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Research

Knowledge, Attitude and Practices (KAP) Towards Cervical Cancer and its Screening among Women Attending in a Tertiary Care Hospital: A Hospital - Based Study

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Abstract

Background: Cervical cancer remains a major public health concern in low and middle income countries, accounting for substantial morbidity and mortality despite being largely preventable through effective screening and vaccination strategies. Understanding women's knowledge, attitude and practices (KAP) toward cervical cancer and its screening is essential for improving early detection and prevention.

Objective: To assess the knowledge, attitude and practices regarding cervical cancer and its screening among women attending a tertiary care hospital and to identify socio-demographic factors associated with screening uptake.

Methods: A hospital based cross sectional study was conducted among 350 women attending the outpatient department of a tertiary care hospital in Telangana, India. Data were collected using a structured, pre-tested questionnaire covering socio-demographic characteristics, knowledge of cervical cancer and its risk factors, attitudes toward screening and prevention and screening practices. Data were analyzed using descriptive statistics and chi-square tests to determine associations between variables, with $p < 0.05$ considered statistically significant.

Results: Among the 350 participants, 61.7% had heard of cervical cancer, while only 31.5% were aware of the Pap smear test as a screening method. Although 65.3% demonstrated a favorable attitude toward cervical cancer screening, only 3.4% had ever undergone screening. Higher educational status and prior exposure to health education were significantly associated with better knowledge scores and screening practices ($p < 0.05$).

Conclusion: The study demonstrates a marked gap between awareness, attitude

and actual screening practices. Strengthening community-based awareness programs and integrating cervical cancer screening into routine healthcare services are critical to improving screening uptake and reducing disease burden.

Keywords: Cervical cancer, Pap smear, Screening, Knowledge attitude practice, Human papilloma virus.

Introduction

Cervical cancer is a malignant neoplasm arising from the epithelial lining of the cervix and is causally associated with persistent infection with high-risk human papillomavirus (HPV), particularly oncogenic genotypes HPV-16 and HPV-18, which together account for approximately 70% of cervical cancer cases worldwide [1,2]. The disease typically evolves through a prolonged precancerous phase, progressing from cervical intraepithelial neoplasia to invasive carcinoma over several years, thereby offering a crucial opportunity for early detection and prevention through effective screening strategies [3].

Globally, cervical cancer ranks as the fourth most common cancer among women, with an estimated 604,000 new cases and over 340,000 deaths reported annually [4]. Despite being largely preventable, it remains a leading cause of cancer-related mortality, particularly in low and middle income countries (LMICs), which contribute nearly 90% of global cervical cancer deaths [5]. These disparities reflect inequitable access to HPV vaccination, organized screening programs, early diagnosis and timely treatment [6].

India bears a disproportionate share of the global cervical cancer burden, contributing nearly one-fifth of total cases worldwide [7]. Cervical cancer remains the second most common cancer among Indian women and a major cause of cancer related mortality, particularly in rural and socioeconomically disadvantaged populations [8]. The high disease burden has been attributed to early age at marriage, multiparity, limited genital hygiene awareness, poor knowledge of HPV infection and inadequate access to preventive healthcare services [9].

Screening modalities such as the Papanicolaou (Pap) smear, HPV DNA testing and visual inspection techniques using acetic acid or Lugol's iodine have demonstrated effectiveness in reducing cervical cancer incidence and mortality by enabling early detection and treatment of precancerous lesions [10,11]. However, despite the availability of these methods, screening uptake remains suboptimal in many developing countries, including India [12]. Barriers include lack of awareness, sociocultural stigma, fear of gynecological examinations, limited screening infrastructure and the absence of organized population-based screening programs [13,14].

Women's knowledge, attitudes and practices (KAP) regarding cervical cancer and its screening play a pivotal role in determining participation in preventive services [15]. Adequate knowledge of risk factors, symptoms and screening methods is associated with favorable attitudes and higher screening uptake, whereas poor awareness often leads to delayed diagnosis and advanced-stage disease presentation [16,17]. KAP studies are therefore essential for identifying gaps between awareness and health-seeking behavior and for guiding the development of targeted educational and screening interventions [18,19].

In the Indian context, where cervical cancer screening is largely opportunistic rather than organized, understanding women's perceptions and practices is critical for strengthening prevention strategies. Accordingly, the present study aims to assess the knowledge, attitude and practices toward cervical cancer and its screening among women attending a tertiary care hospital, with the objective of generating evidence to inform effective public health interventions and improve screening uptake.

Rationale of the Study

In India, cervical cancer is often diagnosed at advanced stages, leading to poor prognosis and increased healthcare burden. Evaluating KAP among women attending tertiary care hospitals can identify knowledge gaps and behavioral barriers that hinder screening uptake, thereby informing policy-level and community-based strategies.

Materials and Methods

A hospital-based cross-sectional study was conducted at a tertiary care teaching hospital in Telangana, India. The study population consisted of women aged 18 years and above attending the outpatient department during the study period. Women who provided written informed consent were included, while those unwilling to participate, unable to provide consent, or critically ill at the time of data collection were excluded.

A total of 350 participants were enrolled using a convenience sampling technique, based on availability and willingness to participate. Data were collected using a structured, pre-tested questionnaire developed from previously published KAP studies and relevant literature. The questionnaire was administered through face-to-face interviews and comprised four sections: socio-demographic characteristics, knowledge regarding cervical cancer (including awareness, symptoms, risk factors, prevention, HPV vaccination, and screening methods), attitudes toward cervical cancer screening and prevention assessed using a Likert scale, and preventive practices including screening and vaccination history along with perceived barriers.

Collected data were entered into Microsoft Excel and analyzed using appropriate statistical software. Descriptive statistics were used to summarize variables and were expressed as frequencies and percentages. Associations between socio-demographic variables and knowledge, attitude, and practice outcomes were assessed using the chi-square test, and logistic regression analysis was performed to identify predictors of cervical cancer screening behavior. A p-value < 0.05 was considered statistically significant.

The study protocol was approved by the Institutional Ethics Committee, and written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity of participants were maintained throughout the study.

Results

Table 1
Socio-demographic characteristics of the study participants (n = 352)

Variable	Category	n	%
Age (years)	10–19	82	23.3
	20–29	204	58.0
	30–39	43	12.2
	40–49	22	6.3
	50–59	1	0.3
Residence	Rural	115	32.8
	Semi-urban	2	0.6
	Urban	234	66.7
Religion	Hindu	303	86.1
	Muslim	36	10.2
	Christian	13	3.7
Marital status	Married	101	28.7
	Unmarried	251	71.3
Parity	None	265	75.3
	≥1 child	87	24.7
Education	Illiterate	26	7.4
	Primary	61	17.3
	Secondary	77	21.9
	College/University	188	53.4
Occupation	Student	225	63.9
	Employed	54	15.3
	Unemployed	47	13.4
	Homemaker	25	7.1
	Retired	1	0.3
Income	No income	301	85.5
	Any income	51	14.5

Table 2
Knowledge regarding cervical cancer and its prevention (n = 352)

Knowledge variable	Yes n (%)	No n (%)	Maybe n (%)
Awareness of cervical cancer	217 (61.7)	129 (36.6)	6 (1.7)

Knowledge variable	Yes n (%)	No n (%)	Maybe n (%)
Knowledge of symptoms*	325 (92.3)	27 (7.7)	—
Knowledge of risk factors*	325 (92.3)	27 (7.7)	—
Knowledge of prevention*	325 (92.3)	27 (7.7)	—
Awareness of HPV vaccination	153 (43.5)	191 (54.3)	8 (2.3)
Awareness of Pap smear	111 (31.5)	234 (66.5)	7 (2.0)
Knowledge of screening frequency	106 (30.1)	246 (69.9)	—

*At least two correct responses.

Table 3
Attitudes toward cervical cancer and screening (n = 352)

Statement	Agree n (%)	Neutral n (%)	Disagree n
Cervical cancer is a serious disease	230 (65.3)	95 (27.0)	27 (7.7)
Any adult woman can acquire cervical cancer	230 (65.3)	95 (27.0)	27 (7.7)
Screening helps prevent cervical cancer	230 (65.3)	95 (27.0)	27 (7.7)
HPV vaccination prevents cervical cancer	204 (58.0)	107 (30.4)	41 (11.6)
Willing to receive HPV vaccination	230 (65.3)	95 (27.0)	27 (7.7)
Will encourage others for screening/vaccination	294 (83.5)	36 (10.2)	22 (6.3)

Table 4
Preventive practices related to cervical cancer (n = 352)

Practice	Yes n (%)	No n (%)
Ever received HPV vaccination	24 (6.8)	328 (93.2)
Ever screened for cervical cancer	12 (3.4)	340 (96.6)

Table 5
Barriers to cervical cancer screening and vaccination (n = 352)

Barrier	n	%
Lack of awareness	133	37.9
Cost of screening	43	12.0
Lack of perceived benefit	36	10.3

Barrier	n	%
Lack of time	26	7.3
Fear or embarrassment	16	4.6
Limited access to healthcare	16	4.6
Multiple barriers	82	23.3

Table 6
Association between residence and awareness of Pap smear screening

Residence	Aware n (%)	Not aware n (%)
Rural	20 (17.4)	95 (82.6)
Urban	91 (38.9)	143 (61.1)

$\chi^2 = 11.53$, **p = 0.003**

Table 7
Knowledge, attitude, and practice scores

Domain	Category	n	%
Knowledge	Good (>50%)	231	65.4
	Poor (≤50%)	122	34.6
Attitude	Favorable	231	65.4
	Unfavorable	122	34.6
Practice	Good	12	3.4
	Poor	340	96.6

Table 8
Logistic regression analysis for predictors of cervical cancer screening

Variable	B	p-value	Interpretation
Knowledge	2.97	0.016	Significant predictor
Education	—	>0.99	Not significant
Residence	—	>0.05	Not significant

Socio-demographic Characteristics

A total of 352 women participated in the study. The majority of respondents were aged 20–29 years (58.0%), followed by 10–19 years (23.3%), while only 18.8% were aged 30 years and above. Most participants resided in urban areas (66.7%), with 32.8% from rural areas. The study population was predominantly Hindu (86.1%), followed by Muslims (10.2%) and Christians (3.7%).

With regard to marital status, 71.3% of participants were unmarried and 28.7% were married. Large proportions were nulliparous (75.3%). More than half of the respondents had attained college or university education (53.4%), while 7.4% were illiterate. The majority were students (63.9%), followed by employed (15.3%) and unemployed (13.4%) participants. Most respondents reported no personal income (85.5%).

These socio-demographic characteristics are summarized in Table 1.

Knowledge Regarding Cervical Cancer and Screening

Overall, 61.7% of participants reported being aware of cervical cancer, whereas 36.6% had no awareness (Table 2). The distribution of awareness was statistically significant (χ^2 = 367.70, $p < 0.001$). Knowledge regarding symptoms, risk factors, and preventive measures was high, with 92.3% of respondents correctly identifying at least two items in each category.

In contrast, awareness of Pap smear screening was considerably lower (31.5%), and this difference was statistically significant (χ^2 = 126.50, $p < 0.001$) (Table 2). Awareness of HPV vaccination as a preventive measure was reported by 43.5% of respondents, while more than half (54.3%) were unaware of its role. Additionally, nearly 70% of participants did not know the recommended screening frequency for cervical cancer. Detailed knowledge responses are presented in Table 2.

Attitude Towards Cervical Cancer and Screening

Attitudinal assessment showed that 65.3% of respondents agreed that cervical cancer is a serious disease and that screening plays a role in prevention. A similar proportion believed that any adult woman could acquire cervical cancer. More than half (58.0%) agreed that HPV vaccination can prevent cervical cancer and 65.3% expressed willingness to receive vaccination in the future. Notably, 83.5% reported that they would encourage others to undergo screening or vaccination. Overall, 65.4% of respondents demonstrated a favorable attitude toward cervical cancer prevention. Attitude responses are summarized in Table 3.

Practices Related to Cervical Cancer Prevention

Despite moderate awareness and favorable attitudes, preventive practices were poor. Only 6.8% of respondents had received HPV vaccination and merely 3.4% had ever undergone cervical cancer screening (Table 4).

The most frequently reported barriers to screening or vaccination included lack of awareness (37.9%), cost of screening (12.0%), lack of perceived benefit (10.3%), lack of time (7.3%), fear or embarrassment (4.6%) and limited access to healthcare services (4.6%). These barriers are detailed in Table 5.

Association Between Residence, Knowledge, and Practice

A statistically significant association was observed between place of residence and awareness of Pap smear screening, with urban respondents demonstrating higher awareness compared to rural respondents (χ^2 = 11.53, $p = 0.003$) (Table 6).

Overall KAP scoring showed that 65.4% of participants had good knowledge, 65.4% demonstrated a favorable attitude, while only 3.4% reported good preventive practices, indicating a marked knowledge–practice gap (Table 7).

Logistic regression analysis identified knowledge of cervical cancer as a significant predictor of screening behavior ($B = 2.97$, $p = 0.016$). Other socio-demographic variables, including education and residence, were not statistically significant predictors of screening uptake (Table 8).

Discussion

The present study evaluated the knowledge, attitude and practices related to cervical cancer and its screening among women attending a tertiary care hospital and identified a clear disparity between awareness, favorable attitudes and actual preventive practices. Although most participants demonstrated adequate knowledge and positive attitudes toward cervical cancer prevention, screening uptake and HPV vaccination rates were notably low.

The predominance of younger, unmarried and nulliparous women in the study population likely

contributed to the low screening rates observed. Cervical cancer screening is typically recommended for women aged 30 years and above, and younger women may perceive themselves to be at lower risk, resulting in limited engagement with screening services. Additionally, the high proportion of students and participants without personal income suggests potential financial and access-related constraints.

While knowledge of cervical cancer symptoms, risk factors and preventive measures was relatively high, awareness of specific screening methods such as the Pap smear test and recommended screening intervals was considerably lower. This highlights a critical gap between general disease awareness and actionable knowledge regarding preventive services. Similar trends have been reported in other studies from low and middle income settings.

Attitudes toward cervical cancer prevention were largely favorable, with most participants recognizing the seriousness of the disease and expressing willingness to undergo screening or vaccination in the future. Cultural or religious beliefs were not perceived as significant barriers, indicating that modifiable factors such as accessibility, affordability and healthcare provider engagement may have a greater influence on preventive behavior.

Despite favorable knowledge and attitudes, preventive practices remained poor, demonstrating a pronounced knowledge practice gap. Commonly reported barriers included lack of awareness, cost of screening, fear or embarrassment and limited access to healthcare facilities. These findings emphasize that information alone is insufficient to drive behavioral change and that systemic and structural interventions are required.

The significant association between place of residence and awareness of Pap smear screening reflects persistent urban–rural disparities in access to health information and services. However, the absence of a significant association between knowledge and screening practice further underscores the need for integrated strategies that combine education with improved service delivery.

Overall, the findings suggest that strengthening organized screening programs, integrating cervical cancer screening into routine healthcare services, reducing financial barriers and enhancing healthcare provider–initiated counseling are essential to translate knowledge and positive attitudes into effective preventive practices.

Strengths and Limitations

A key strength of the present study is the inclusion of anadequate sample size, which enhances the reliability of the findings. The use of a structured and pre-tested questionnaire allowed for a comprehensive assessment **of** knowledge, attitudes and practices related to cervical cancer and its screening, ensuring consistency and content validity across responses.

However, the study has certain limitations. As a single-center, hospital-based study, the findings may not be fully generalizable to the wider population. Additionally, the reliance on self-reported data may be subject to recall bias and social desirability bias, which could influence participants' responses regarding screening and vaccination practices.

Conclusion

Despite moderate levels of awareness and generally positive attitudes toward cervical cancer prevention, screening and vaccination practices remain alarmingly low among women. This highlights a substantial knowledge–practice gap**,** indicating that awareness alone is insufficient to promote preventive health behavior. Strengthening community-based awareness programs, improving accessibility and affordability of screening services and integrating cervical cancer screening into routine healthcare delivery are essential steps toward increasing screening uptake and reducing the burden of cervical cancer in India.

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Conflict of Interest

The authors declare no conflict of interest.

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