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Original Research Article

Acceptance of human papillomavirus vaccination and factors among mothers of 14 year old daughters Mattu Ethiopia: a cross-sectional study 2023

Abeya Fufa Worke[1]*, Bilisumamulifna Tafera Kefeni[2]

[1]Department of Midwifery, Health Science College, Metu, Ethiopia
[2]Department of Public Health, Health Science College, Metu, Ethiopia

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***Correspondence:**
Dr. Abeya Fufa Worke,
E-mail: abeya.fufa@meu.edu.et

ABSTRACT

Background: Cervical cancer is a leading cause of mortality among women globally, with over one million cases attributed to human papillomavirus (HPV) types 16 and 18. In developing countries, including Ethiopia, cervical cancer ranks second in incidence and mortality, affecting approximately 6,294 women annually. This study aimed to assess the acceptance of HPV vaccination and identify associated factors among mothers/parents of 14-year-old daughters in Mattu Town, Oromia Regional State, Ethiopia, in 2023.
Methods: A community-based cross-sectional study was conducted from March to April 2023, involving 430 mothers/parents selected through systematic random sampling. Data were collected using a pretested questionnaire and analyzed using SPSS version 26.
Results: Out of 428 respondents (99% response rate), 80.6% (95% CI: 78.6-83.7) accepted HPV vaccination for their daughters. Acceptance was significantly associated with prior information exposure (AOR=3.0, 95% CI: 1.6-5.5), good knowledge of cervical cancer (AOR=4.0, 95% CI: 2.3-7.0), and a positive attitude towards vaccination (AOR=4.3, 95% CI: 2.7-7.5).
Conclusions: Over three-fourths of parents are open to vaccinating their daughters against HPV, influenced by their knowledge and attitudes. To increase vaccine acceptance, promote community education and behavior change through ongoing health programs in schools, community centers, and media. Key players include the Mattu Town health office, schools, and NGOs.

Keywords: Cervical cancer, HPV, Vaccination acceptance, Parents, Eligible daughters

INTRODUCTION

Cervical cancer is a major health threat for women worldwide, with high-risk HPV strains-especially HPV-16 and HPV-18-responsible for about 70% of cases. A study in south-central Ethiopia also identified other high-risk types, including HPV-16, 35, 52, 31, and 45.[1]

This disease is one of the leading causes of cancer-related deaths among women, ranking fourth globally and second in developing countries, after breast cancer. The situation is especially dire in sub-Saharan Africa, which bears over 70% of the global cervical cancer burden, with around 70,000 new cases reported every year. In Ethiopia alone, an estimated 6,294 women are diagnosed annually, and sadly, more than three-quarters of them do not survive.[2]

Preventing cervical cancer requires a combination of strategies, including raising awareness, providing vaccines, ensuring access to screening and offering affordable treatment. The world health organization (WHO) recommends a two-dose HPV vaccine for girls aged 9 to 13, ideally before they become sexually active.[3] Currently, two main HPV vaccines are available: the

bivalent vaccine, which protects against HPV-16 and 18, and the quadrivalent vaccine, which also covers HPV-6 and 11.[4]

Since the first HPV vaccine was introduced in 2006, countries with high vaccination rates have seen a dramatic drop in HPV infections (by 73-85%) and a significant decline in high-grade cervical lesions (by 41-57%).[5]

However, in Ethiopia, many misconceptions about cervical cancer persist due to limited awareness and inadequate health-seeking behaviors. Understanding these barriers is crucial before implementing large-scale prevention programs.[6]

Vaccine hesitancy is a complex issue shaped by personal beliefs, cultural factors, and concerns about vaccine safety.[7] Despite the clear benefits of HPV vaccination in reducing cervical cancer rates, acceptance remains low in many developing countries.[8]

This study aims to explore how parents in selected Kebeles of Ilu Abba Bora Zone, Southwest Ethiopia, perceive the HPV vaccine and what factors influence their willingness to accept it in 2023.

METHODS

Study sample

The study sample was all mothers/parents who had 14 years old daughters living in Mattu Town.

Sample size determination

The sample size was calculated by using both single and double population proportion formula. The sample size for the first objective is calculated using a single population proportion formula assuming 95% confidence interval (CI), 4% marginal error (d), and 79.5% proportion of HPV vaccine acceptance in Bench Sheko zone, south-west Ethiopia, which yielded the sample size of 430 with 10% of non-response rate.[2]

$S=Z^2\times p(1-p)\times d/m^2$

Given confidence level 95%=z value 1.96

The expected acceptance is 79.5%

Margin of error=0.04

$s=(1.96)^2\times 0.795(1-0.795)\times 1.5/(0.04)^2=391+39(10\%)$

=430 will be total sample size, where: s-sample size, Z-z score

p-Population proportion, m-Margin of error

Sampling procedures

A random sampling technique was used to recruit participants. Initially, seven kebeles were selected from 16 kebeles in the Woreda area using a simple random sampling method (lottery approach). Subsequently, a systematic sampling technique was employed to select 430 households within the chosen kebeles.

The sample size of each kebele was allocated proportionally based on its population size. Eligible participants included mothers or parents of daughters aged 14 years who had resided in Mattu for a minimum of six months and provided written consent to participate. Individuals who were mentally incompetent, severely ill, or unavailable during data collection (after two separate visits) were excluded from the study. In cases where no eligible individual was found in the household, the next household was selected as the replacement.

Inclusion criteria

Mothers of daughters aged 14 years residing in selected Kebeles currently attending school were included.

Exclusion criteria

Mothers or parents who were absent from home for more than two days during the data collection period, as well as those with mental health difficulties or communication difficulties were excluded.

Study variables

Dependent variable: HPV vaccine acceptance

Independent variables: In socioeconomic status, age, sex, marital status, monthly income, and educational attainment of the parents.

Behavioral factors: Knowledge regarding cervical cancer, HPV, and HPV vaccinations, and attitudes toward vaccination.

Sources of vaccine: Related information.

Operational definitions

Eligible parents: Mothers or guardians of daughters aged 14 years.

Knowledge scores: A scoring system in which each correct answer receives one point and incorrect/unknown answers receive 0 points. Total knowledge scores ranged from 0 to 13, with scores of 0-7 indicating poor knowledge and scores of 8-13 indicating good knowledge.[3]

Attitude assessment: Attitudes will be classified as positive or negative based on an average score calculated

from the attitude questionnaire. Average scores of 6 or below are classified as negative.[3]

Vaccine acceptance: Participants will score one for willingness to receive the vaccine and 0 for unwillingness.

Data collection tool and procedure

Data were collected using a face-to-face, interviewer administered questionnaire. Six health workers (Clinical nurses, BSc holders, or health officers) served as data collectors supervised by two individuals with qualifications as health officers/BSc or master's-level residents residing in Mattu. The questionnaire comprised five sections: Socio-demographic information, sources of information, HPV knowledge, attitude toward HPV vaccinations and HPV vaccine acceptance.

The questionnaire was initially drafted in English, translated into Afaan Oromo by professional translators, and then back-translated to English to ensure consistency. Validation was conducted by three experts in the field. The final version of Afaan Oromo was used for data collection. A pilot study involving 5% of the sample (21 participants) was conducted one week before the main data collection to test the reliability of the tool, yielding a Cronbach's alpha value between 0.6 and 0.7.

Data quality control

To ensure data integrity, a pretest was conducted before the main data collection phase. This pretest involved a sample of 5% (21 participants) from Bure Woreda, located outside Mattu Town. Data collectors and supervisors received two days of training on the study objectives and data collection methods. Daily meetings were held between principal investigators, data collectors, and supervisors to address any challenges encountered during data collection. Data collectors were responsible for submitting their collected data to the principal investigator, who checked for completeness and accuracy.

Data processing and analysis

The collected data were entered into Epi-data version 4.6.0 for initial processing and subsequently analyzed using SPSS version 26. Descriptive statistics were employed to summarize the participants' sociodemographic characteristics and outcome variables. Continuous variables that followed a normal distribution were reported as mean (SD), whereas non-normally distributed continuous variables were expressed as median (IQR). Categorical variables were summarized using tables, graphs, and percentages. In simple binary logistic regression, variables with a p value of less than 0.2 were considered candidates for multivariate logistic regression analysis. This analysis identified associations between dependent variables. The goodness of fit of the model was assessed using the Lemeshow-Hosmer test. Statistical significance was determined using the 95% CI for adjusted odds ratios (p=0.05). Results were presented in textual form, tables, and graphs.

Data availability statement

The data shared in this study, including Table 4 were gathered through a community-based cross-sectional survey conducted in 2023. This table highlights key factors influencing HPV vaccine acceptance among the participants. The dataset, which is anonymized and presented in an aggregated format, can be accessed by contacting the corresponding author. Access will be provided in compliance with ethical guidelines and requires a formal data-sharing agreement to protect participant confidentiality.

Ethical considerations

Ethical approval for this study was obtained from the Mattu university review board. Mothers or guardians of daughters aged 14 years who participated in the study were informed about the study's purpose and provided written informed consent. At the conclusion of each interview, data collectors provided information regarding the importance of HPV vaccination. All procedures adhered to relevant ethical guidelines, and informed consent was obtained in accordance with established protocols.

Data dissemination

The analyzed data were presented using tables and bar charts to effectively communicate the findings. Dissemination of this data will occur through multiple channels, including PowerPoint presentations, printed reports, and email communications. Key stakeholders involved in the dissemination process include: Mattu university college of health sciences, Ilu Abba Bora zonal health office and both Woreda and town health offices

This multifaceted approach aims to ensure that relevant parties are informed and can utilize the findings to enhance public health initiatives related to HPV vaccination.

RESULTS

Socio-demographic characteristics of parents

A total of 428 parents, predominantly mothers of daughters aged 14 years, were interviewed, yielding a response rate of 99%. The mean age of the respondents was 36.7 years (±6.3 SD). A significant majority, 347 (81%) were female, with 334 (96%) identifying as mothers. More than half of the respondents, 335 (78%), were married, and 284 (66%) reported having a primary education or lower. The predominant occupational categories among respondents included housewives,

farmers, the unemployed, and other informal occupations, accounting for 337 (78.7%) respondents.

In terms of familial relationships, 334 (78.3%) of respondents were mothers to their daughters. Religious affiliation revealed that 172 (40.2%) were Muslim, while 304 (71%) were of Oromo ethnicity. Furthermore, 351 (82%) respondents resided in rural areas. Notably, nearly all respondents, 419 (98%) reported having only one daughter (Table 1).

Source of HPV vaccination information

The majority of our study participants had some information about the human papilloma virus vaccination, 343 (80%), out of which 175 (51%), 120 (35%), and 48 (14%) were from health care providers, the media, and the community, respectively. Below is a pie chart indicating the source of the information (Figure 1).

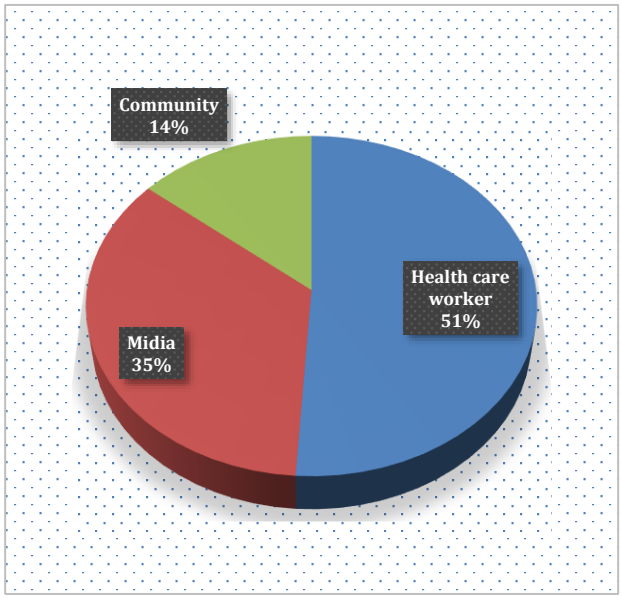

Figure 1: Source of information for parents of 14 years old daughters in Mattu Town, Oromia regional state, Southwest Ethiopia, 2023, (n=428).

Knowledge about HPV and its effects

The findings indicate that a substantial portion of respondents, specifically 235 (54.9%), exhibit limited awareness regarding the HPV vaccine. Among the participants, 387 (90.4%) reported having heard of cervical cancer (CC); however, only 280 (65.4%) recognized that CC is a disease affecting the genital tract, and merely 237 (55.4%) acknowledged that HPV can lead to cervical cancer.

Furthermore, over half of the participants, totaling 300 (70.1%), were unaware that HPV is transmitted through sexual contact. Additionally, 197 (46%) did not know the recommendation for HPV vaccination prior to the initiation of sexual activity, and 181 (42.3%) reported a lack of awareness that HPV infection is preventable (Table 2).

Attitude towards the HPV vaccine

A significant majority of participants, totaling 315 (73.6%) exhibited a positive attitude toward HPV vaccinations. Among the study cohort, 268 (62.6%) expressed the belief that their daughters were susceptible to HPV infection. Conversely, 89 (20.8%) mothers/guardians expressed confidence in HPV vaccine safety and efficacy. In addition, 91 (21.3%) respondents perceived that HPV vaccinations might lead to increased sexual activity, whereas 111 (25.9%) believed that vaccinating their daughters against HPV could encourage early sexual initiation. Furthermore, 165 (38.6% mothers/guardians felt that HPV vaccinations promoted risky sexual behaviors among adolescents.

Concerns about potential side effects were also prevalent, with 376 (87.9%) mothers and guardians expressing fear of mild adverse reactions to the HPV vaccine in their daughters. A substantial proportion, 358 (83.6%), feared that the vaccine could lead to infertility. Additionally, 114 (26.6%) respondents believed that only promiscuous individuals would benefit from the vaccine. The results regarding attitudes toward HPV vaccinations are summarized in (Table 3).

HPV vaccination acceptance

A substantial proportion of parents, specifically 345 (80.6%), indicated willingness to accept HPV vaccinations for their daughters, with a 95% CI of (1.16, 1.23).

Factors associated with HPV vaccine acceptance

In our analysis, more than three-fourths of the participants' daughters had been vaccinated against HPV (345, or 80.6%). Bivariate analysis revealed several factors associated with HPV vaccine acceptance, including access to HPV information, religion, and marital status, attitudes toward HPV, knowledge of cervical cancer, number of daughters, residence, ethnicity, and parental occupation, at a significance level of $p<0.25$.

Subsequent multivariate logistic regression analysis identified that hearing information about HPV vaccinations, possessing knowledge about cervical cancer, and having a positive attitude toward HPV vaccinations were significantly associated with vaccine acceptance at a $p<0.05$.

Specifically, parents who had received information regarding HPV vaccinations were three times more likely to accept vaccination for their daughters than those who had not heard such information (Adjusted odds ratio [AOR]=3, 95% CI 1.6, 5.5). Furthermore, parents with

good knowledge of cervical cancer were four times more likely to accept HPV vaccinations than those with poor knowledge (AOR=4, 95% CI 2.3, 7).

Additionally, parents of daughters with a positive attitude toward HPV were 4.3 times more likely to accept the vaccine compared with those whose daughters held negative attitudes (AOR=4.3, 95% CI 2.7, 7.5), as summarized in (Table 4).

The final model's fit was assessed using the chi-square test, which yielded a significant result at p<0.001. The model demonstrated good fit according to the Hosmer-Lemeshow test (p=0.46).

Table 1: Socio-demographic characteristics of parents of 14 years old daughters in Mattu Town, Oromia regional state, Southwest Ethiopia, 2023, (n=428).

Socio-demographic characteristics		N (%)
Sex	Male	81 (19)
	Female	347 (81)
Residence	Urban	77 (18)
	Rural	351 (82)
Marital status	Married	335 (78)
	Single	30 (7)
	Divorced	37 (8.6)
	Widowed	26 (6.1)
Occupation	Civil servant	44 (10.3)
	Merchant	47 (11)
	Farmer	50 (11.7)
	House wife and others	287 (67.1)
Education status	Secondary and above	144 (33.6)
	Primary	199 (46.5)
	Cannot read and write	85 (19.9)
Respondent relation to daughter	Mother	334 (78.3)
	Father	30 (7)
	Other relatives	13 (3)
Ethnic	Oromo	304 (71)
	Amhara	69 (16.1)
	Tigre	23(5.4)
	Others	32 (7.5)
Age (in years)	≤24	1 (0.2)
	24-34	168 (39.3)
	34-44	208 (48.6)
	≥44	51 (11.9)
Income (in ETB)	≥4000	40 (9.3)
	2000-4000	9 (2.1)
	≤2000	379 (88.6)
Religion	Orthodox	120 (28)
	Muslim	172 (40.2)
	Protestant	136 (31.8)
No of daughter	One	419 (98)
	More than one	9 (2)

Table 2: Knowledge about HPV and its risk factors among parents who have 14 years old daughter in Mattu Town, Southwest Ethiopia, 2023, (n=428).

Variables	Categories	Frequency	Percent (%)
Diseases of genital tract	Incorrect	280	65.4
	Correct	148	34.6
HPV can cause CC	Incorrect	191	44.6
	Correct	237	55.4
HPV infections are preventable	Incorrect	181	42.3
	Correct	247	57.7
HPV infection is transmitted by sexual contacts	Incorrect	300	70.1
	Correct	128	29.9

Continued.

Variables	Categories	Frequency	Percent (%)
A vaccine against HPV infections does exist	Incorrect	116	27.1
	Correct	312	72.9
HPV vaccine is recommended before the onset of sexual activity	Incorrect	197	46
	Correct	231	54
HPV vaccine recommended to protect cervical cancer in the future	Incorrect	124	29
	Correct	304	71
HPV vaccine can be offered to a female age of 9-14 years old	Incorrect	88	20.6
	Correct	340	79.4
HPV vaccine is only for women who have multiple sexual partner	Incorrect	417	97.4
	Correct	11	2.6
HPV vaccine requires for 2 rounds of vaccination for daughters of 14 years	Incorrect	92	21.5
	Correct	336	78.5
HPV can cause infertility	Incorrect	367	85.7
	Correct	61	14.3
Do you HPV vaccine is given in schools	Incorrect	53	12.4
	Correct	375	87.6

Table 3: Attitude towards HPV vaccine among parents who have 14 years old daughters in Mattu Town, Southwest Ethiopia, 2023, (n=428).

Variables	Categories	Frequency	Percent (%)
Do you think those who promiscuous would only benefit from the vaccine	Incorrect	314	73.4
	Correct	114	26.6
Do you think HPV vaccine is effective in preventing CC	Incorrect	65	15.2
	Correct	363	84.8
Are you afraid of minor side effect of HPV vaccine for your daughter	Incorrect	376	87.9
	Correct	52	12.1
Do you fear of infertility from HPV vaccine for your daughter	Incorrect	358	83.6
	Correct	70	16.4
Information on HPV helps us to decide to vaccinate our daughter to vaccinate	Incorrect	88	20.6
	Correct	340	79.4
Would vaccinate your daughter if vaccine freely available	Incorrect	92	21.5
	Correct	336	78.5
HPV vaccination will not promote risky sexual behaviors among teenagers	Incorrect	165	38.6
	Correct	263	61.4
HPV vaccination will not encourage your daughter to start sexual activity	Incorrect	111	25.9
	Correct	317	74.1
Do you think HPV vaccination will not leads to complicated sexual activity	Incorrect	91	21.3
	Correct	337	78.7
Do you think being vaccinated for HPV reduces risk of having HPV infection	Incorrect	70	16.4
	Correct	358	83.6
Do you think HPV vaccine is safe and effective	Incorrect	89	20.8
	Correct	339	79.2
Do you think your daughter is susceptible to HPV infection	Incorrect	160	37.4
	Correct	268	62.6

Table 4: Bi-variable and multivariable analysis of factors associated with the acceptability of HPV vaccination among parents of 14 years old daughters in Mattu Town, Southwest Ethiopia, 2023, (n=428).

Variables		HPV acceptance		Logistic regression analysis			
				Bivariate		Multivariate	
		Accepted (%)	Not accepted (%)	COR (CI)	P value	AOR (CI)	P value
Residence	Urban	66 (86)	11 (14)	1.55 (0.78, 3)	0.21	1.5 (0.7, 3)	0.29
	Rural	279 (80)	72 (20)	1	1		
Sex of respondent	Female	279 (80)	68 (20)	0.93 (0.5, 1.7)	0.825	-	-
	Male	66 (82)	15 (18)	1			

Continued.

Variables		HPV acceptance		Logistic regression analysis			
		Accepted (%)	Not accepted (%)	Bivariate		Multivariate	
				COR (CI)	P value	AOR (CI)	P value
Ethnic	Oromo	244 (80)	60 (20)	2 (0.97, 4.6)	0.058	0.49 (0.2, 1.2)	0.122
	Amhara	61 (88)	8 (12)	3.9 (1.4, 11)	0.009	0.96 (0.28, 3)	0.9
	Tigre	19 (83)	4 (17)	2.5 (0.7, 9)	0.17	1.4 (0.6, 3.4)	0.4
	Others	21 (66)	11 (34)	1	1		
Religion	Orthodox	98 (82)	22 (18)	1.4 (0.78, 2.6)	0.25	0.77 (0.4, 1.8)	0.5
	Muslim	144 (84)	28 (16)	1.65 (0.94, 2.9)	0.08	1.15 (0.57, 2.3)	0.7
	Protestant	103 (76)	33 (24)	1		1	
Marital status	Married	274 (82)	61 (18)	1.99 (0.8, 4.8)	0.123	2.23 (0.74, 6.8)	0.155
	Single	23 (77)	7 (23)	1.46 (0.45, 4.8)	0.53	1.1 (0.4, 2.9)	0.8
	Divorced	30 (81)	7 (19)	1.9 (0.59, 6)	0.28	1.09 (0.37, 3)	0.9
	Widowed	18 (69)	8 (31)	1		1	
Educational status of respondent	≥Secondary	121 (84)	23 (16)	1.3 (0.66, 2.6)	0.44		
	Primary	156 (77)	47 (23)	0.9 (0.5, 1.7)	0.76		
	Cannot read and write	68 (84)	13 (16)	1			
Occupation of parent	Civil servant	38 (86)	6 (14)	1.7 (0.7, 4)	0.246	0.76 (0.19, 3)	0.7
	Merchant	41 (87)	6 (13)	1.8 (0.75, 4.5)	0.18	0.72 (0.2, 2.7)	0.6

DISCUSSION

This study aimed to evaluate the acceptance of HPV vaccination and the factors associated with such vaccination among parents of 14-year-old daughters in Mattu Town. Our findings indicate a high level of parental willingness to vaccinate their daughters against HPV, with significant associations identified between vaccine acceptance and factors such as prior exposure to HPV information, knowledge about the vaccine, and positive attitudes toward HPV vaccination.

Most of the participants in our study (343 people, or 80%) had some knowledge about HPV vaccination. A majority of them (175 people, or 51%) got their information from healthcare providers, while 120 people (35%) learned from media sources, and 48 people (14%) heard about it within their community. Just like similar research conducted in Kazakhstan, our findings highlight healthcare providers, media, and the community as the main sources of information about HPV vaccination.[4]

A significant number of respondents (235 or 54.9%) have limited awareness about the HPV vaccine. While most participants (387 or 90.4%) have heard of cervical cancer, only 280 (65.4%) know it affects the genital tract, and just 237 (55.4%) understand that HPV can cause cervical cancer. This study reviews the knowledge and attitudes of young people towards cervical cancer and HPV vaccination, highlighting that awareness levels are generally low, especially in developing countries.[5]

More than half of the participants (300 people or 70.1%) didn't know that HPV is sexually transmitted. The study also found that HPV awareness among US adults varies by education and race/ethnicity, with less than one-third aware that HPV can cause cancers beyond cervical cancer.[6]

In this study, a substantial majority of respondents (345, or 80.6%) expressed their acceptance of HPV vaccinations for their daughters and close family members. This rate aligns closely with findings from other studies conducted in Ethiopia, which reported acceptance rates of 79.5% in Bench-Sheko and 81% in Gondar.[7] However, higher acceptance rates were observed in other regions, such as Addis Ababa (98%) and Kenya (88%).[2,8] The similarities in acceptance rates between our study and those conducted in Gondar and Bench-Sheko may be attributable to comparable socioeconomic characteristics across these regions.[2] Conversely, the elevated acceptance rates noted in Addis Ababa and Kenya could be linked to the urban contexts of these studies, which likely facilitate greater access to healthcare resources, information, and education.

Additionally, a study conducted in Uganda reported that 78% of daughters were not vaccinated, a figure significantly lower than our findings. This discrepancy may stem from the Ugandan study's focus on a younger age group (10 to 14 years), which could influence vaccination rates.[9]

Our research found that having good knowledge about HPV significantly predicts whether parents are willing to vaccinate their daughters. This aligns with studies from Addis Ababa and Kenya which also highlight how crucial parental knowledge is in influencing vaccination decisions.[10,11] Parents who had prior knowledge about HPV were more inclined to vaccinate their daughters. Studies show that providing HPV information from multiple sources greatly improves vaccination rates,

raising awareness and fostering positive attitudes towards the vaccine.[2] Therefore, it is essential to design targeted awareness programs for parents, especially those with limited formal education, to enhance their understanding and acceptance of the HPV vaccine.

Parents with positive attitudes towards the HPV vaccine are more likely to vaccinate their daughters. 32 and 35 studies confirm that over two-thirds of parents showed a favorable attitude towards the HPV vaccine, despite limited HPV knowledge. These parents expressed readiness for vaccination if the services were available.

Targeted educational interventions for parents with negative attitudes toward the HPV vaccine could boost acceptance and future vaccination rates. The assumption that enhanced comprehension leads to more favorable perspectives fuels numerous efforts in the public realm of science dissemination. Studies have shown that parents' understanding of cervical cancer significantly influences their decision to accept the HPV vaccine for their children. Literature from Ethiopia, Tanzania, Western Uganda, and South Africa shows that having a positive attitude significantly enhances HPV vaccine acceptance.[12-15]

Parents with prior knowledge about HPV were more willing to vaccinate their daughters. Studies emphasizing HPV information significantly enhance vaccination rates. This exposure, from multiple sources, raises awareness and promotes positive attitudes towards this association.[11,16]

Parents cited healthcare professionals as their primary source of information, with media sources coming in second. The importance of information in fostering HPV vaccination awareness and acceptance cannot be overstated. Healthcare providers' direct recommendations can boost parents' confidence in vaccines. Instead, the study results suggest that school health education and community outreach, including the distribution of informational materials, play a minimal role in cervical cancer prevention. The lack of awareness and acceptance of the HPV vaccine among parents presents an opportunity for improvement in educational strategies.

Limitations

While our study sheds light on how parents view HPV vaccination, it’s important to recognize that we may have missed an essential part of the conversation: the daughters themselves. These young individuals are the ones receiving the vaccine, and understanding their thoughts and feelings could provide deeper insights into vaccine acceptance.

Additionally, we didn’t explore how easy it is for families to access healthcare services, which can greatly affect their ability to learn about HPV and get vaccinated.

CONCLUSION

Our findings show that a significant number of parents-over three-fourths-are open to vaccinating their daughters against HPV. This willingness is closely tied to how much information they have, their understanding of the vaccine, and their overall attitudes toward immunization.

To build on this positive momentum, we need to prioritize community education about HPV and vaccination. By ensuring that both parents and daughters are well-informed, we can create a supportive environment that encourages informed decisions about health.

Recommendations

To boost HPV vaccine acceptance, it's crucial to focus on behavioral change communication and education through continuous health initiatives in various settings. Key recommendations include:

For the Mattu town health office: Collaborate with district education offices and NGOs to improve HPV vaccine knowledge, targeting mothers of eligible daughters.

Utilization of social media: Spread information via local social media platforms to enhance community knowledge and attitudes.

Community outreach: Promote HPV vaccine education through community radio stations or similar media outlets.

For health facilities: Develop comprehensive education programs about the HPV vaccine in collaboration with local schools.

Engagement of health professionals: Encourage healthcare workers to educate parents about the benefits of the HPV vaccine through home visits and community outreach.

For schools: Actively educate students and their families about the HPV vaccine through school activities, media, and community outreach.

For the ministry of health: Broadcast informative messages on TV and radio, and invite health professionals to address misconceptions. Distribute leaflets about the HPV vaccine nationwide, particularly targeting less educated parents. Create targeted materials about HPV vaccination with the help of regional and zonal health departments.

For the scientific community: Conduct additional studies to explore causal relationships related to HPV vaccination acceptance and effectiveness.

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