.8)	19 (9.0)	11 (5.2)
Feel anxious/fearful about undergoing screening	115 (54.2)	57 (26.9)	40 (18.9)
Cultural/religious beliefs discourage screening	116 (54.7)	33 (15.6)	63 (29.7)
Perceive self to be at risk of cervical cancer	76 (35.8)	58 (27.4)	78 (36.8)

On the composite 5–25 attitude score (with anxiety and perceived cultural discouragement reverse-scored), the mean was 17.11 (SD = 2.07, median = 17). Categorised using the same percentage convention, only 11.3% of respondents (n = 24) showed an overall positive attitude profile, the majority (79.7%, n = 169) fell into the neutral/moderate range, and 9.0% (n = 19) showed a negative attitude profile (Figure 1). This pattern — strong endorsement of screening's importance in the abstract, coupled with considerable personal anxiety, perceived cultural discouragement, and low perceived personal risk — indicates that favourable general beliefs about screening do not straightforwardly translate into a favourable personal attitude profile.

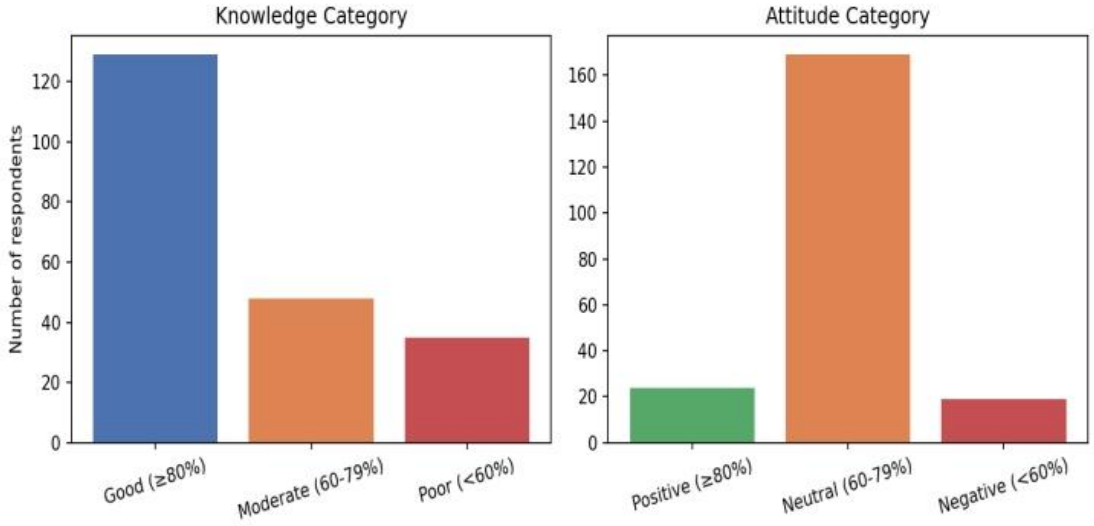


Figure 1. Distribution of knowledge and attitude categories among respondents (N = 212).

Prevalence and Frequency of Screening Uptake

Slightly under half of respondents (48.1%, n = 102) had ever been screened for cervical cancer, while 51.9% (n = 110) had never been screened. Among those screened, most (72.5%) had been screened only once, 22.5% had been screened 2-3 times and 2.9% more than 3 times. Screening was relatively recent for most: 66.7% had last been screened less than 1 year ago, 20.6% 1-3 years ago, and 10.8% more than 3 years ago. Pap smear was the most commonly used method (63.7%), followed by visual inspection with acetic acid (VIA; 12.7%) and HPV DNA testing (10.8%); 9.8% of screened respondents were unsure which method had been used (Table 4).

Table 4. Screening practice details among respondents ever screened (n = 102).

Practice detail	Category	n	%
Number of times screened	Once	74	72.5
	2–3 times	22	21.6
	More than 3 times	3	2.9
Time since last screening	Less than 1 year ago	68	66.7
	1–3 years ago	20	19.6
	More than 3 years ago	11	10.8
Screening method used	Pap smear	65	63.7
	Visual inspection with acetic acid (VIA)	12	11.8
	HPV DNA test	11	10.8
	Not sure	10	9.8

Barriers to Screening

Among the 110 respondents who had never been screened, the most frequently cited personal reasons were not feeling at risk (25.5%), fear of the result (25.5%), lack of time (23.6%), and lack of awareness (22.7%); cost of screening (9.1%) and lack of a screening facility (10.9%) were less frequently cited, and a small number of respondents (n = 5) gave reasons unrelated to personal screening barriers (e.g., identifying as male), which were excluded from the barrier analysis as data quality issues (see Limitations).

When all respondents (including those already screened) were asked about barriers they perceived to affect health workers generally, inadequate knowledge (39.2%) and fear of diagnosis (33.5%) were the most frequently endorsed institutional/social barriers, followed by limited access to services (21.7%), lack of institutional policy or support (21.2%), time constraints (20.3%), embarrassment or discomfort (16.5%), low perceived risk (14.6%), and financial constraints (12.3%) (Table 5, Figure 2).

Table 5. Perceived barriers to cervical cancer screening among health workers (N = 212, multiple responses permitted).

Barrier	n	%
Inadequate knowledge	83	39.2
Fear of diagnosis	71	33.5
Limited access to services	46	21.7
Lack of institutional policy/support	45	21.2
Time constraints	43	20.3
Embarrassment or discomfort	35	16.5
Low perceived risk	31	14.6
Financial constraints	26	12.3

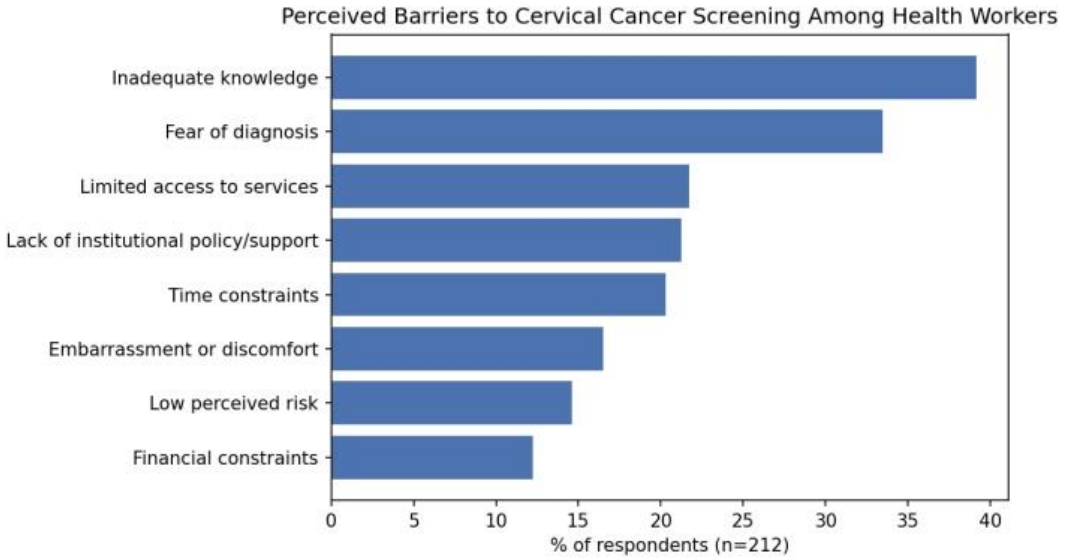


Figure 2. Perceived barriers to cervical cancer screening among health workers (N = 212).

Consistent with these barriers, the most frequently suggested improvements were awareness campaigns (75.0%), more female-friendly screening services (34.9%), inclusion of screening in routine staff medical check-ups (27.8%), free or subsidised screening (25.5%), and a routine institutional policy mandating screening (25.5%).

Sociodemographic, Professional, and Psychosocial Correlates of Screening Practice

Bivariate analysis showed that screening uptake (ever screened, yes/no) was significantly associated with age group, marital status, religion, knowledge category, and attitude category, but not with educational qualification, professional cadre, or years of experience (Table 6). Screening uptake generally increased with age up to the 35–44 age band (a marked jump from 34% among 25–34-year-olds to 68% among 35–44-year-olds) before declining slightly among older groups. Married and widowed respondents had higher uptake than single or divorced/separated respondents. A large religious difference was observed: 67.2% of Christian respondents had been screened compared with only 41.2% of Muslim respondents ($\chi^2 = 12.38$, $p = .002$; Fisher's exact $p = .001$ for the Islam-versus-Christianity comparison, OR = 0.34). Screening uptake also rose steadily with knowledge category (58.1% among those with good knowledge vs. 28.6% among those with poor knowledge) and, more modestly, with attitude category.

Table 6. Bivariate association between sociodemographic/professional/psychosocial characteristics and ever having been screened.

Characteristic	Test statistic	df	p-value
Age group	$\chi^2 = 20.05$	4	< .001*
Marital status	$\chi^2 = 9.98$	3	.019*
Religion	$\chi^2 = 12.38$ (Fisher's exact p = .001)	2	.002*
Educational qualification	$\chi^2 = 4.42$	3	.220
Professional cadre	$\chi^2 = 8.74$	8	.365
Years of experience	$\chi^2 = 2.94$	3	.401
Knowledge category	$\chi^2 = 13.65$	2	.001*

Characteristic	Test statistic	df	p-value
Attitude category	$\chi^2 = 6.30$	2	.043*
Knowledge score (continuous)	Mann-Whitney U (screened median = 6 vs. not screened median = 5)	—	< .001*
Attitude score (continuous)	Mann-Whitney U (screened median = 17.5 vs. not screened median = 17)	—	.057

** $p < .05$.*

To identify independent predictors while accounting for potential confounding, a multivariable logistic regression model was fitted with age, marital status, religion, knowledge score, and attitude score entered simultaneously (Table 7). After adjustment, religion and knowledge score remained independent, statistically significant predictors of screening uptake, while age, marital status, and attitude score were no longer significant. Muslim respondents had 71% lower odds of ever having been screened than non-Muslim respondents, holding age, marital status, knowledge, and attitude constant (adjusted OR = 0.29, 95% CI [0.13, 0.64], p = .002). Each one-point increase in the knowledge score was independently associated with 44% higher odds of having been screened (adjusted OR = 1.44, 95% CI [1.19, 1.75], p < .001). The model's McFadden pseudo-R^2 was .113, indicating that the included predictors explain a modest, but non-trivial, share of the variation in screening practice.

Table 7. Multivariable logistic regression predicting ever having been screened for cervical cancer (N = 212).

Predictor	aOR	95% CI	p-value
Age (ordinal, per category increase)	1.18	0.86, 1.64	.307
Married (vs. not married)	1.26	0.66, 2.41	.486
Muslim (vs. non-Muslim)	0.29	0.13, 0.64	.002*
Knowledge score (per 1-point increase)	1.44	1.19, 1.75	< .001*
Attitude score (per 1-point increase)	1.02	0.88, 1.17	.826

Note. aOR = adjusted odds ratio; CI = confidence interval. McFadden's pseudo-R^2 = 0.113. * p < .05. Indicates a statistically significant association. Age and marital status were not significantly associated with screening uptake, whereas Muslim religion was associated with lower odds of screening uptake compared with non-Muslim participants. Higher knowledge scores were significantly associated with increased odds of screening uptake, while attitude score was not significantly associated with screening uptake.

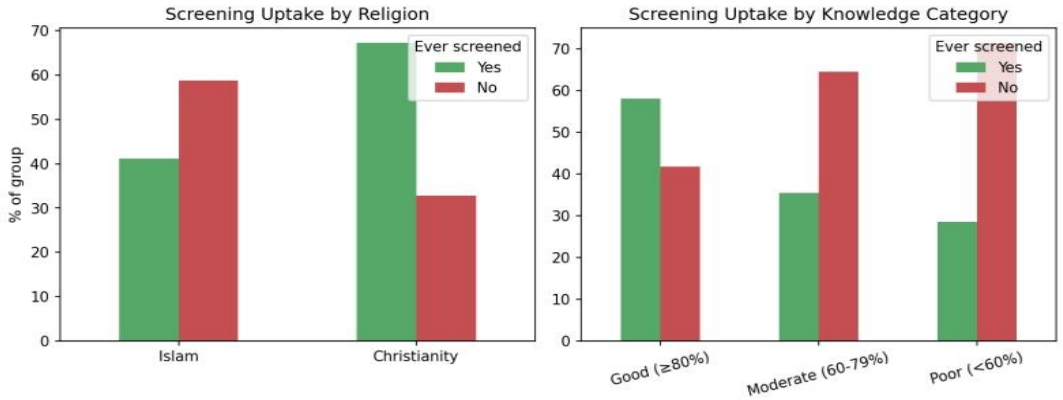


Figure 3. Screening uptake (%) by religion and by knowledge category.

Discussion

This study assessed knowledge, attitude, and practice (KAP) of cervical cancer screening among 212 female health workers in Nigeria and examined sociodemographic and professional correlates of screening uptake. Three broad findings emerged: knowledge was generally good but had a specific and important gap around screening frequency; attitudes toward screening in the abstract were strongly positive but did not translate into an equally positive personal attitude profile; and actual screening uptake remained below half of respondents despite this favourable knowledge and attitude base, with religion and knowledge score rather than professional cadre, education, or experience emerging as the strongest independent correlates of practice.

Knowledge of Cervical Cancer and Screening

The overall level of knowledge observed here (60.8% classified as good) is broadly consistent with other Nigerian studies of health workers, which have generally reported moderate-to-good knowledge levels, in the region of 69% in a recent primary health care worker sample in Lagos State (Adejimi et al., 2026) and comparable figures among university-affiliated female staff (Ogundipe et al., 2023). This consistency across studies and settings suggests that basic awareness of cervical cancer as a disease entity is now reasonably well established among Nigerian health workers, likely reflecting their professional exposure to health information relative to the general population (Okolie et al., 2021). However, the present study identified a specific and clinically important knowledge gap that has received less attention in prior KAP literature: only 17.9% of respondents correctly identified the recommended screening interval, with the large majority overestimating the frequency required (44.3% believed screening should occur every 6 months, considerably more often than international guidance recommends). This is a subtler failure of knowledge than simple unawareness respondents knew that screening exists and is important, but held an inaccurate mental model of how it should be scheduled. Because over-frequent expectations of screening are practically unachievable in a resource-constrained health system, this misconception could itself function as a hidden barrier: a worker who believes screening should happen twice yearly, finds this impossible to achieve, and reasonably concludes screening is not worth starting at all, may never be screened even once. This distinction between general disease awareness and precise, actionable procedural knowledge is consistent with the broader observation that health worker knowledge, attitude, and practice do not move in lockstep in this domain (Okolie et al., 2021).

Attitudes and Perceptions

Consistent with the wider Nigerian literature, respondents in this study expressed strongly favourable general beliefs about screening: over 90% agreed that screening is important for early detection, a figure comparable to the 89% reporting positive attitudes among Lagos primary health care workers (Adejimi et al., 2026) and the high endorsement rates reported among antenatal attendees in Ibadan, where 75.6% expressed willingness to undergo screening once informed about it (Agboola & Bello, 2021). However, when the composite attitude score which incorporated personal anxiety, perceived cultural discouragement, and perceived personal risk alongside general beliefs about screening's value was categorized, only 11.3% of respondents showed an overall positive attitude profile. This divergence between near-universal endorsement of screening as a concept and a much less favourable personal attitude profile illustrates a distinction the Health Belief Model makes explicit: general beliefs about the benefits of a health behaviour are necessary but not sufficient to predict uptake, which also depends on

perceived susceptibility, perceived barriers, and cues to action (Rosenstock, 1974). In this sample, perceived personal susceptibility was particularly weak only 35.8% of respondents perceived themselves to be at risk of cervical cancer, despite their professional knowledge of the disease which the Health Belief Model would predict to be a substantial impediment to screening uptake independent of general attitudes or factual knowledge.

Prevalence and Frequency of Screening Uptake

Screening uptake in this sample (48.1% ever screened) sits toward the higher end of the wide range reported for Nigerian female health workers, which spans from below 20% to over 50% depending on setting, cadre mix, and how screening history is defined (Okolie et al., 2021). It remains, however, well short of the WHO's 70% screening-coverage target for the general population under the Global Strategy to Accelerate the Elimination of Cervical Cancer (World Health Organization, 2020), and it is striking that even this partially favourable figure was achieved among health workers themselves a population with occupational proximity to screening services and above-average disease knowledge. This gap between knowledge/attitude and practice, sometimes termed the KAP-gap, has been repeatedly documented among Nigerian health workers (Okolie et al., 2021) and is corroborated here: 60.8% of respondents had good knowledge, but only 48.1% had ever been screened, and among those screened, the large majority (72.5%) had been screened only once rather than at a recommended interval, indicating that even successful uptake does not consistently translate into sustained, guideline-concordant screening behaviour.

Barriers to Screening

The barriers identified in this study inadequate knowledge, fear of diagnosis, limited access to services, lack of institutional policy, time constraints, and low perceived risk closely mirror the individual-level and health-system-level barriers synthesised across 15 Nigerian studies of female health workers, where fear of a positive result, low-risk perception, lack of awareness, and lack of time were similarly predominant (Okolie et al., 2021). The prominence of fear of diagnosis (33.5%) and low perceived risk (14.6%) as barriers, alongside the low personal-risk-perception score documented under Objective 2, together suggest that psychological and perceptual barriers are at least as important as structural/access barriers in this population, even though respondents are themselves embedded within the health system that would need to remove those structural barriers. The comparatively lower endorsement of financial constraints (12.3%) relative to some earlier Nigerian studies may reflect health workers' privileged access to subsidised or free in-house screening relative to the general population, though this study did not directly test that explanation.

Sociodemographic, Professional, and Psychosocial Correlates of Practice

The bivariate and multivariable analyses converged on a consistent picture: after mutual adjustment, professional characteristics traditionally emphasised in KAP research cadre, educational qualification, and years of experience were not significantly associated with screening uptake in this sample, whereas religion and knowledge score were independent predictors. The finding that professional cadre and education did not independently predict uptake, despite a highly educated sample in which doctors and nurses might be assumed to have privileged access, echoes the systematic-review finding that professional-level factors show inconsistent associations with screening practice across Nigerian studies, whereas marital status and knowledge/attitude factors more consistently predict uptake (Okolie et al., 2021).

The independent, substantial religious difference observed here with Muslim respondents having 71% lower adjusted odds of ever having been screened than their non-Muslim counterparts, even after accounting for age, marital status, knowledge, and attitude is a notable finding that merits cautious interpretation. It should not be read as reflecting an inherent property of Islamic faith regarding health behaviour; rather, it likely reflects the cultural and modesty-related concerns that have been documented as barriers to gynaecological screening in Muslim-majority settings, particularly around comfort with intimate examinations and preference for female providers (Okolie et al., 2021). This interpretation is supported by two convergent pieces of evidence from the present dataset: over half of respondents (54.7%) agreed that cultural or religious beliefs discourage screening, and "more female-friendly screening services" was the second most frequently suggested improvement (34.9%), immediately after general awareness campaigns. Taken together, these findings suggest that the religious disparity in uptake is mediated by modesty-related and service-delivery factors rather than by religious teaching regarding health-seeking per se, though this study's cross-sectional design cannot formally establish mediation.

The independent association between knowledge score and screening uptake (adjusted OR = 1.44 per point) which persisted after adjustment for attitude, age, marital status, and religion reinforces knowledge as a modifiable lever for intervention: unlike demographic characteristics, knowledge can plausibly be improved through targeted continuing professional education, and the identified interval-knowledge gap (Objective 1) offers a concrete, addressable target for such training. By contrast, the attitude score's loss of significance after adjustment suggests that its unadjusted association with uptake in this sample was substantially confounded by knowledge and religion rather than reflecting an independent psychosocial pathway, at least as attitude was operationalised here.

Implications

These findings collectively suggest that interventions aimed solely at raising general awareness the improvement most frequently requested by respondents themselves (75.0%) are necessary but, on the evidence of the persistent knowledge-practice and attitude-practice gaps documented here, unlikely to be sufficient on their own. A multi-pronged strategy combining (a) targeted correction of specific procedural misconceptions such as screening interval, (b) institutional policy measures that embed screening into routine staff health checks (Adejimi et al., 2026), and (c) culturally sensitive, female-friendly service delivery to address modesty-related barriers, would be more consistent with the pattern of correlates identified in this study than awareness campaigns alone. Such an integrated approach aligns with the WHO's call for health system, not just individual-level, interventions as part of the broader cervical cancer elimination agenda (World Health Organization, 2020).

Limitations

Several limitations should be considered when interpreting these findings. First, the cross-sectional design precludes causal inference; associations between knowledge, religion, and screening uptake should be interpreted as correlational. Second, screening history was self-reported and subject to recall and social-desirability bias, particularly given that respondents were themselves health workers who may feel professional pressure to report favourable practices. Third, several fields in the raw dataset required substantial cleaning: free-text entries for professional cadre included a small number of clearly non-clinical occupations (e.g., teacher, chef, political science), which were grouped as "other/unclear" rather than discarded, and a small number of respondents (n = 5) gave responses indicating male sex despite the study's female-only eligibility criterion; these were excluded from the relevant barrier

analysis but indicate some data-quality limitations in the underlying self-administered survey instrument. Fourth, the definition of "correct" knowledge for screening interval and risk factors followed conventional international guidance, but some Nigerian screening protocols may differ from this benchmark, which should be considered when interpreting the low interval-knowledge score. Finally, the sample was drawn through convenience/purposive recruitment rather than random sampling of a defined sampling frame, which may limit generalisability to the wider population of Nigerian female health workers.

Conclusion

Female health workers in this Nigerian sample demonstrated generally good general knowledge and strongly positive general attitudes toward cervical cancer screening, yet fewer than half had ever been screened themselves, and a specific misconception about recommended screening frequency was widespread. Religion and composite knowledge score, rather than professional cadre, education, or years of experience, emerged as the strongest independent correlates of screening practice after multivariable adjustment, while fear of diagnosis, low perceived personal risk, and modesty-related cultural barriers were the most salient perceived obstacles. These findings point to a persistent knowledge-attitude-practice gap that general awareness campaigns alone are unlikely to close, and support a combined strategy of targeted knowledge correction, institutional policy integration, and culturally sensitive, female-friendly service delivery to improve screening uptake among this professionally influential population.

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