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Knowledge, Attitude, Practices and Beliefs among Religious Leaders on Uptake and Adoption of Routine Immunization in Turkana, Samburu, Kitui, Kwale and Garissa Counties in Kenya

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ABSTRACT

Vaccination remains the most effective method for controlling communicable diseases. Vaccine hesitancy due to inadequate knowledge, negative attitudes, perceptions, practices, and beliefs among religious leaders is a significant obstacle to this achievement. Engaging religious leaders in Low and Middle-Income Countries (LMICs) can enhance vaccination coverage. This study employed a cross-sectional mixed-methods approach to investigate the knowledge, attitudes, beliefs, and practices regarding vaccine uptake among religious leaders in the selected five counties. Data were collected through structured questionnaires, and information was triangulated through qualitative data collection from key informants, including sub-county medical officers of health, health promotion officers, Expanded Program of Immunization (EPI) coordinators, and community leaders. A total of 387 respondents were sampled through stratified and purposive random sampling, yielding a response rate of 95.1%. Data were analyzed using SPSS (version 29). The study found low knowledge, at 48%, regarding routine immunization among religious leaders. Eighty-four per cent (84%) believed that vaccines were beneficial to society at large, albeit with low coverage. Demonstrating this, 62% (240) of the interviewees had received the first dose of the COVID-19 vaccine. However, only 29% (70) had taken the second dose. Only 20% (31) of the eligible girls had received the first dose of the HPV vaccine. Of the 20% who received the first dose, only 19.4% (5) returned for the second dose, demonstrating a negative attitude. The study indicates that religious leaders' beliefs and attitudes significantly influenced vaccine uptake. The study recommends increased knowledge transfer at religious congregational level by stakeholders. Secondly, stakeholders should enhance advocacy and social mobilization efforts to promote uptake of HPV and COVID-19 vaccine second dose. Thirdly, the Ministry of Health should strengthen collaborative and supportive linkages among stakeholders, religious leaders and community for sustained vaccine uptake. Lastly, religious leaders should utilize scripture to promote health through routine immunization.

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Background

Vaccination remains the most effective strategy for controlling the transmission of communicable diseases and mitigating harm through the establishment of herd immunity (Alimoradi et al., 2023). Nonetheless, their effectiveness and safety have often been questioned for a multitude of reasons by individuals and groups citing religious, scientific, and political grounds (Wolfe R.M. and Sharp L.K. 2023). The World Health Organization defines vaccine hesitancy as the reluctance or inability to receive vaccinations even when vaccines are accessible (World Health Organization, 2015).. Vaccine hesitancy is a multifaceted issue, exhibiting various degrees and fluctuating with time and context. In their 'Hesitancy determinant matrix', Galagali, Kinikar, and Kumar (2022) have identified the factors that influence the decision-making process regarding the acceptance, postponement, or rejection of vaccines.

Religious leaders and local faith actors are universally recognized as having an influence on immunization uptake and coverage in LMICs (Syed, 2023). The association between religion and vaccination dates back to as early as 1,000 AD, when a Buddhist nun was described as grinding scabs from a smallpox-infected person into a powder, and blowing it into a non-immune person's nostrils to induce immunity (Costa et al., 2020).

Religiously-linked, vaccine hesitancy concerns are especially pronounced and rising in LMICs, though often these concerns are inter-mixed with others related to political, economic, or social issues (Ansari, 2020). Faith-based organizations (FBOs) in India have historically been part of the vaccination efforts of the government (Banerjee et al., 2022). In prior vaccination drives such as for Polio and Measles-Rubella, faith based organizations (FBOs) had a significant role in guiding vaccine confidence, promoting healthy behaviors, and providing physical safe spaces to address both concerns of their congregation and run vaccination camps from churches, temples, gurudwaras, and mosques (IRLH 2023).

There is extensive evidence supporting the value of religious engagement for immunization promotion and acceptance in LMICs across faiths (Melillo et al., 2022). However, there is limited rigorous evidence and examples of specific approaches for engaging local faith actors to strengthen immunization uptake in LMICs (Polonsky et at., 2025). Polio vaccination efforts by UNICEF relied heavily on the religious leaders and teachers at Madrasas (Madrasas are type of school or college that are the nucleus of the cultural and educational life of Muslims) for over 8 years to reduce vaccine hesitancy, including the country of intervention (Melillo et al., 2021). Several studies have reinforced the powerful role of local faith actors in diverse communities within LMICs, both in promoting and inhibiting immunization uptake (Syed et al, 2023).

Although childhood vaccination programs have been successful in Kenya, vaccination coverage in minority groups may be considerably lower than in the general population (Ali, et al, 2022). Vaccines remain to be the world's safest and most effective cost cost-effective intervention to protect populations from the deadliest and life-threatening diseases including vaccine preventable diseases (Hills et al., 2023).

Despite the existence of various routine vaccines, laid out policies and procedures on the vaccination modalities, the number of eligible Kenyans vaccinated remains low. According to the Kenya Demographic Health Survey as per the Kenya National Bureau of Statistics (KNBS, 2022), the counties with the lowest child immunization rates in Kenya are Garissa (23%), Mandera (29%), West Pokot (49%), Wajir (49%), Turkana (60%), Kajiado (61%), Samburu (66%), Marsabit (69%), Isiolo (70%), Elgeyo Marakwet (70%), Kwale (71%), Lamu (72%), Kitui (73%), Tana River (74%), and Narok (75%).These performance rates are below the national immunization target of above 80%. The factors that resulted to low child immunization uptake in the Counties vary depending on the poverty levels, accessibility, religious and cultural beliefs, amongst other factors (MOH 2022).

It makes sense that the public health department and FBOs representing hard-to-reach communities would need to collaborate to further the shared objective of preventing suffering (Koh & Coles, 2019). Each side has vital content that the other does not, therefore, neither can afford to move forward without the other. A careful and rational approach to cooperation is essential for the successful resolution of vaccine hesitancy. This KAP study was conducted to guide on necessary strategies that may guide in engaging the religious leaders to motivate uptake and adoption of routine immunization in the five Coun-

ties that had the lowest uptake and were members of the Inter-Religious Council of Kenya (IRCK) – Turkana, Samburu, Kitui, Kwale and Garissa Counties.

Methodology

The study employed mixed method design, specifically convergent parallel mixed method design. The study targeted religious leaders who must have been members of the coalition of IRCK. Additionally, community leaders, youth and women leaders, local administrations and elders were interviewed. A total of 406 study participants were selected and distributed equally among the five counties. Therefore, in every County, 83 participants were selected using systematic sampling method and interviewed.

Quantitative data was collected through key informant (KI) interviews and focused group discussion (FGD). The KIs were County Medical Officer, County Health Promotion Officer, County Community Health Strategy Coordinator and County EPI Coordinator. Data were analyzed done using SPSS (version 29) and summarized through descriptive statistics and presented in form of tables and graphs. Hypothesis and associations between variables were tested using odds ratios and Chi square statistics at 95% confidence level respectively.

Results and Discussions Results

Social demographic information

A total of 406 participants were interviewed, however only 387 questionnaires met the threshold for analysis giving a response rate of 95.1%. The total study participants were 388, males (57 %) and female (43 %) and this gave a response rate of 96.5%. The age bracket of the majority of the respondents was above 41 years (49.9%) followed closely by 36-40 years (46,0%). Majority of the respondents 324 (83.7 %) were married and had 1-3 children, with a mean of 2 children and 1.3 Standard Deviation (SD). Additionally, at the time of the study, majority of the respondents 251 (65%) had at least 1 child below 5 years of age. (M=1, 1.12, SD). This makes this population a suitable one in regard to the study subject of immunization. In regard to respondent's religion, majority were Protestants (41.3%) followed by Catholics (38.5%) and Muslims with Hindus having the lowest representation at 18.6 % and 1.6 % respectively

Level of knowledge

On level of knowledge by age, the study found that a significant percentage of respondents 48% (186) reported much lower accurate information in regard to the routine immunization across the age. These respondents tended to disagree with statements in the Likert scale. All the statements were presented to the respondents in the affirmative frame and it was expected that they would agree with the statements. Respondents scored below average in most of the statements in the Likert scale on knowledge. This data suggests poor knowledge on routine immunization among the respondents. This was triangulated with the findings from the key informant interview.

The study found no statistically significant difference in respect to scoring on Level of Knowledge between the Christian, Hindus and Muslims Groups $F(1, 342) = 1.329$, $p = 0.250$. The implication of this finding is that level of knowledge is low across all groups.

Respondents were asked to state whether there was a certain vaccine that their faith does not support. In this regard, while majority 321 (83%) of the respondents refuted the claim, it is worth to note that 17% responded to the affirmative. Some of the vaccines mentioned included HPV (75%), malaria, BCG and TB. Moreover, in regard to the benefits of vaccines to the general social welfare, majority of the respondent 325(84%) (Mean=3.14, STD=3.2) felt that vaccines were helpful.

While a good number of key informants were knowledgeable, some did not have correct information. For example, one of the key informant responding to a question as to whether there are some vaccines he may not recommend the respondent reported as follows.

> *"Yes, of course, a vaccine like HPV was brought to us by people from outside. We need to be very careful, as they may have ulterior motives. It might be for fertility control. Other vaccines may have very bad side effects that may affect the child's life. I may not be a health worker but I have some fears"*

Another key informant was skeptical about the vaccine and this shows his level of knowledge and attitude regarding the HPV vaccine.

	Covid-19	Malaria	HPV	Oral Polio	Measles vaccines
20-25	Medium	Low	Low	High	Low
26-30	High	Low	Low	High	High
31-35	High	Low	Low	High	High
36-40	Medium	Low	Low	Low	Low
Above 41	High	Low	Low	Medium	Medium

Table 4.1: *Level of knowledge on routine immunization by age*

	Covid-19	Malaria	HPV	Oral Polio Vaccines	Measles vaccines
Male	Medium	Low	Low	Medium	Low
Female	High	Low	Low	High	Medium

Table 4.2*: Level of knowledge on routine immunization by gender*

	Covid-19	Malaria	HPV	Oral Polio	Measles vaccines
Catholic	High	Low	Low	High	High
Protestants	High	Low	Medium	High	High
Muslim	High	Low	Low	Medium	Medium
Hindu	Medium	Low	Low	Medium	High

Table 4.3: *Level of knowledge on routine immunization by religion*

	Covid-19	Malaria	HPV	Oral Polio	Measles
Have never attended school	Low	Low	Low	Medium	Low
Primary	Low	Low	Low	Low	High
Secondary	Medium	Low	Low	Medium	High
Post-Secondary School	High	Low	Medium	Medium	High

Table 4.4: *Level knowledge on routine immunization by level of education*

	Covid-19	Malaria	HPV	Oral Polio	Measles
20-25	Negative	Negative	Indifferent	Positive	Positive
26-30	Positive	Negative	Indifferent	Positive	Positive
31-35	Positive	Negative	Indifferent	Positive	Positive
36-40	Positive	Negative	Indifferent	Positive	Positive
Above 41	Positive	Negative	Indifferent	Positive	Positive

Table 4.6: *Attitude among religious leaders towards routine immunization by gender*

"Women infected with diseases caused by HPV are immoral, because the virus is only transmitted through immoral sexual practices"

It was also noted that knowledge on COVID 19 vaccination was higher compared to that for HPV vaccine. The participants attributed the high knowledge to the intensive sensitization and mobilization by the Ministry of health who partnered with other stakeholders including Religious Leaders during the COVID-19 pandemic period.

For example, one key informant health worker said that;

"During the height of Covid-19 outbreak, we partnered with Faith Leaders to mobilize and create demand for covid 19 vaccination in Mosques and Churches and the uptake of the first dose of the vaccine went high. However, after the ministry relaxed the Covid 19 protocols, uptake of both first and second dose went down."

Attitude among religious leaders towards routine immunization

The respondents were classified and divided into different strata; age, gender, religion and level of education. Despite the varied social and demographic characteristics, the study findings reveal that HPV has the least approval among all the respondents. Not a single group of the respondents are positive of the HPV vaccine. There was low acceptance and no trust on the HPV vaccine and this is connected to myths and misconceptions shrouding the vaccine. Moreover, majority of the respondents are skeptical of the malaria vaccine and this can be attributed to its recent introduction.

Practices/ beliefs of the respondents

It is evident that first dose Covid-19 uptake is generally high among all the respondents regardless of their age and religious affiliation. However, table 4.10 shows that Covid-19 uptake was lowest among age bracket 20-25 as compared to other age bracket. It is worth noting that there was a high uptake of first Covid-19 dose and declined for the second dose.

There is a demonstration of general apathy towards uptake of HPV vaccination. Out of the 387 participants, they had 157 girls eligible for HPV vaccination. The vaccine is eligible to girls aged 10-14 years. Among these girls only 20% (31) had received the first dose of HPV. The Protestants had the highest but not statistically significant percentage in uptake at 35.0% (14) followed closely by Catholics 17.1% (12). The Muslims 13.3% (6) lowest in uptake and Hindus 50.0% (1 out of 2) had the highest uptake.

The second dose of HPV had very low uptake with only 19.4% (5) participants having taken their girls for a second dose. Only 1.4% (1) of catholic girls received the second dose, among the Muslims girls 2.2% (1) received the second dose while among the Protestants 7.5% (3) received the second dose and one Hindu girl who took the first dose, did not go back for second dose. General uptake of HPV vaccination was found to be too low across all the religious groups. Even those few that agreed to have had their children vaccinated, they were very skeptical.

Majority of the respondents (84%) indicated that they would like to have their children vaccinated. Having said that however, it was notable that significant proportion of 174(45%) avoided the question that they had taken their child for vaccination or disagreed with the assertion. In regard as to whether they advocate for vaccination at their place of worship, majority of the respondents indicated that they did.

In examining the performance of respondents across different demographic categories, specifically religion (Christians vs. non-Christians), gender (male vs. female), education level, and parity, no statistically significant differences were observed in performance on the nine assessment items based on religion or gender. The chi-square test results were as follows: for religion, $X^2(1, N = 387) = 11.526$, $p = .10$; and for gender, $X^2(1, N = 387) = 12.526$, $p = .21$. However, a statistically significant difference was found based on education level, $X^2(1, N = 387) = 10.526$, $p = .01$, indicating that respondents with higher educational attainment demonstrated better performance, specifically, a greater willingness to take their children for vaccination, compared to those with lower educational attainment.

The implication of this is that education enrolment is a key factor in improving on immunization coverage among the respondents. In addition to this, provision of information to the respondents may also help improve on immunization coverage among the target community. While some key informants were open to having shared information on

	Covid-19	Malaria	HPV	Oral Polio Vaccines (OPV)	measles vaccines
Male	Positive	Negative	Indifferent	Positive	Indifferent
Female	Positive	Negative	Indifferent	Positive	Indifferent

Table 4.6: Attitude among religious leaders towards routine immunization by gender

	Covid-19 vaccines	Malaria vaccines	HPV vaccines	Oral Polio Vaccines	Measles vaccine
Catholic	Positive	Negative	Indifferent	Positive	Positive
Protestants	Positive	Negative	Indifferent	Positive	Positive
Muslim	Positive	Negative	Indifferent	Positive	Positive
Hindu	Positive	Negative	Indifferent	Positive	Indifferent

Table 4.7: *Attitude among religious leaders towards routine immunization by religion*

	Covid-19	Malaria	HPV	Oral Polio Vaccines	measles vaccines
Never attended school	Indifferent	Negative	Indifferent	Negative	Positive
Primary	Indifferent	Indifferent	Indifferent	Indifferent	Positive
Secondary	Positive	Negative	Indifferent	Positive	Positive
Post-Secondary School	Positive	Negative	Indifferent	Positive	Positive

Table 4.8: *Attitude among religious leaders towards routine immunization by level of education*

	Agree	Disagree	Strongly Disagree	Undecided	Strongly Agree
Catholic	12%	22.70%	0%	25%	40.30%
Protestants	12%	19.60%	19.70%	11.6%	37.10%
Muslim	4%	44.50%	16.60%	21.90%	13.0%
Hindu	16.7%	33.3%	33.3%	0%	16.7%

Table 4.9: *My faith doesn't support certain vaccines*

	SD	D	U	A	SA
I have taken my child for immunization	4%	1.2%	0%	17.5%	39.1%
In my place of worship, I advocate and recommend vaccination	0%	32.7%	0%	25.3%	40.3%
If don't vaccinate my child, that would be irresponsible	0%	12.3%	13.7%	9.3%	34.1%
Getting my child vaccinated that is an expected behaviour	0%	34.5%	6.6%	31.9%	27.1%
By vaccinating my child , I am contributing to the general welfare	0%	28.7%	7.5%	0%	56.3%
My faith does not require me to vaccinate my child	4.1%	21.1%	0%	17.5%	37.1%
Vaccines are method of fertility reduction	0%	22.7%	0%	25.3%	40.3%
As a faith leader I do not trust the quality of vaccines available	0%	19.6%	19.7%	0%	37.1%
My place of worship informs us of where I can take my child for immunization	0%	44.5%	16.6%	21.9%	13.1%

Table 4.16: Practices/ beliefs of the respondents on immunization

			No vaccinated per age interval			
	Yes	No	20-25	26-30	31-35	36-40
Catholic	91.2%(No)	8.8% (No				
Protestants	94.7%	5.3%				
Muslims	89.9%	10.1%				
Hindus	98.5%	1.5%				

Table 4.10: *Covid-19 vaccine uptake by religion*

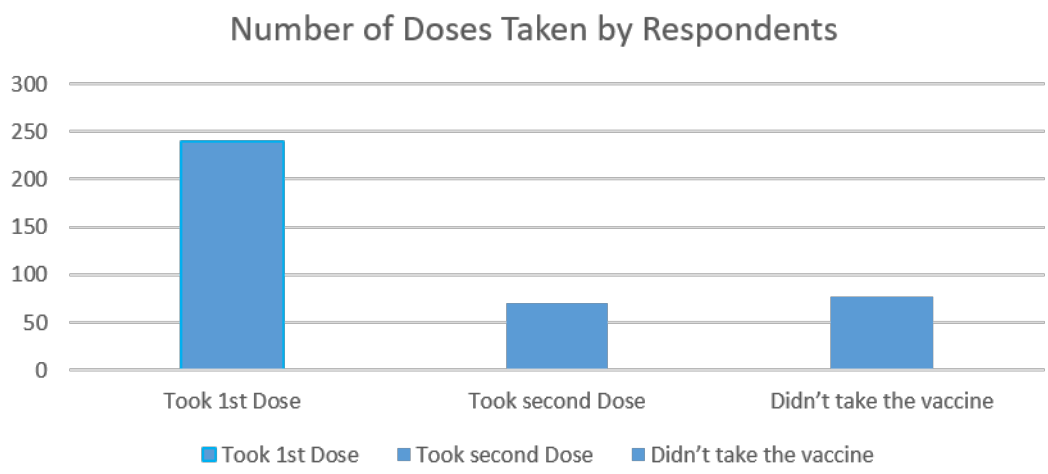

Figure 4.1 *No. of Covid 19 doses taken*

Denomination	Eligible for vaccination	First Dose		Second Dose	
		Yes	No	Yes	No
Catholics	70	12	58	1	11
Protestants	40	14	26	3	11
Muslims	45	6	39	1	5
Hindus	2	1	1	0	1
Total	157	33	124	5	28

Table 4.11: *Uptake of HPV vaccine by religion*

routine vaccines, some did not advocate for it, either because they do not believe in it or they did not have information that may help promote the uptake. For example, one key informant intimated that he has never and is not willing to participate in promoting vaccines. He put it as follows:

> "I have been told that these vaccines you are marketing are not good. I do not feel that this is the way to go, I am a Muslim and I do not feel that it is right to give vaccines to my young girl. For this reason, I can't promote. I totally do not agree with this"

A Key Religious Informant leader intimated that the HPV vaccine is a family planning method intended to reduce our population and make our girls promiscuous. They believe that God wants them to give birth as much as they can. See statement below:

> "The HPV vaccine is a family planning control method to reduce the population growth by the government. It is ungodly and my religion does not allow us to interfere with God's plan of filling the earth."

Another key religious leader informant responded by saying that;

> "If a girl does not engage in sex before marriage, they do not need to receive the HPV vaccine"

The health workers believed if the religious leaders are well engaged, the uptake of routine immunization can be increased.

> "In the beginning of Covid 19 pandemic, engaging with religious leaders gave us a huge millage towards uptake of the vaccine"

Discussion

This data suggests poor knowledge on routine immunization among the respondents. This was triangulated in the key informant guide.

While a good number of key informants were knowledgeable, some did not have correct information. For example, one of the key informant responding to a question as to whether there are some vaccines he may not recommend the respondent reported as follows.

> *"Yes, of course, a vaccine like HPV was brought to us by people from outside. We need to be very careful, as they may have ulterior motives. It might be for fertility control. Others vaccines may have very bad side effects that may affect the child's life. I may not be a health worker but I have some fears"*

Another key informant was skeptical about the vaccine and this shows his level of knowledge and attitude regarding the HPV vaccine.

> *"Women infected with diseases caused by HPV are immoral, because the virus is only transmitted through immoral sexual practices"*

The results show no significant difference between male and female even though females seemed to have better knowledge on most of the vaccines than males. Notable is the low knowledge on both malaria and HPV vaccine by both genders. After conducting an ANOVA, in regard knowledge there was no difference across the various religions.

The respondents were divided into four religious categories: Catholics, Protestants, Muslims, and a combined category for Hindus and other religions. ANOVA was then conducted to assess differences

in knowledge levels about routine immunization. The results indicated that there were no significant differences in knowledge based on religion. Both groups—Catholics and Protestants—demonstrated a significantly low level of knowledge regarding routine immunization.

Several studies examining vaccine literacy (VL) in relation to childhood vaccination have yielded mixed and sometimes contradictory findings. For instance, Aharon et al. (2016) found a negative association between communicative and critical VL and vaccine compliance: parents with high functional, communicative, and critical vaccine literacy were less likely to vaccinate their children. In contrast, findings from three other studies suggest a positive relationship between higher levels of vaccine literacy and increased vaccine uptake. For example, Zhang et al. (2023), in a systematic review, reported that greater VL was generally associated with lower vaccine hesitancy, improved vaccination attitudes, and stronger vaccination intentions. Similarly, other studies included in the review highlighted that improved understanding and processing of vaccine information often led to higher vaccination rates among parents. These contradictory findings suggest that the role of VL in vaccine behavior is complex and may be influenced by contextual, cultural, or trust-related factors.

Following erroneous rumors surrounding a scandal involving a locally manufactured pediatric vaccine, a Chinese study by Wang et al. (2018) examined the relationship between vaccine literacy (VL) and vaccine-related decision-making. The study found that parents with higher levels of functional and critical VL were more likely to choose the domestic vaccine, suggesting that increased VL may lead to greater confidence in vaccine safety, even in the face of public skepticism. Another study on maternal uptake of the dengue vaccine also found a positive correlation between functional and critical VL and vaccine acceptance. However, this study noted that mothers' willingness to vaccinate was not directly influenced by their VL scores, indicating that other contextual factors might mediate the relationship between VL and behavior. In contrast, a study by Gendler et al. (2021) focusing on COVID-19 vaccination intentions found that parents who intended to vaccinate their children exhibited significantly higher levels of functional, interactive, and critical VL, had a more favorable perception of the vaccine, and reported lower vaccine hesitancy than those who did not plan to vaccinate.

Taken together, these studies support the idea that higher VL is generally associated with positive vaccine-related behaviors and attitudes, although some findings (e.g., the dengue study) suggest that VL alone may not always predict vaccination willingness, highlighting the need to consider additional social and contextual factors.

As to whether the respondents had heard about vaccines for preventable diseases, majority 362 (93.7%) of the respondents indicated that they had. Respondents were asked to state their current source of information on vaccination, majority indicated health facilities, followed by the places of worship then media and chief barazas in that order. It is worth to note that places of worship ranked second in list of the current source of information on immunization. Further, respondents were asked to state their preferred sources of information. The following table shows the distribution of their responses.

Scholars have found in studies that health workers and religious leaders are a preferred and trusted source of vaccination information. Additionally, religious affiliation is a determinant of uptake or not of routine immunization (Amatu et at., 2020).

> "I have no problem with most of the other vaccines but HPV vaccines needs to be feared, I do not believe what they say about the vaccines. Why don't they use it in their countries? Why are they so focused with us and not their populations? It would be nice to see what happens in their countries. We really need to be careful"
>
> "Covid 19 vaccines did help a lot even though we still have our own fears about it"

A community key informant gave a comment on Malaria Vaccine as below:

> "I have no idea about malaria vaccine since it is not offered in our hospitals, even though our children are dying of malaria"

The study compares well with other past studies on COVID-19 vaccines. Regarding attitudes and perceptions, COVID-19 vaccines were perceived as safe, effective and important by the majority in underserved communities (Cogrs, 2022). Additional

similar studies in Ugandan and Bangladeshi slum communities (Nabirye et al., 2021, mamun et al., 2021) showed that in areas where the religious leader took lead in supporting uptake, the community agreed to be vaccinated. However, a lack of trust in vaccines and doubt of vaccines safety and effectiveness were reported in areas with high refusal (Tamysetty, 2021).

Attitude towards COVID-19 vaccination was associated with religious beliefs and cultural norms, ethnicity/race, education level, income, cues from social ties, and clinical, trust, and religious/spiritual barriers (Qasim et Al., 2022), while perception was associated with age, gender, education, marital status, and family size (Mamun et al., 2022). These finding can be generalized for other routine vaccinations such as HPV vaccination among others.

General uptake of HPV vaccination was found to be too low across all the religious groups. Even those few that agreed to have had their children vaccinated were very skeptical. One of the participants stating that the information of having allowed the girl to take the vaccine is a top secret because the participant was afraid of being stigmatized for agreeing to have allowed the daughter to take.

A Key informant who was a health worker indicated that in the region they are not comfortable advocating for the vaccination because residents were not taking it kindly. When the same participant was asked if there was a girl in the household legible vaccination, the participant agreed but was reluctant to say whether or not the girl had received the vaccination.

> " Even as health workers, we find it very hard to advocate for the HPV vaccination since we live here and the community does not like it when we tell them to take the vaccine, we fear being excommunicated from the community"

The participants showed open rejection towards taking HPV vaccination. It was clear that the religious leaders did not support the uptake of the HPV vaccine and as such, statements similar to the one below were echoed across a significant number of religious groupings.

> "Yes, of course, a vaccine like HPV was brought to us by people from outside. We need to be very careful, as they may have ulterior motives. It might be for fertility control. Others vaccines may have very bad side effects that may affect the child's life. I may not be a health worker but I have some fears"

One of the participants further said:

> "Why would I put my daughter in a state that will make her barren in future? I need to be a grandfather too, it's a blessing I cannot afford to miss"

Another Key informant said that the information on HPV vaccine is not clear and even the intentions.

> " Why are you targeting girls only? Why not boys? And why girls who are virgins. Does the government want our girls to be immoral? No day will I ever allow this to happen in my family while I live"

This study concurs with that of Guzman (2020) that found that number of vaccination refusals based on religious exemption is increasing. It further concluded that religion can provide perspectives on vaccination. Additionally, the notions of solidarity, risk sharing, or taking the risk of vaccination for those who cannot be vaccinated because of religious contradiction with medical advice can be resolved (Guzman, 2020).

Conclusion

The level of knowledge on routine immunization among religious leaders, across all the religious affiliation was relatively low specifically on HPV and Malaria. However, knowledge on COVID 19 and Polio vaccine was high. Majority of religious leaders had a positive attitude on COVID-19, Polio, and Measles vaccines with places of worship ranking second to health facilities as the preferred source of information on vaccination. A significant number of respondents did not support HPV vaccines with a significant percentage, having not taken eligible girls under their care for HPV vaccination and even though a majority of them had taken the COVID 19 vaccination first dose. While there was good progress on COVID 19 uptake dose one, second dose was poorly taken and the participants attributed the failure to the belief that COVID 19 disease is no longer in the Country and the relaxation of protocols by the government of Kenya.

A significant percentage of the respondents indicated that they had taken their children for vaccination. They also believed that vaccines would be

good for their children. However, there was also a significant number of respondents who did not support vaccination. Specific vaccines approval was not equal to all required vaccines among the respondents. For example, many respondents did not approve HPV vaccines eligible girls.

Recommendations

i.Provide more information to the religious leader to increase the level of knowledge among religious leaders on routine immunization by targeted training of religious leaders to improve on their ability to communicate to their members on the same to dispel and demystify myths and misconceptions

ii.Capacity build religious leaders by providing relevant Advocacy and Social Mobilization actions including identifying of champions that are relevant to the contextualized and specific to the various vaccines that have the highest level of uptake hesitancy

iii.Strengthen collaborative supportive linkages among stakeholders, specifically targeting the religious leaders and places of worship for sustained uptake of routine immunization and targeting the least accepted vaccines such as HPV and Malaria vaccine

iv.Religious leaders to utilize their platforms to disseminate vaccine information and promote vaccine uptake by incorporating vaccine information into their sermons and messages

v.Religious leaders to utilize scriptures from the holy books and teachings to promote health issues as a pre-requisite for community well-being, this can be achieved through vaccine information leading to increased uptake.

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