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**Health Communication Strategies Used by Health Care Workers on HPV Vaccine Uptake for Cervical Cancer Prevention among Caregivers of Young Adolescent Girls Aged 10 -14 Years in Kajiado County**

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**Health Communication Strategies Used by Health Care Workers on HPV Vaccine Uptake for Cervical Cancer Prevention among Caregivers of Young Adolescent Girls Aged 10 - 14 Years in Kajiado County**

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**Abstract**

**Purpose:** This study sought to establish health communication strategies used by Health Care Workers on HPV vaccine uptake for cervical cancer prevention among caregivers of young adolescent girls aged 10 -14 years in Kajiado County.

**Methodology:** The study applied a mixed method research design. It combined qualitative and quantitative study approaches. This study utilized Health Belief Model (HBM) and Protection Motivation Theory (PMT). The population of the study included all the parents/caregivers of the young adolescent girls 10 – 14 years in Kajiado County who passed the inclusion and exclusion criteria. The study adopted multi-stage sampling to select the respondents and the location of study. Purposive sampling was applied to choose Kajiado County. Four out of all the 5 sub counties/constituencies namely; Kajiado Central, Kajiado South, Kajiado East and Kajiado West were included in the study.

**Findings:** The study found that messages create awareness that women can take control of their reproductive health situation with regard to cervical cancer prevention. The findings also showed that creating awareness on cervical cancer and HPV vaccines by healthcare workers can reduce HPV vaccine misconceptions amongst caregivers/guardians. This can also lead to an increase in HPV vaccine uptake.

**Unique Contribution to Theory, Practice and Policy:** HPV vaccination programs should focus on raising awareness about cervical cancer disease prevention, including information on HPV vaccination, screening, and healthy lifestyle choices. The study therefore recommended that there is need to intensify health communication awareness programs that specifically target adolescent girls.

**Keywords:** *Health Communication, HPV Vaccine Uptake, Cervical Cancer, Caregivers*

**JEL Codes:** *I12, I18, I11, D13*

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## INTRODUCTION

Cervical cancer is a global public health concern, ranking as the fourth most common cancer among women and a leading cause of cancer-related deaths worldwide (WHO, 2014; Lancet, 2023). The burden is disproportionately high in low- and middle-income countries, where prevention and treatment resources remain limited. The World Health Organization emphasizes HPV vaccination for adolescent girls as the cornerstone of primary prevention, complemented by screening and treatment strategies for older women.

In sub-Saharan Africa, cervical cancer continues to be the leading cause of cancer-related mortality among women. Despite the availability of HPV vaccines, uptake across the region remains low, hindered by structural barriers, cultural misconceptions, and limited awareness. These challenges underscore the importance of communication strategies that not only disseminate information but also build trust and address hesitancy.

Kenya reflects this regional trend. Although HPV vaccines are accessible, coverage among girls aged 10–14 years remains below target levels. Caregivers often express concerns rooted in misinformation, cultural beliefs, and vaccine-related fears, which weaken confidence in immunization programs (Kiprono et al., 2025). Scholars highlight the need for multi-sectoral engagement, health professionals, educators, community leaders, and media platforms, to strengthen vaccine literacy and acceptance.

Kajiado County presents a critical case within this national context. As a predominantly rural and pastoralist area, it faces unique communication challenges: limited access to mass media, reliance on centralized urban-based messaging, and cultural dynamics that shape caregiver decision-making. Campaigns that fail to tailor messages to local realities risk excluding adolescents who lack access to radio, television, or internet platforms (Kemunto et al., 2022).

This study therefore adopts health communication as its central lens of inquiry. Communication is not simply one determinant among many; it is the mechanism through which caregivers' perceptions are shaped, trust is cultivated, and behavior change is achieved. By examining the strategies used by health care workers in Kajiado County, the study sought to understand how communication practices can enhance HPV vaccine uptake and contribute to cervical cancer prevention among adolescent girls.

### Problem Statement

Cervical cancer remains a global public health challenge, with a particularly high burden in low- and middle-income countries (LMICs). Despite ongoing global vaccination campaigns, uptake of the human papillomavirus (HPV) vaccine remains low in many developing regions, particularly in sub-Saharan Africa (Asgedom et al., 2024). Estimates indicate that maternal cancers contribute significantly to orphanhood, with cervical cancer accounting for approximately 210,000 cases globally, 35% of which occur in Africa (Guida et al., 2020). To address this burden, the World Health Organization has set elimination targets through the 90–70–90 strategy by 2030: vaccinating 90% of girls by age 15, screening 70% of women by ages 35 and 45, and ensuring 90% of women with cervical disease receive appropriate management (Deependra et al., 2020; Zhang, 2020).

In Kenya, HPV vaccine coverage remains below target levels. While disruptions caused by the COVID-19 pandemic contributed to reduced uptake, persistent challenges such as misinformation and low demand continue to hinder progress (Karanja-Chege, 2022). Existing studies have examined the role of health communication in cervical cancer prevention (Agimas

et al., 2024; Oketch et al., 2023; Krieghoff et al., 2017; Logaraj, 2021). However, these studies provide limited insights into how specific communication strategies influence HPV vaccine uptake among caregivers of adolescent girls.

This research therefore, sought to address this gap by investigating the health communication strategies employed by health care workers and their influence on HPV vaccine uptake among adolescent girls aged 10–14 years in Kajiado County. Findings will contribute evidence to inform the Kenyan Ministry of Health, the Kajiado County Health Management Team, and potentially guide the development of national health communication guidelines for HPV vaccination.

## **LITERATURE REVIEW**

### **Theoretical Framework**

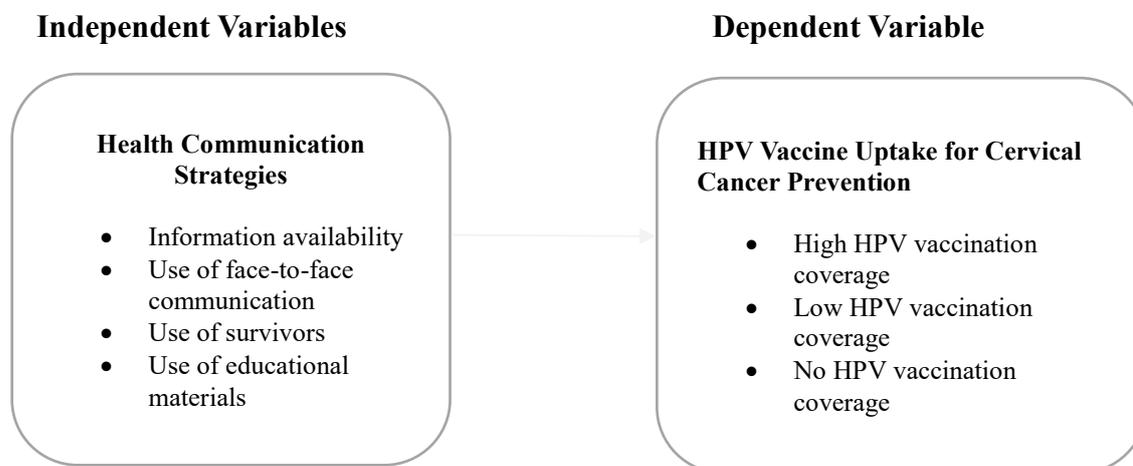
This study draws on two complementary psychological frameworks: the Health Belief Model (HBM) and Protection Motivation Theory (PMT).

The HBM, developed in the 1950s by Hochbaum, Rosenstock, and Kegels, posits that individuals' health behaviors are shaped by their perceptions of susceptibility to a health threat, the severity of its consequences, and the benefits versus barriers to taking preventive action (Alyafei & Easton, 2025). In the context of HPV vaccination, these perceptions are particularly relevant for caregivers, who act as the primary decision-makers for adolescent girls aged 10–14 years. Caregivers' beliefs about cervical cancer risk, vaccine safety, and benefits influence whether they consent to vaccination. Messages disseminated through trusted communication channels can shape these perceptions, offering cues to action that prompt vaccine uptake. The relevance of HBM to this study lies in its ability to explain how tailored, repeated messaging about cervical cancer symptoms, risks, and prevention can influence caregiver decisions that ultimately determine adolescent girls' engagement in protective health behaviors.

PMT, introduced by R.W. Rogers in the 1970s, further enriches this framework by focusing on the cognitive processes that drive protective behavior (Balla & Hagger, 2025). PMT distinguishes between threat appraisal (how individuals evaluate the risk of engaging in unhealthy behaviors) and coping appraisal (how they assess their ability to respond effectively). In this study, PMT is applied to both caregivers and adolescents. For caregivers, PMT helps illuminate how perceptions of vulnerability, severity, and self-efficacy shape their willingness to authorize vaccination. For adolescents, PMT explains how exposure to accurate, accessible health information can foster adaptive responses and reduce hesitancy, particularly in settings where HPV knowledge is limited.

By integrating both HBM and PMT, the study situates health communication as a strategic intervention capable of influencing vaccine-related decision-making in mediated contexts. Although adolescents are the direct recipients of the vaccine, caregivers' cognitive evaluations remain central because they authorize uptake. Thus, individual cognition is not only relevant but essential: it is the mechanism through which communication strategies translate into vaccination behavior in marginalized communities such as Kajiado County.

## Conceptual Framework



*Figure 1: Conceptual Framework*

As depicted in the figure above, the conceptual framework illustrates the relationship between health communication strategies (independent variable) and HPV vaccine uptake for cervical cancer prevention (dependent variable). The framework assumes that communication strategies directly influence caregivers' perceptions and decisions regarding vaccination. When caregivers receive messages that are clear, culturally appropriate, and perceived as credible, they are more likely to consent to vaccination, resulting in higher uptake. Conversely, poorly framed or negatively perceived messages contribute to hesitancy and low coverage.

Limited communication channels and resources can hinder efforts to counter misinformation and build trust. Evidence from behavioral and communication studies shows that effective health communication is essential for bridging vaccination gaps, increasing awareness, and combating hesitancy (O'Leary et al., 2024; Betsch et al., 2015). Provider–caregiver communication is particularly influential: caregivers are more likely to vaccinate their daughters when health professionals not only recommend HPV vaccination but also engage in dialogue that addresses concerns and emphasizes cancer prevention benefits (Brewer et al., 2017; Dempsey & O'Leary, 2018).

Research further demonstrates that vaccine acceptance is strongly associated with the availability of sufficient, comprehensible information. Zheng et al. (2025) found that high HPV vaccine acceptance among girls was linked to awareness of HPV and its prevention, while Vermandere (2016) highlighted the correlation between caregiver information access and adolescent vaccination uptake. These findings underscore the centrality of communication strategies in shaping vaccine-related decisions.

Thus, the conceptual framework situates health communication not merely as an information delivery mechanism but as a behavioral intervention that directly influences HPV vaccine uptake. By focusing on caregivers as mediated decision-makers for adolescent girls, the framework emphasizes the importance of communication strategies in overcoming hesitancy and achieving higher coverage in marginalized contexts such as Kajiado County.

## Empirical Review

Reno et al. (2019), examined the strategies for improving healthcare providers' communication about adolescent HPV vaccination. The study presents the evaluation of secondary outcomes in a multi-component communication-based intervention to improve healthcare providers' communication about HPV vaccination. Evaluation was conducted via surveys of providers participating in a 12-month randomized controlled trial. Findings suggest use of communication components (combined use of the presumptive approach [PA] with all patients, and motivational interviewing and a fact sheet with vaccine hesitant parents) contributed to providers in the intervention group reporting higher perceived levels of parental HPV vaccine acceptance than control providers, as well as increased vaccination rates in the intervention arm. However, the study does not explore how these communication strategies translate into real-world uptake among adolescents themselves, especially in rural or marginalized contexts where access to healthcare providers may be limited and health literacy remains low. The current study adds to this gap by examining how health communication strategies influence cervical cancer prevention among young adolescent girls in Kajiado County, Kenya, a rural setting where centralized messaging systems may not effectively reach the target population.

Foss (2019), did a study on health communication around HPV vaccination for adolescents in low and middle-income countries. The study conducted a systematic scoping overview of systematic reviews addressing a range of questions regarding communication around HPV vaccination. The study considered reviews published between 2007 and 2018 focusing on communication around HPV vaccination and that searched for qualitative or quantitative studies for inclusion. Data extraction was performed by one overview author and verified by a second. The review found that the small number of studies identified from low- and middle-income countries is of concern as these countries face the largest burden of disease related to HPV. This scoping overview also found and excluded a number of reviews because of important methodological limitations, highlighting the need for future reviews to use appropriate methods. The overview indicates areas in which further primary studies are needed on HPV vaccination communication in low- and middle-income countries. However, the study does not provide context-specific insights into how communication strategies are received and interpreted by adolescents themselves, particularly in rural settings where cultural norms and access barriers may shape vaccine perceptions. The current study adds to this gap by investigating the influence of health communication strategies on cervical cancer prevention among young adolescent girls in Kajiado County, Kenya, with emphasis on message relevance, delivery channels, and behavioral outcomes.

Oketch et al. (2023), conducted a study on communication strategies to improve human papillomavirus (HPV) immunization uptake among adolescents in sub-Saharan Africa. Two independent reviewers used standardized methods to search, screen and code included studies. Data extraction and assessment of risk of bias were done in duplicate to enhance validity of the results. Meta-analysis was conducted using the random-effects model. Findings were summarized and synthesized qualitatively. The study found that communication intervention to facilitate decision-making achieved uptake rate of 100%, followed by intervention to enable communication, which achieved 92%. Communication intervention to inform and educate achieved 90%. HPV vaccine communication is critical in ensuring that the community understands the importance of vaccination. The most effective communication strategies included those which educate the population about the HPV vaccine, facilitate decision-making

on vaccine uptake and community ownership of the vaccination process immunization. However, the study does not dis-aggregate how adolescents themselves interpret and respond to these communication strategies. The current study adds to this gap by focusing on young adolescent girls in Kajiado County, Kenya, where rural realities and limited access to conventional media may influence the effectiveness of HPV vaccine messaging. This addition emphasizes the need to tailor communication approaches to local contexts and adolescent-specific behavioral drivers.

Despite growing evidence on the role of communication in HPV vaccination, existing studies reveal important gaps that warrant further investigation. Provider-focused interventions have demonstrated improvements in parental acceptance, yet they do not fully explain how communication strategies translate into adolescents' actual uptake in rural or marginalized contexts (Reno et al., 2019). Systematic reviews highlight the scarcity of communication-focused HPV studies in low- and middle-income countries and the methodological limitations of those available, leaving unanswered questions about how cultural norms and delivery channels shape vaccine perceptions (Foss, 2019). Meta-analyses confirm the effectiveness of communication interventions in sub-Saharan Africa but fail to disaggregate how adolescents themselves interpret and respond to these strategies (Oketch et al., 2023). Collectively, these gaps underscore the need for context-specific research that examines caregiver–adolescent interactions, message relevance, and communication channels in rural settings such as Kajiado County, Kenya, where health communication strategies may critically determine HPV vaccine uptake.

## **METHODOLOGY**

A mixed method research design was used in this study. It combines qualitative and quantitative study approaches. A total of 422 participants were randomly selected from the study constituencies. Sample size was determined using Fisher et al., (1998) formula. Quantitative data was gathered through structured questionnaires administered to a representative sample comprising of 342 caregivers/guardians of young adolescent girls aged 10-14 years. Qualitative data was collected through focus group discussions (FGDs) involving 20 community health promoters, and 20 local leaders. Key informant interviews (KIIs) with stakeholders that consisted of 20 immunization staffs and 20 headteachers were also conducted. The study was conducted in Kajiado County. Kajiado County is a county in the former Rift Valley Province of Kenya. As of 2019, Kajiado County spanned an area of 21,292.7 km<sup>2</sup>, with a recorded population of 1,117,840. The population of the study included all the sampled caregivers/guardians of the young adolescent girls aged 10-14 years in Kajiado County who passed the inclusion and exclusion criteria. The study adopted multi-stage sampling to select the respondents and the location of study. Firstly, purposive sampling was applied to choose Kajiado County because of the increased cases of cervical cancer and low HPV vaccine uptake (Awich, 2019). Four out of all the 5 constituencies namely; Kajiado Central, Kajiado South, Kajiado East and Kajiado West were studied. Using simple random sampling, the research assistant selected one sub county hospital from each constituency. Thirdly, using each day's registration information both outpatient and MCH/FP, the research assistant systematically sampled the respondents. The research assistant selected every fifth registered caregiver as the study respondent until the entire sample size was attained. Permit to conduct the study was acquired from National Commission for Science, Technology & Innovation (NACOSTI). All the relevant stakeholders were informed as well prior to the study. To conduct the quantitative

data analysis, the Statistical Package for Social Sciences computer software package (SPSS statistics version 22) was used. The Quantitative data generated was subjected to the descriptive statistics feature in SPSS to generate mean, and standard deviation which was presented using tables, frequencies and percentages, while Qualitative data consisted of words and observations, not numbers.

Inferential statistics was used to present quantitative data, predict and make conclusions. The following linear regression model was adopted.

$$\text{Thus, } Y = \beta_0 + \beta_1 x_1 + e \dots\dots\dots (i)$$

**RESULTS**

**Response Rate**

A total of 342 questionnaires were administered to caregivers/guardians. A total of 287 were responded to which represents an 83.9 percent response rate. This was considered adequate for analytical purposes for the study.

**Descriptive Statistics**

**Descriptive Statistics of Health Communication Strategies on HPV vaccine uptake for Cervical Cancer Prevention**

The respondents were to fill on a Likert scale ranging from strongly disagree (SD), disagree (D), neutral (N), agree (A) and strongly agree (SA) on their view on health communication strategies on HPV vaccine uptake for cervical cancer prevention. The strategies on the questionnaire were clustered in the themes of: communication by health care workers, education by health care workers, recommendation of HPV vaccine by health care workers, parent/caregiver knowledge on cervical cancer and HPV vaccines, creating awareness by health care workers and motivational approaches by health care workers.

**Table 1: Health Communication Strategies on HPV Vaccine Uptake for Cervical Cancer Prevention**

S/No.	Communication Strategies	SD (%)	D (%)	N (%)	A (%)	SA (%)
1.	Communication	(0%)	(0%)	(0%)	(42.1%)	(57.9)
2.	Education	(0%)	(5.2%)	(15.8%)	(52.6%)	(26.3%)
3.	Recommendations	(5.2%)	(5.2%)	(10.5%)	(42.1%)	(36.8%)
4.	Parent/Caregiver knowledge	(0%)	(0%)	(19.8%)	(43.4%)	(36.8%)
5.	Awareness Creation	(0%)	(0%)	(21.1%)	(31.6%)	(47.4%)
6.	Motivational approaches	(0%)	(0%)	(19.2%)	(35.7%)	(45.1%)

From the findings in Table 1 above, 57.9% of the respondents strongly agreed and 24.1% agreed that communication by health care workers is highly effective. However, none of the respondent disagreed and this indicates that clear, direct communication from health care workers is a critical and trusted strategy in influencing caregivers' decisions. A large majority (78.9%) found educational efforts effective, though not as overwhelmingly as communication (100%). This suggests health education sessions are impactful, but could be strengthened or tailored further to increase conviction. Most caregivers (78.9%) value HCW recommendations. It emphasizes the authority and influence of health care workers, although a small group (10.4%) remains skeptical or unaffected. A majority (80.2%) believe that increasing caregiver knowledge plays a vital role in HPV vaccine uptake, indicating the need for targeted education

campaigns at the community/family level. High agreement (79%) shows that health communication awareness campaigns are well-received and likely contribute to positive vaccine attitudes, but the neutral group (21.1%) suggests some campaigns might lack reach or clarity. Motivational strategies such as encouragement, emotional appeals, or positive reinforcement are seen as effective by most (80.8%), underlining the value of empathetic, engaging messaging. The findings demonstrate that health communication by HCWs is a key driver of HPV vaccine uptake. Among the strategies, direct communication ranks highest in impact, education, recommendations, and awareness creation are also strongly supported.

Findings of the FGDs conducted in this study, supported the quantitative findings that caregivers of young adolescent girls primarily obtain information about cervical cancer and HPV vaccines from healthcare providers, community health workers, and local health facilities.

*Participant F5 stated..“We’ve heard about cervical cancer and HPV vaccination from our health workers during health talks. Some of us know it's important...”*

Key informant interviews findings further agreed with the quantitative and focus group discussions that health workers are the primary source of cervical cancer and HPV vaccine information.

*K4 stated..“We have strong outreach programs here; we go to the villages to educate people about the HPV vaccine. families understand its importance and some feel reassured to hear that the vaccines is safe and effective.”*

Both quantitative and qualitative findings are explained by the health belief model (HBM) and the protection motivation theory (PMT). HBM posits that an individual's health behaviors are influenced by their beliefs about a health threat and the effectiveness of actions to prevent it as well as by their assessment of the benefits and barriers of preventive actions. Likewise, PMT explains attitudes and behaviors toward vaccination. According to PMT, individuals decide to perform health-protective behaviors when they face a threatening event and believe that the preventative behaviors can reduce that threat (Shao et al., 2023). This is reflected in the focus group study findings as one of the participants said;

*“...We’ve seen the benefits of vaccines, so most of us are ready to consider it if it helps our families...” according to F1.*

This view is also expressed by Foss (2019) who systematically reviewed communication strategies in relation to HPV vaccination, suggesting that effective health communication can influence vaccine uptake. The study highlighted the importance of communication, especially in low and middle-income countries. Similarly, Galbraith et al. (2016) acknowledges that as awareness of the HPV vaccine is not enough to motivate actual vaccination rates among minoritized identities, provider recommendations may be crucial to increasing the chances of action. Additionally, Rahman et al., (2015) argues that health care providers (HCPs) need to recognize that their HPV vaccine recommendation has a pivotal role in determining adolescents' vaccine outcome and should prioritize providing HPV vaccine recommendation communications that ensure equitable vaccine uptake.

The respondents were requested to indicate the extent of agreement on the various statements on health communication strategies on HPV vaccine uptake for Cervical Cancer Prevention. The findings are presented in the table shown below:

**Table 2: Extent of Agreement on Health Communication Strategies**

Statement	N	Mean	Std. Dev
Communication by the healthcare worker is critically important to caregivers/guardians as they consider HPV vaccination	287	4.164	0.796
Motivational approaches by healthcare workers reduce misconceptions about HPV vaccines among caregivers/guardians hence increase the number of adolescent girls vaccinated	287	4.164	0.783
Information provided by healthcare workers to parents and adolescents is a critical piece of HPV vaccination uptake	287	4.007	0.762
Discussions on HPV vaccination in addition to providing a recommendation have higher rates of vaccination administration than those who do not	287	4.136	0.704
Creating awareness on cervical cancer and HPV vaccines by healthcare workers can reduce HPV vaccine misconceptions amongst caregivers/guardians can increase HPV vaccine uptake	287	4.227	0.710
Increasing knowledge for caregivers/guardians on cervical cancer and HPV vaccine can lead to increased HPV vaccine uptake.	287	4.199	0.793

The results from the table above depict that creating awareness on cervical cancer and HPV vaccines by healthcare workers can reduce HPV vaccine misconceptions amongst caregivers/guardians and can increase HPV vaccine uptake (mean=4.164).

The quantitative findings corroborate with the FGDs findings that indicated that healthcare workers play a crucial role in creating awareness about the HPV vaccine and its importance in cervical cancer prevention.

*"...Awareness campaigns have really helped us understand why the HPV vaccine is important for our children...." said F4.*

According to the KIIs, awareness of cervical cancer and the HPV vaccine among caregivers in Kajiado County might be relatively low, particularly in rural or underserved areas. This could be due to limited health education campaigns, lack of sufficient outreach programs, and competing healthcare priorities. The ones well informed are insistent on HPV and cervical cancer vaccination among adolescent girls. A big number of people with little knowledge about it don't really concern themselves with it. Most people have little or no knowledge due to low education levels. This was confirmed by one of the key informant participant;

*"I don't know where to take my daughter for the vaccine. I also heard it's only for young girls, but I am not sure about the details." ...said K7.*

The findings also agree with Reno et al. (2019), who evaluated strategies to improve healthcare providers' communication about HPV vaccination. Their findings suggest that targeted communication interventions, like those involving healthcare providers, can positively impact attitudes towards HPV vaccination. This study agrees with the notion that improving communication can increase HPV vaccine uptake.

### Descriptive Statistics for HPV Vaccine Uptake for Cervical Cancer Prevention

The respondents were requested to indicate the extent of agreement on the various statements on HPV Vaccine uptake for Cervical Cancer Prevention. The findings are presented in Table 3 below:

**Table 3: Extent of Agreement on Health Communication Strategies**

Statement	N	Mean	Std. Dev
HPV vaccine uptake amongst young adolescent girls can help prevent cervical cancer	287	4.178	0.719
Vaccination with HPV vaccine is cheaper way of preventing cervical cancer	287	3.850	1.025
Vaccination with HPV vaccine help reduce the chance of getting the cervical cancer	287	4.098	0.805
The vaccination against HPV is promising and can reduce HPV-associated morbidity and mortality	287	4.167	0.719
HPV vaccine should be administered to all adolescent girls before engaging in sexual activity in order to enhance the effectiveness of HPV vaccine	287	4.122	0.786
The timing of HPV vaccination is crucial in prevention of the incidence of cervical cancer	287	4.119	0.789
HPV vaccination reduces the risk of getting cervical cancer among women	287	4.206	0.825

The findings showed that HPV vaccination reduces the risk of getting cervical cancer among women. These findings are supported by Chen et al. (2020) who analyzed the effects of universal HPV vaccination for adolescent girls in Hong Kong. Given that HPV vaccination has been proven to reduce the risk of cervical cancer by preventing infection with high-risk HPV types (which are linked to cervical cancer), it can be inferred that this study likely supports the idea that HPV vaccination reduces the risk of cervical cancer (mean=4.206).

According to FGDs, increasing HPV vaccine uptake among young adolescent girls in Kajiado County, is crucial for cervical cancer prevention. This was mirrored by a focus group discussion participant who said;

*“I don’t know where to take my daughter for the vaccine. I also heard it’s only for young girls, but I am not sure about the details.” ...said F3.*

KII findings supported the quantitative findings that caregivers, particularly parents and healthcare providers, have played a significant role in encouraging HPV vaccine uptake for cervical cancer prevention as expressed by one participant;

*“Our community health workers educate the community on cervical cancer and the vaccines..we have seen the number of parents coming for the vaccines grow” ...said K1.*

The study findings agreed with Mavundza et al. (2024) who states that both parents/caregivers, healthcare workers and vaccination programme managers play a significant role in the acceptance and uptake of HPV vaccination. The healthcare workers’ recommendation for vaccination is the strongest predictor of vaccine uptake.

### Correlation

Correlational analysis using Pearson's product moment technique was done to determine the relationship between health communication strategies on HPV vaccine uptake for Cervical Cancer Prevention. Results of the correlation are presented in Table 5 as shown below:

**Table 5: Correlation between Health Communication Strategies on HPV Vaccine Uptake for Cervical Cancer Prevention**

		HPV Vaccine Uptake for Cervical Cancer Prevention	Health Communication Strategies
HPV Vaccine Uptake for Cervical Cancer Prevention	Pearson	1	.559
	Correlation		
	Sig. (2-tailed)		.000
	N	287	287
Health Communication Strategies	Pearson	.559	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	287	287

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Results from the Table 5 above reveal that there is a significant positive relationship between health communication strategies and HPV Vaccine Uptake for Cervical Cancer Prevention ( $r = 0.559$ ). This implies that there is a very strong association between health communication strategies and HPV Vaccine Uptake for Cervical Cancer Prevention.

### Regression Analysis (Hypothesis Testing)

The corresponding mathematical model for the hypothesis was identified as follows:

HPV Vaccine Uptake for Cervical Cancer Prevention = f (Health Communication Strategies)

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

**Table 6: Simple Linear Regression Results for Health Communication Strategies on HPV vaccine uptake for Cervical Cancer Prevention**

<b>Model Summary</b>						
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>		
1	.559 <sup>a</sup>	.312	.310	.50205		
<b>ANOVA<sup>a</sup></b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	32.641	1	32.641	129.498	.000b
	Residual	71.837	285	.252		
	<b>Total</b>	<b>104.478</b>	<b>286</b>			
<b>Coefficients<sup>a</sup></b>						
<b>Model</b>		<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	1.576	.224		7.031	.000
	Health Communication Strategies	.610	.054	.559	11.380	.000

Dependent Variable: HPV vaccine uptake for Cervical Cancer Prevention

Predictors: (Constant), Health Communication Strategies

The results in Table 6 above shows that  $r = 0.559$ , implying a positive slope between the independent variable (health communication strategies) and the dependent variable (HPV vaccine uptake for Cervical Cancer Prevention). The R- Squared was .312, meaning that 31.2% of the variation in the HPV vaccine uptake for Cervical Cancer Prevention was explained by variation in the health communication strategies. The other factors explained 68.8%. The ANOVA results indicated that the model was statistically significant at ( $p < 0.05$ ).

The results indicate that the  $p\text{-value} = 0.000 \leq 0.05$ ,  $t = 11.380$ ,  $r = 0.559$  and  $r\text{ square} = 0.312$ . Hence based on these findings we reject the null hypothesis that health communication strategies have no significance in HPV vaccine uptake for Cervical Cancer Prevention since  $p$  value of 0.000 is less than 0.05 and accept the alternative hypothesis at  $\alpha = 0.05$  level of significance that health communication strategies have significance in HPV vaccine uptake for Cervical Cancer Prevention.

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Can then be substituted as follows;  $Y = 1.576 + 0.610 X_1$

The beta value implies that for one-unit increase in health communication strategies, HPV vaccine uptake for Cervical Cancer Prevention increases by 0.610. This therefore confirms that health communication strategies had a significant positive influence on HPV vaccine uptake for Cervical Cancer Prevention.

## **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **Summary**

#### **Health Communication Strategies on HPV vaccine uptake for Cervical Cancer Prevention**

Both descriptive and inferential statistics were used to arrive at the findings. Descriptive statistics showed that creating awareness on cervical cancer and HPV vaccines by healthcare workers can reduce HPV vaccine misconceptions amongst caregivers/guardians and can increase HPV vaccine uptake. According to FGDs in Kajiado County, caregivers of young adolescent girls primarily obtain information about cervical cancer and HPV vaccines from healthcare providers, community health workers, and local health facilities. According to the KIIs, awareness of cervical cancer and the HPV vaccine among caregivers in Kajiado County might be relatively low, particularly in rural or underserved areas. This could be due to limited health education campaigns, lack of sufficient outreach programs, and competing healthcare priorities.

#### **HPV Vaccine Uptake for Cervical Cancer Prevention**

Both descriptive and inferential statistics were used to arrive at the findings. The study found that HPV vaccination reduces the risk of getting cervical cancer among women. According to FGDs, caregivers have made significant strides in encouraging HPV vaccine uptake for cervical cancer prevention among adolescent girls, though the extent and impact of these efforts can vary depending on geographic region, cultural context, and healthcare systems. According to the KIIs, caregivers, particularly parents and healthcare providers, have played a significant role in encouraging HPV vaccine uptake for cervical cancer prevention.

### **Conclusion**

The study underscores the significant impact of health communication strategies on HPV vaccine uptake in Kajiado County. Findings from this study highlight the effectiveness of health communication approaches in increasing HPV vaccination uptake among young adolescent girls aged 10-14 years in Kajiado County. The study concluded that creating awareness on cervical cancer and HPV vaccines by healthcare workers can reduce HPV vaccine misconceptions amongst caregivers/guardians and can increase HPV vaccine uptake.

### **Recommendations**

The study recommended that there is need to intensify health communication awareness programs that specifically target adolescent girls. HPV vaccination programs should focus on raising awareness about cervical cancer disease prevention, including information on HPV vaccination, screening, and healthy lifestyle choices. The use of various communication channels, including social media, community health promoters, schools, and youth groups, will ensure broad coverage and accessibility. Peer education can be a powerful tool in engaging young girls in health communication programs for HPV vaccination. Training adolescent girls as peer educators can create a supportive environment for open discussions about cervical cancer prevention, allowing for relatable and trustworthy information exchange among peers.

The study also recommended that policymakers should work towards incorporating comprehensive cervical cancer prevention education into school curricula. This ensures that young girls, especially those in rural areas, receive structured and ongoing health education.

The curriculum should cover topics like HPV, screening, vaccination, and reproductive sexual health.

Additionally, the study recommended that further research should explore the long-term impact of health communication strategies on cervical cancer prevention knowledge, attitudes, and behaviours among young adolescent girls especially how family members, especially parents, and the broader community influence adolescent girls' awareness and practices related to cervical cancer prevention.

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