

Original Article

Knowledge, Attitude and Practice of Cervical Screening among Females of the Local Community

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Abstract

Objective: To determine the frequency of knowledge, attitude and practice of cervical screening among females of the local community attending Gynecology outpatient department (OPD).

Methods: This cross-sectional study was carried out at Department of Obstetrics & Gynecology, Sharif Medical City Hospital, Lahore, from July 2021 to January 2022. Women aged 20-60 years, residing in local communities presenting at gynae OPD with different gynecological complaints were included. All the enrolled participants underwent face-to-face discussion with the researcher. Their feedback against each question was recorded and knowledge, attitude and practice were noted. All this information was recorded through pre-designed proforma.

Results: Overall women were predominantly young adults, with an overall mean age of 34.67 ± 10.01 years. Overall knowledge regarding cervical screening was significantly inadequate in most of the women 46.5%, moderate in 40.5% and good in only 13%. Regardless of this, majority of women (90.3%) had a positive attitude towards cervical screening, whereas only 24.3% had ever undergone screening and most of the women 75.7% still had never been screened. The educational status was significantly linked to the knowledge and attitude of the women ($p = 0.001$): the good knowledge was higher among women educated beyond graduation (75.0%), while a negative attitude was most common among illiterate women (64.7%), ($p = 0.472$).

Conclusion: The majority of women had a positive attitude towards screening, but many had inadequate knowledge and only a small proportion had ever been screened.

Keywords: Cervical cancer, knowledge, attitude, practice, screening.

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Introduction

Cervical cancer represents a significant global threat to women's health, with reported estimates of around 662,301 new diagnoses and approximately 348,874 deaths during 2022.¹ While proper screening practices and early detection can minimize the burden of cervical cancer, the disease retains a disproportionately high occurrence among women in low- and middle-income countries (LMICs), accounting for over 85% of global cases and deaths, with disparity being further exacerbated by limited accessibility to screening facilities, lack of awareness, and substantial

socioeconomic barriers that hinder appropriate diagnosis and disease management.^{2,3} Despite the initiation of national HPV vaccination campaign in 2025, Pakistan faces a significant burden of cervical cancer due to limited screening services and absence of fully implemented national screening program, with an estimated at-risk population of 73.8 million women aged 15 years and above.^{4,5}

Knowledge is an essential part of health-seeking behavior regarding cervical cancer and its screening, while evidence show significant knowledge gaps,

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misperceptions regarding cervical cancer, and limited comprehension of relationship between HPV infection and cervical cancer among women in low-resource settings.⁶ For instance, a Sub-Saharan African study reported limited understanding of risk factors, purpose of screening, and HPV infection, despite awareness of cervical cancer among many women.⁷ In Pakistan, limited knowledge of cervical cancer risk factors, HPV infection, and prevention strategies is evident in healthcare professionals, including medical interns and nursing staff.⁸ Systematic review studies have also identified low risk perception, inadequate knowledge, and poor awareness about cervical cancer screening even among female healthcare providers.⁹

Attitude is another critical determinant of the disease screening uptake, which is associated with attitudes towards cervical cancer and willingness to undergo screening and /or adherence to screening recommendations.¹⁰ Multiple systematic reviews and meta-analyses have documented significant association between attitudes toward cervical cancer screening and screening uptake, and reported higher likelihood of undergoing screening among women holding positive attitudes, while negative attitudes, fear of screening procedures, and embarrassment were found to be significant psychosocial barriers to screening participation.^{11,12} Various barriers to cervical cancer screening have been reported in published literature, including psychological, cultural, and structural factors, such as low perceived risk, fear of the procedure, cancer-related stigma, a lack of spousal support, limited healthcare accessibility, and insufficient resources.¹³

Cervical cancer-associated screening practices and actual uptake of screening services remains suboptimal and exhibit significant regional disparities across Asia, with only 20.94% of reported pooled prevalence for screening practice in Africa.^{12,14} In Arab countries, lack of knowledge (25.1%), the health-related conceptual misconception (24.5%), screening procedure-associated fear (19.3%), and feeling embarrassed (13.2%) have been reported as the most common barriers to cervical cancer screening.¹⁵ In South Asia, particularly in Pakistan, cervical cancer screening rates remain critically low due to multiple systemic and individual-level barriers, including lack of standardized screening guidelines, suboptimal healthcare systems, and pervasive sociocultural barriers, such as disease-associated stigma, educational disparities, and cultural modesty constraints.¹⁶ The present study was therefore designed to determine the frequency of knowledge,

attitude, and practice of cervical screening among females of the local community attending the Gynecology OPD at Sharif Medical City Hospital, Lahore.

Methodology

This cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Sharif Medical City Hospital, Lahore, over a six-month period, from July 2021 to January 2022, following approval of the study synopsis. Ethical approval was obtained from the Sharif Medical and Dental College Institutional Review Board (Ref. No. SMDC/SMRC/112-20).

Women aged 20–60 years residing in local communities and presenting with various gynaecological complaints at the Gynaecology Outpatient Department (OPD) were eligible for inclusion. Women with a previously diagnosed cervical pathology, as documented in their medical records; those who declined to participate or were unable to understand the local language; unmarried women; and those presenting with per-vaginal bleeding or discharge at the time of the procedure were excluded.

The sample size was calculated as 185 participants, based on an expected cervical cancer screening practice rate of 8.3%, a 95% confidence level, and a 4% margin of error. Non-probability consecutive sampling was used to recruit eligible participants.

Written informed consent was obtained from all participants before data collection. Demographic and clinical information, including age, marital status, parity, body mass index (BMI), socioeconomic status, educational level, presenting complaint, and duration of symptoms, was recorded. Each participant underwent a face-to-face interview conducted by the researcher, during which responses to the structured questionnaire were documented to assess knowledge, attitudes, and practices (KAP) regarding cervical cancer screening.

Knowledge of cervical cancer screening was assessed using 10 structured questions addressing awareness of cervical screening, its purpose, the detection of precancerous changes, the Pap smear test, human papillomavirus (HPV) testing, the need for screening in the absence of symptoms, the interpretation of a positive HPV test result, the role of early detection in prevention, eligibility for screening, and recommended screening intervals. Each correct response was assigned one point, whereas incorrect and “do not know” responses were assigned zero points. The total knowledge score

ranged from 0 to 10 and was categorized as good (8–10), moderate (5–7), or poor (0–4).

Attitudes toward cervical cancer screening were assessed in terms of participants' willingness to undergo screening. Screening practices were evaluated by determining whether participants had previously undergone cervical cancer screening. All information was recorded on a predesigned data collection proforma, and the collected data were analyzed using IBM SPSS Statistics, version 24.

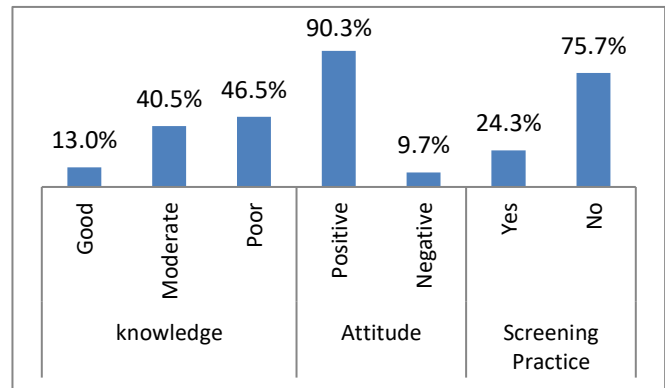
Results

Overall 185 patients were enrolled in the study for cervical screening, with an overall mean age of 34.67 ± 10.01 years, mean BMI of 26.67 ± 2.74 kg/m² and an average parity of 2.09 ± 2.06 , along with mean symptoms duration of 12.46 ± 19.99 months. Among women most common presenting complaint was the desire to conceive (26.5%), followed by lower abdominal pain (12.4%), PV discharge (8.1%), post-coital spotting (5.9%) and subfertility (5.4%), as presented in table I.

Table 1: Characteristics and presenting complaints of patients. (n = 185)

Variable	Category	n (%) / Mean $\pm$ SD
Mean age of the patients		34.67 ± 10.01 years
Mean BMI of patients		26.67 ± 2.74 kg/m ²
Mean parity		2.09 ± 2.06
Duration of symptoms		12.46 ± 19.99 months
Presenting complaint	Keen to conceive	49 (26.5%)
	Lower abdominal pain	23 (12.4%)
	PV discharge	15 (8.1%)
	Post-coital spotting	11 (5.9%)
	Subfertility	10 (5.4%)
	Dyspareunia	07 (3.8%)
	Amenorrhea	05 (2.7%)
	Backache	05 (2.7%)
	Oligomenorrhoea	05 (2.7%)
	Heavy menstrual bleeding	04 (2.2%)
	Urinary tract infection	04 (2.2%)
	Utero-vaginal prolapse	03 (1.6%)
	Weakness	03 (1.6%)
	Perineal heaviness	02 (1.1%)
	Abnormal uterine bleeding	01 (0.5%)
	Burning micturition	01 (0.5%)
	Irregular menstrual cycle	01 (0.5%)
	Urinary frequency	01 (0.5%)

Among all of the study participants who attending the gynaecology OPD, knowledge regarding cervical screening was significantly inadequate in most of the women 46.5%, moderate in 40.5% and good in only 13%. Regardless of this, majority of women (90.3%) had a positive attitude towards cervical screening, whereas only 24.3% had ever undergone screening and most of the women 75.7% still had never been screened, as



presented in figure 1.

Figure 1. Distribution of cases according to knowledge, attitude, and practice of cervical screening among females attending Gynaecology OPD. (n=185)

The age of the women was not significantly associated with their knowledge of cervical cancer screening ($p = 0.297$). However, age was significantly associated with attitude and practice, although the reported p-value ($p > 0.05$) requires verification. Women aged under 40 years were more likely to demonstrate a positive attitude toward cervical cancer screening (130, 77.8%) than those aged over 40 years, with a statistically significant association ($p = 0.036$). Furthermore, educational status was significantly associated with knowledge and attitude ($p = 0.001$). Good knowledge was more prevalent among women educated beyond the graduation level (75.0%), whereas a negative attitude was most common among illiterate women (64.7%). However, the reported association with negative attitude was statistically insignificant ($p = 0.472$). These findings are presented in Table II.

Discussion

The cervical screening is very important for the early detection of cervical abnormalities, while the knowledge, attitudes, and practices of women influence screening uptake and timely preventive care. This study was conducted to determine the frequency of knowledge, attitude and practice of cervical screening, on 185 women with overall mean age of 34.67 ± 10.01 years,

Table II: Knowledge, attitude and practice of cervical screening according to age and educational status of patients. (n = 185)

Variable		Knowledge			Attitude		Practice	
		Good	Moderate	Poor	Positive	Negative	Yes	No
Age (years)	20–40	21 (87.5)	57 (76.0)	62 (72.1)	130 (77.8)	10 (55.6)	28 (62.2)	112 (80.0)
	41–60	3 (12.5)	18 (24.0)	24 (27.9)	37 (22.2)	8 (44.4)	17 (37.8)	28 (20.0)
p-value		0.297			0.036		0.016	
Educational status	Illiterate	1 (4.2)	10 (13.5)	21 (24.4)	21 (12.6)	11 (64.7)	9 (20.0)	23 (16.5)
	Up to matric	3 (12.5)	10 (13.5)	9 (10.5)	20 (12.0)	2 (11.8)	6 (13.3)	16 (11.5)
	Graduate	2 (8.3)	19 (25.7)	33 (38.4)	53 (31.7)	1 (5.9)	9 (20.0)	45 (32.4)
	Masters	18 (75.0)	35 (47.3)	23 (26.7)	73 (43.7)	3 (17.6)	21 (46.7)	55 (39.6)
p-value		0.001			0.001		0.472	

mean BMI of 26.67 ± 2.74 kg/m², an average parity of 2.09 ± 2.06 , and 12.46 ± 19.99 months of mean duration of symptoms. The findings were consistent with a study conducted by Ataya J et al¹⁷ who reported 39.55 ± 12.37 years of mean age and mean BMI 26.91 ± 5.61 kg/m² among women assessed for cervical cancer awareness.

Consistently, Shamaun S et al¹⁸ reported a mean age of 41.25 ± 10.54 years and mean parity of 3.8 ± 1.95 . Similarly, Ghosh S et al¹⁹ reported a mean age of 39.8 ± 10.1 years. The slight disparity in the mean age and parity across studies may be attributable to the differences in the study selection criteria, regional fertility patterns and family planning practices.

In this study, most common presenting complaint was the desire to conceive (26.5%), followed by lower abdominal pain (12.4%), PV discharge (8.1%), post-coital spotting (5.9%) and subfertility (5.4%). These findings are comparable with the study conducted by Shrestha DB et al²⁰ who reported that lower abdominal pain in 50.6% of patients was the most frequently noted complaint, followed by abnormalities of menstrual cycle in 30.9%, and per-vaginal discharge in 25.5% of patients. Aligning with these findings, the prospective study by Panti AA et al²¹ reported that the most common complaints were lower abdominal pain in 78.8%, followed by vaginal discharge in 76.6% of patients, which considerably higher than that observed in our study. Some difference in the frequency of presenting complaints across the studies may due to the differences in the study populations and differences in health-seeking behavior and awareness.

In this series, most of the women had significantly inadequate knowledge (46.5%), followed by moderate (40.5%) and good knowledge (13%) regarding cervical screening. These findings were in line with the study conducted by Shamaun S et al.¹⁸, who reported awareness regarding cervical screening among 33.6% of women and concluded that their cohort had a poor knowledge of cervical cancer screening. Comparably,

the study by Ghosh S et al¹⁹ reported significant knowledge gap in southern Indian tribal women, with inadequate knowledge in considerably higher proportion of 77.6% women compared to our findings, despite the fact that most of their study participants had heard (82.9%) of cervical cancer. Similarly, in the study published by Aliya B et al²² reported lack of knowledge in their study cohort, as only 25.6% of women had heard of cervical cancer. Another study carried out by Ruddies F et al²³ also reported that awareness of cervical cancer and symptoms in only 36% and 4.7% of women, indicating poor knowledge. Furthermore, a Saudi Arabian study conducted by Akkour K et al²⁴ also reported a considerably poor knowledge in their cohort, with most participants being unaware that HPV is sexually transmitted (78.9%), genital warts are caused by HPV (81.7%), or cervical cancer can be triggered by HPV (81.9%), despite a high general awareness of cervical cancer itself (84.0%), which was gained primarily through the internet.

In the present study, despite limited knowledge of cervical cancer screening, the majority of women (90.3%) demonstrated a positive attitude toward screening, whereas only 24.3% had previously undergone screening. Similar findings were reported by Ghosh et al.¹⁹, who found that most women from tribal communities in southern India (99.9%) had a positive attitude toward cervical cancer screening despite limited knowledge, while only 6.0% reported a history of previous screening. These findings highlight a substantial gap between positive attitudes toward cervical cancer screening and actual screening practices. In line with our findings, Aliya B et al²² reported the attitudes remained largely positive (83.2 %), regardless of screening history in only 6.0% of participants. Correspondingly, in the study carried out by Ruddies F et al²³ a generally positive attitude was noted towards cervical cancer and its management, with 61% of respondents considering cervical cancer as lethal, 13.5% felt being at the risk of developing this disease,

and 60.7% believed it could be treated. Moreover, considerably fewer participants had a history of previous screening (2.3%). Consistent findings regarding the history of screening for cervical cancer were documented in several other studies also, such as in a recent study by Shamaun S et al¹⁸ only 15.9% had a previous screening history; similarly, in the study by Akkour K et al²⁴ only 8.0% had ever undergone screening, and in the study by Javaeed A et al²⁵ a history of pap smear test was recorded in 5.9% of participants. Some difference in the prevalence of positive attitude across studies may be because the differences in the assessment tools, screening services, healthcare infrastructure, and health literacy.

In the present study, age was significantly associated with attitudes toward cervical cancer screening ($p = 0.036$) and screening practices ($p = 0.016$), whereas the association between age and knowledge did not reach statistical significance ($p = 0.297$). Screening practices were more common among younger women aged 20–40 years (62.2%) than among those aged 41–60 years (37.8%). Similarly, a positive attitude toward screening was more prevalent among younger women than among those in the older age group (77.8% vs. 22.2%). These findings partially align with those of Ghosh et al.¹⁹, who reported that women older than 31 years were nearly twice as likely to have poor knowledge of cervical cancer screening as women aged 31 years or younger (OR = 1.94). The authors also found a statistically significant association between knowledge scores and age group ($p < 0.05$). Although the present study did not identify a significant association between age and knowledge, both studies highlight age-related differences in cervical cancer screening awareness and related outcomes.

Similarly, the study carried out by Akokuwebe ME et al.²⁶ exhibited a significant correlation between Pap smear testing and age group, with a screening history for cervical cancer in the majority of 52.5% women aged 35–44 years. The study conducted by Al Kalbani R²⁷ reported a significant association age and Pap smear knowledge scores ($p = 0.001$), indicating age as a vital factor for awareness regarding cervical cancer in screening behavior. A higher likelihood of younger women to have positive attitudes and screening practice across studies may be explained by greater exposure to health education through media and internet, as well as more frequent contact with healthcare services for reproductive health needs.

In this study, educational status was significantly linked to knowledge ($p=0.001$) and attitude ($p=0.001$) toward cervical cancer screening. The findings were in proportion to the study conducted by Ruddies F et al²³, who reported that individuals with 1–8 years of education were over two-times more likely to have better knowledge (OR = 2.4). Consistently Ghosh S et al¹⁹ found significant association between education level and knowledge scores were ($p < 0.05$), with better knowledge among individuals with higher educational attainments. Akokuwebe ME et al²⁶ also reported that the educational status was significantly correlated with Pap smear uptake, with considerably higher likelihood of being screened among women with secondary education (64.0%) and primary education (17.3%) compared to those with no education, ($p < 0.001$). The discrepancy in association between education and screening practice in our study may be explained by the fact that the present study included a highly educated subgroup, which constituted the majority and had good knowledge but may have faced other barriers to screening, such as lack of time, fear of the procedure, or preference for female healthcare providers. Furthermore, we recommend further large-scale, multicenter studies to validate these findings, as the small sample size of the present study may have limited the statistical power to detect a significant association between education and screening practices.

Conclusion

The study revealed a clear gap between attitudes and practices regarding cervical cancer screening. Although most women demonstrated a positive attitude toward screening, many had inadequate knowledge, and only a small proportion had previously undergone screening. Educational status was strongly associated with knowledge and attitude; however, this did not necessarily translate into better screening practices. Targeted health education, particularly for women with lower educational attainment and those in older age groups, is needed to improve awareness and encourage screening uptake. Furthermore, integrating routine, provider-initiated cervical cancer screening into gynaecological clinical practice may help bridge the gap between willingness and actual screening behaviour, ultimately reducing the burden of preventable cervical cancer morbidity.

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