

Perceptions of Key Stakeholders Regarding the Expanded Program on Immunization (EPI) in Peshawar, Pakistan: A Comparative Study of Parents, Healthcare Providers, Religious Scholars and Community Elders

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ABSTRACT

Aim of the study: This study evaluates the perceptions of key stakeholders such as parents, healthcare providers, religious scholars and community elders regarding the Expanded Program on Immunization (EPI) in Peshawar, Pakistan. In spite of the widespread execution of immunization programs, barriers including vaccine reluctance, misconception, and socio-cultural resistance continue to limit the accomplishment of EPI in the region.

Methods: A quantitative cross-sectional approach was employed, with data collected from 378 respondents using a structured questionnaire. The data was collected from the key Stakeholders, including parents, healthcare providers, religious scholars and community elders, to assess their perceptions regarding EPI in Peshawar.

Results: The findings disclose noteworthy dilemmas faced by parents, healthcare providers, religious scholars and community elders, predominantly regarding trust in vaccine safety, misconceptions, and accessibility complications. The study also uncovers the influence of socio-cultural factors on immunization decisions, emphasizing the need for targeted interventions to increase vaccine uptake.

Conclusion: The research highlights the importance of understanding stakeholder perceptions to improve the effectiveness of immunization drives and inform policy decisions in Peshawar and similar regions.

Keyword: Stakeholder Perceptions, Community Engagement, Expanded Program on Immunization, Vaccine Reluctancy, Immunization Barriers.

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1. INTRODUCTION

Immunization is widely regarded as one of the most significant public health interventions of the twentieth century (WHO, 2016). Immunization is widely known universally for its significant role in preventing millions of infants' mortality annually from vaccine-preventable diseases, immunization programs have essentially transformed the landscape of public health (WHO, 2021). The influence of inoculation is not only seen in condensed death ratios but also in the stoppage of disability among children, and the economic load of sickness (Bettampadi, 2020). The World Health Organization (WHO) describes immunization as a dangerous and life-threatening means to avoid transmittable sicknesses, offering a cost-effective strategy to shield Socioeconomically disadvantaged groups from a range of noxious diseases (Orenstein & Ahmed, 2017). It has been assessed that inoculation initiatives have prevented over six million deaths yearly, dropping the worldwide load of diseases such as Hepatitis B, diphtheria, tetanus, measles, Poliomyelitis (UNICEF, 2013).

The successful eradication of smallpox disease through effective immunization drives patent a weighty breakthrough in global health and this accomplishment highlighted the dynamic role of immunization in stopping transmittable viruses (Centers for Disease Control and Prevention, 2021). In 1974, soon after the eradication of the Smallpox disease the World Health Organization (WHO) introduced the Expanded Program on Immunization (EPI) to extend vaccine uptake worldwide and avoid more epidemics of vaccine-preventable diseases (VPDs), regardless of socio-economic status or geographic location (WHO, 2020). The EPI initiative's extensive goalmouth was to reach widespread access to inoculations and improve infant health outcomes by meaningfully dropping avoidable sicknesses (Andre et al., 2008). Throughout the years, vaccination drive has subsidized to considerable decreases in infant death ratio, predominantly in under develop and developing countries, by increasing the spread of essential immunization drives (UNICEF, 2019). The efforts by EPI are associated with the international promise to accomplishing the Sustainable Development Goals (SDGs), primarily Goal 3: Good Health and Well-being, which highlights the reputation of vaccination in dropping avoidable mortality and encouraging health impartiality (WHO, 2021).

In spite of these accomplishments, Pakistan faces determined obstacles to reaching ideal immunization uptake (Fine, Mulholland, & Scott, 2017). While immunization drives under EPI have prolonged, low vaccine coverage remains a momentous barrier, heightened by vaccine reluctance, misconception, and logistical barriers (Rasheed et al, 2020). These barriers are mainly noticeable in isolated and underserved areas, where access to health care facilities is inadequate, and there is frequently reluctance to immunization from local people (Khan et al., 2019). Social factors mainly influence on vaccine decisions and uptake, especially in low-income areas (Brown, Lee and Taylor, 2020).

As emphasized by former studies, vaccine reluctance in Pakistan is ambitious by numerous reasons, including deep-rooted religious and cultural views, uncertainty in health system, and worries about the protection and efficiency of vaccines (Ullah et al., 2016). Some people reluctant due to fear and side effect the immunization but it is proved that vaccination has not side effects if it is injected as per protocols (Masood and Mehraj, 2020). The Polio Eradication Initiative, which has been one of Pakistan's main vaccination approaches, has faced momentous resistance in some areas, with Peshawar recognized as a dangerous region for polio eradication and other vaccination drives efforts due to its socio-political and geographic barriers (WHO, 2023).

Peshawar, the capital of Khyber Pakhtunkhwa, characterizes a pivotal point in Pakistan's immunization activities and drives. The region, with its multifaceted socio-cultural fabric and geographic juxtaposition to areas with limited contact to healthcare facilities, presents exceptional barriers for health system targeting to intensification vaccine coverage (Shen, 2014). The socio-cultural barriers to inoculation in Peshawar are exacerbated by misconception, religious disapproval to vaccination acceptance, and a lack of confidence in both the government and non-governmental organizations (Ullah et al., 2016). These barriers donate to lesser immunization uptake rates, obstructive hard work to abolish avoidable viruses

(Larson et al., 2015; Riedel, 2005). Similarly, the trust level build by the health care professionals and when they show willingness in vaccine so, the public is more likely to follow (Smith et al., 2020). Though the political endorsement and their willingness meaningfully improves public compliance easily (Ahmed et al., 2021).

This study aims to sightsee the perceptions of key stakeholders including parents, healthcare providers, religious scholars and community elders regarding the Expanded Program on Immunization program in Peshawar. Understanding the various perceptions and understandings of these stakeholders is critical for finding the barriers and challenges they face and for rising battered involvements to advance vaccine uptake. The research has also examined that how these diverse opinions the success of the EPI program, the barriers and challenges they face in helping immunization, and the prospects for enlightening community engagement in vaccination exertions. By focusing on these serious perspectives, the study seeks to inform policymakers and public health professionals on the necessary strategies for enhancing the effectiveness of immunization strategies in Peshawar and similar regions.

1.1 Research Objectives

1. To assess the perceptions of parents regarding the effectiveness and acceptability of the EPI program in Peshawar.
2. To examine the views of healthcare providers on the challenges and opportunities of the EPI program in Peshawar.
3. To explore the perceptions of political and religious leaders on the role of EPI in improving public health in Peshawar.

1.2 Research Questions

1. How do parents in Peshawar perceive the effectiveness and acceptability of the EPI program in protecting their children from vaccine-preventable diseases?
2. What are the key challenges and opportunities identified by healthcare providers in Peshawar for improving the implementation of the EPI program?
3. How do political and religious leaders in Peshawar perceive the role of the EPI program in enhancing public health and addressing vaccine hesitancy?

2. METHODOLOGY

2.1 Research Design

This study was a quantitative cross-sectional design to evaluate the perceptions of key stakeholders such as parents, healthcare providers, religious leaders, and community elders regarding the Expanded Program on Immunization (EPI) in Peshawar. The data were collected at a single point in time to analyze attitudes, perceptions, and barriers to immunization.

2.2 Participants

The study included four key stakeholder groups:

- **Parents:** Primary caregivers of children aged 24 months or less.
- **Healthcare Providers:** Vaccinators, Lady Health Workers (LHWs), and medical officers involved in EPI services.
- **Religious Scholars:** Imams or local clerics influencing community health views.
- **Community Elders:** Respected local leaders or elected officials involved in health-related decision-making.

2.3 Sampling Strategy and Sample Size

Purposive sampling with proportional allocation was used, resulting in a sample of 378 respondents. The study was carried out in the capital city of Khyber Pakhtunkhwa, District Peshawar, which is divided into six tehsils, including urban and rural areas. Purposive sampling with proportional allocation was used to ensure representation from each stakeholder group, resulting in a total sample size of 378 respondents (200 parents, 60 healthcare providers, 59 religious scholars, and 59 community elders) Table No-1.

Table 1: Specification of Stakeholders/Respondents

Sr.	Stakeholders /respondents	Total respondents	Selected Village council/Neighborhood council					
			Regi Afte Zai	Haryana Payan	Chagha r Mati 1	Chamkan ni 3	Sarband 1	Ghari Bannat 1
1	Parents	200	8	43	28	41	23	57
2	Healthcare Providers	60	2	13	8	12	7	17
3	Religious Scholars	59	2	13	8	12	7	17
4	Community elders	59	2	13	8	12	7	17
	Total	378	15	82	52	78	44	107

2.4 Instrument Validity

The questionnaire was pre-tested with 30 participants, translated into Urdu, and reviewed by experts for content validity.

2.5 Data Analysis

The gather data were analyzed through SPSS (version 26.0), and chi-square tests were applied to explore associations between dependent and independent variables, with a significance level set at $p < 0.05$.

3. RESULTS

3.1 Uni-Variate Analysis

Table 2: Parents' Perceptions

Statements	Agree	Disagree	Don't Know	Total
Have you vaccinated your children properly?	165 (82.5%)	31 (15.5%)	4 (2%)	200 (100%)
If not, was it due to far away from a health facility?	83 (41.5%)	111 (55.5%)	6 (3%)	200 (100%)
If not, was lack of time a reason for missing vaccination?	83 (41.5%)	110 (55%)	7 (3.5%)	200 (100%)
If not, did you feel vaccination was unnecessary?	67 (33.5%)	130 (66%)	3 (1.5%)	200 (100%)
If not, was it because you were unaware of the vaccination schedule?	63 (31.5%)	134 (67%)	3 (1.5%)	200 (100%)
Is EPI vaccination beneficial for children?	159 (79.5%)	32 (16%)	9 (4.5%)	200 (100%)
Do you doubt vaccine safety?	61 (30.5%)	127 (63.5%)	12 (6%)	200 (100%)

Are you afraid of HIV or infections from vaccines?	66 (33%)	120 (60%)	14 (7%)	200 (100%)
Do you fear vaccines cause infertility?	76 (38%)	103 (51.5%)	21 (10.5%)	200 (100%)
Do you think there are Western conspiracies involving vaccines?	64 (32%)	120 (60%)	16 (8%)	200 (100%)
Has anyone told you not to get vaccinated?	93 (46.5%)	97 (48.5%)	10 (5%)	200 (100%)
What is your opinion of vaccination services?	119 (59.5%)	66 (33%)	15 (7.5%)	200 (100%)

The data shows in **Table No. 2** that a high number 82.5% of respondents had vaccinated their children, while 15.5% disagreed and 2% were unsure. Regarding distance to health facilities, 41.5% mentioned it as a constraint, but high number 55.5% were disagreed, and 3% were unsure. Likewise, 41.5% mentioned time constraints as a barrier, while 55% disagreed, and 3.5% were unsure.

A total of 33.5% of parents who didn't vaccinate their children believed vaccination was unnecessary, though maximum 66% of respondents were disagreed, and 3.5% were unsure with the same statement. Furthermore, 31.5% of individuals who didn't vaccinate cited a lack of familiarity with vaccines, while 67% disagreed. A highest number 79.5% of individuals were found agreed that vaccination is useful.

Regarding safety concerns, minimum 30.5% of respondents were feared of vaccines might be unsafe, but 63.5% disagreed, and 6% were unsure. Similarly, 33% of respondents feared vaccines could cause HIV or infections, while 60% dismissed this idea, and 7% were unsure. About 38% believed vaccines might cause sterility, but 51.5% disagreed, and 10.5% were unsure. These findings align with Masood and Mehraj (2020), who found no evidence of major vaccine side effects.

Additionally, 32% of respondents were concerned about western conspiracy theories related to vaccines, while 60% disagreed, and 8% were unsure, in line with UNICEF (2019). Regarding advice against immunization, 46.5% of respondents reported receiving such advice, while 48.5% disagreed, and 5% were unsure. The results support Brown and Lee (2019), highlighting the role of social factors in vaccine decisions, especially in low-income areas. Finally, 59.5% were satisfied with immunization services, while 33% disagreed, and 7.5% were unsure.

Table 3: Healthcare providers' (HCPs) Perception

Statements	Agree	Disagree	Don't Know	Total
For the last five years, have you been employed in the health profession?	40 (66.6%)	20 (33.3%)	0 (0%)	60 (100%)
Are you employed by a government medical facility?	31 (51.7%)	25 (41.7%)	4 (6.7%)	60 (100%)
Are you employed at a private medical facility?	30 (50.0%)	29 (48.3%)	1 (1.7%)	60 (100%)
Does the EPI program offer safe vaccines?	47 (78.3%)	11 (18.3%)	2 (3.3%)	60 (100%)
Have you given your children the EPI routine vaccinations?	52 (86.7%)	7 (11.7%)	1 (1.7%)	60 (100%)
Do you let vaccination team to visit your home for vaccination?	53 (88.3%)	7 (11.7%)	0 (0%)	60 (100%)
Can children who receive the EPI vaccination avoid vaccine-preventable diseases (VPDs)?	40 (66.7%)	13 (21.7%)	7 (11.7%)	60 (100%)
Does vaccination affect a child's health negatively?	23 (38.3%)	35 (58.3%)	2 (3.3%)	60 (100%)

Are there any abnormalities in children who receive vaccinations?	25 (41.7%)	33 (55.0%)	2 (3.3%)	60 (100%)
Does vaccination make children sterile?	28 (46.7%)	27 (45.0%)	5 (8.3%)	60 (100%)
Have you encouraged or referred others to get vaccinated?	41 (68.3%)	14 (23.3%)	5 (8.3%)	60 (100%)
Do you think vaccinations can lower the rate of morbidity and mortality?	31 (51.7%)	21 (35.0%)	8 (13.3%)	60 (100%)
Is it necessary to vaccinate children who have missed any scheduled doses in order to finish the EPI vaccination schedule?	31 (68.3%)	8 (13.3%)	3 (5.0%)	60 (100%)
Do you believe that healthcare providers should receive regular EPI training?	46 (76.7%)	10 (16.7%)	4 (6.7%)	60 (100%)
Do you believe that EPI is capable of eliminating diseases that can be prevented by vaccination from a region?	47 (78.3%)	10 (16.7%)	3 (5.0%)	60 (100%)

Table 3 shows that the majority 66.6% of the respondents had employed and involved in the health profession for at least five years, while 33.3% of respondents were employed in the same profession less than five years. A nearly equal proportion worked in government 51.7% and private 50.3% health facilities. Most 78.3% of the respondents were positively believed on the vaccines used under the EPI program and safe but still some 18.3% of respondent showed fears about the safety of the vaccines.

Moreover, maximum 86.7% of respondents from the healthcare providers had given EPI vaccination to their children regularly, while 11.7% had not. The results align with Smith et al. (2020), showing that when medical professionals trust vaccines, the public is more likely to follow. Additionally, 88.3% of healthcare providers were willing to allow health workers to visit their homes for vaccinations, supporting the findings of Khan et al. (2021) highlighted that barriers are mainly noticeable in isolated and underserved areas, where access to health care facilities is inadequate, and there is frequently reluctance to immunization from local people.

A huge number 66.7% of respondents were found agreed with the statement that vaccination can control vaccine-preventable diseases (VPDs), while 21.7% were not agreed with the same statement. Similarly, 38.3% believed vaccination negatively impacts child health, but the majority 58.3% disagreed. Regarding concerns about vaccines causing abnormalities 41.7% and sterility 46.7%, most disagreed. Supporting the finding of Ullah et al. (2016) that vaccine uncertainty, and worries about the protection and efficiency by the people are barriers but it can be overcome through targeted messages.

Furthermost 68.3% of respondents were agreed that encouraging others for vaccination is important, and 51.7% believed vaccination reduces mortality and morbidity. Regarding missed vaccine doses, high number 68.3% of respondents were agreed that they should be caught up later, aligning with Brown and Lee (2019). Furthermore, 76.7% believed regular EPI training for healthcare providers is necessary.

Finally, 78.3% believed EPI could eradicate vaccine-preventable diseases in a region, aligning with Smith et al. (2020).

Table 4: Religious Scholars' Perception

Statements	Agree	Disagree	Don't Know	Total
Is vaccination against the religion?	38 (64.4%)	20 (33.9%)	1 (1.7%)	59 (100%)
Are religious leaders against vaccination and EPI Program?	24 (40.7%)	33 (55.9%)	2 (3.3%)	59 (100%)

Does religion approve of vaccination as a form of treatment?	37 (62.7%)	20 (33.9%)	2 (3.4%)	59 (100%)
Should children be vaccinated to save their lives?	25 (42.4%)	34 (57.6%)	0 (0%)	59 (100%)
Can children be protected by immunization against communicable viral diseases?	26 (44.1%)	32 (54.2%)	1 (1.7%)	59 (100%)
Are you vaccinating your children against deadly viruses and diseases?	54 (91.5%)	5 (8.5%)	0 (0%)	59 (100%)
Do you think anti-vaccination propaganda is true?	38 (64.4%)	19 (32.2%)	2 (3.4%)	59 (100%)
Is there a misconception about the vaccination issue?	10 (16.9%)	47 (79.7%)	2 (3.4%)	59 (100%)

As per the data in Table 4 reveals that the majority of religious scholars 64.4% thought that vaccinations were against their religion; however, 33.9% disagreed with this statement, and 1.7% were not sure. Similarly, the majority of respondents 62.7% agreed that religion permitted treatment through vaccination, while 33.9% disagreed with the same statement. Less than half of respondents 40.7% agreed that religious leaders oppose the EPI vaccination, while the highest number 55.9% disagreed.

Correspondingly, less than half 42.4% of respondents were agreed and emphasized that vaccination save lives of the children but an impressive proportion 57% of respondents were disagreed with the statement. Additionally, the majority of responders 54.2% disagreed with the statement that immunization protect children from communicable viral infections, while fewer than half 44.1% agreed. A substantial majority While just 8.5% of respondents disagreed with the statement, 91.5% of respondents said they vaccinate their own children to protect them from fatal diseases. The finding aligned with the results of (Bettampadi, 2020).

Further, the majority of those surveyed, 64.4% agreed that propaganda was against vaccinations, while 32.2% disagreed. Lastly, a small percentage 16.9% of respondents were agreed that there is some kind of misconceptions regarding vaccination but still the majority of religious scholars, 79.7%, were disagreed with the same assertion asked. Findings that support the research of Larson et al. (2015) emphasize the necessity of focused educational initiatives to dispel myths about vaccines in religious communities.

Table 5: Community Leaders' Perceptions

Statements	Agree	Disagree	Don't Know	Total
Do political leaders have a positive attitude towards vaccinations?	53 (89.8%)	5 (8.5%)	1 (1.7%)	59 (100%)
Do local leaders have a good response and perception about vaccination?	53 (89.8%)	5 (8.5%)	1 (1.7%)	59 (100%)
Do social workers in the area have a positive opinion of vaccinations?	53 (89.8%)	5 (8.5%)	1 (1.7%)	59 (100%)
Do Maliks (tribal leaders) have a positive perception and response to vaccination?	51 (86.4%)	7 (11.9%)	1 (1.7%)	59 (100%)
Do government officials have a favorable perception and response to vaccinations?	49 (83.1%)	8 (13.6%)	2 (3.4%)	59 (100%)
Does community mobilization contribute vaccination in an efficient way?	50 (84.7%)	4 (6.8%)	5 (8.5%)	59 (100%)

Table No. 5 explained that 89.8% of community leaders agreed that political leaders' attitudes and views on vaccination are positive, while 8.5% disagreed. Results findings align with Ahmed et al. (2021), implying that public compliance may be readily increased by political support and their willingness to do so. Similarly, 89.8% of respondents recognized that local leaders had positive perception concerning

vaccination, but still a little number 8.5% of respondents were disagreed with statement. Regarding perceptions of local social workers in the area, a huge number 89.8% of respondents observed positive, whereas some 8.5% of respondents were disagreed. Besides, maximum 86.4% of respondents agreed that tribal leaders (Maliks) support vaccination, while a small figure 11.9% were found disagreed. Regarding the perception and view of the Government officers, maximum 83.1% of respondents were agreed, even though 13.6% disagreed. In a similar vein, a staggering 84.7% of respondents concurred that community mobilization is useful in promoting vaccination, whilst 6.8% disagreed.

3.2 Bi-variate Analysis

Table 6: Negative to stakeholders' perception, less would be the acceptability of EPI and Immunization status.

S. No	Independent Variable	Immunization Status			Chi-Square Value p=value
		Agree	Disagree	Don't Know	
	Religious and Cultural Beliefs				
1	Agree	210 (55.56%)	20 (5.29%)	7 (1.85%)	$\chi^2=223.615$ P=0.000
	Disagree	43 (11.38%)	71 (18.78%)	5 (1.32%)	
	Don't Know	9 (2.38%)	0 (0%)	13 (3.44%)	
	Negative Personal Beliefs				
2	Agree	237 (62.70%)	0 (0%)	0 (0%)	$\chi^2=756.000$ P=0.000
	Disagree	0 (0%)	119 (31.48%)	0 (0%)	
	Don't Know	0 (0%)	0 (0%)	22 (5.82%)	
	Ignorant Community				
3	Agree	208 (55.03%)	25 (6.61%)	4 (1.06%)	$\chi^2=298.618$ P=0.000
	Disagree	30 (7.94%)	86 (22.75%)	3 (0.79%)	
	Don't Know	5 (1.32%)	3 (0.79%)	14 (3.70%)	
	Old Customs and Traditions				
4	Agree	199 (52.65%)	29 (7.67%)	9 (2.38%)	$\chi^2=219.559$ P=0.000
	Disagree	31 (8.20%)	84 (22.22%)	4 (1.06%)	
	Don't Know	9 (2.38%)	1 (0.26%)	12 (3.17%)	
	Demands				
5	Agree	195 (51.59%)	32 (8.47%)	10 (2.65%)	$\chi^2=115.417$ P=0.032
	Disagree	57 (15.08%)	56 (14.81%)	6 (1.59%)	
	Don't Know	7 (1.85%)	4 (1.06%)	11 (2.91%)	
	Politicizing Different Programs				
6	Agree	188 (49.74%)	40 (10.58%)	9 (2.38%)	$\chi^2=120.455$ P=0.002
	Disagree	47 (12.43%)	61 (16.14%)	11 (2.91%)	
	Don't Know	7 (1.85%)	3 (0.79%)	12 (3.17%)	
	Negative Propaganda				
7	Agree	205 (54.23%)	29 (7.67%)	3 (0.79%)	$\chi^2=111.036$ P=0.003
	Disagree	61 (16.14%)	53 (14.02%)	5 (1.32%)	
	Don't Know	10 (2.65%)	4 (1.06%)	8 (2.12%)	
	Overdose Side Effects				
8	Agree	167 (44.18%)	58 (15.34%)	12 (3.17%)	$\chi^2=71.081$ P=0.009
	Disagree	44 (11.64%)	68 (17.99%)	7 (1.85%)	
	Don't Know	11 (2.91%)	3 (0.79%)	8 (2.12%)	
	Multiple Vaccinations at a Time				
9	Agree	169 (44.71%)	58 (15.34%)	10 (2.65%)	$\chi^2=31.981$ P=0.001
	Disagree	53 (14.02%)	61 (16.14%)	5 (1.32%)	
	Don't Know	15 (3.97%)	4 (1.06%)	3 (0.79%)	
10	Untrained Workers				

	Agree	173 (45.77%)	56 (14.81%)	8 (2.12%)	$\chi^2=27.15$ P=0.001
	Disagree	55 (14.55%)	58 (15.34%)	6 (1.59%)	
	Don't Know	15 (3.97%)	5 (1.32%)	2 (0.53%)	
	No Benefits				
11	Agree	144 (38.10%)	80 (21.16%)	13 (3.44%)	$\chi^2=61.967$ P=0.000
	Disagree	37 (9.79%)	73 (19.31%)	9 (2.38%)	
	Don't Know	7 (1.85%)	6 (1.59%)	9 (2.38%)	

Table 6 reveals that a high significant ($p = 0.000$) association between religious and cultural beliefs and immunization status. Cultural beliefs and religion are important in immunization decisions, as people are very much connected with their religion as well as culture so it very much influences on parents' decision either positively or negatively regarding vaccination.

Additionally, a high significant ($p = 0.000$) association between negative personal beliefs and immunization status. This is because the parents' personal beliefs, whether positive or negative, are very important and can influence the community's opinions regarding vaccinations and other related topics. The primary obstacles are individual disobedience towards vaccines, particularly false beliefs regarding their efficacy and safety.

Similarly, a community's ignorance and immunization status are linked. The results showed that there is a significantly significant correlation ($P=.000$) between immunization status and an ignorant community. Old customs and traditions and immunization status were also found to be highly important and strongly significant ($P=.000$). Additionally, the data also revealed that there was a minor significant relationship ($p=0.032$) between parental demands and immunization status. Politicizing various initiatives was also found to be significantly correlated with immunization status ($p=0.002$).

Besides, the negative propaganda in contrast to vaccinations was found significant ($p=0.003$) with depended variable immunization status. Similarly, a significant ($p=0.009$) association confirms between overdose of the vaccines and side effects with immunization status.

Although receiving several vaccinations at the same time is another barrier to vaccination acceptance, the results showed a highly significant ($p=0.001$) correlation between immunization status and receiving multiple vaccinations at the same time. One of the main obstacles in the EPI program is also untrained personnel who give routine vaccinations; the results likewise showed a strong, substantial ($p=0.001$) correlation between immunization status and unskilled personnel. In a similar vein, the findings indicated that there were no advantages to vaccination and that there was a highly significant ($p=0.000$) association with immunization status.

4. CONCLUSION

The perceptions of significant and key stakeholders about the Expanded Program on Immunization (EPI) in Peshawar are thoroughly examined in this study. Despite the fact that most parents understood the value of vaccinations, the study discovered that major obstacles including vaccine reluctance and disinformation are still common. Healthcare providers largely supported the EPI, but concerns over resources and training were noted. Community leaders, particularly religious scholars, were found to have mixed views on the program, with some expressing concerns about vaccine safety and efficacy. The bivariate analysis highlighted key factors influencing vaccine uptake, such as cultural beliefs, socio-economic status, and misinformation. These results underscore the need for more focused and context-specific strategies to address these barriers and improve immunization coverage.

5. Recommendations

1. **Enhance Community Engagement:** Community leaders, especially religious scholars, play a crucial role in shaping public perceptions of immunization. It is recommended to engage these leaders in awareness campaigns, providing them with accurate information to help dispel myths about vaccines.
2. **Address Vaccine Hesitancy:** The study found significant levels of vaccine hesitancy, particularly due to concerns about vaccine safety and misconceptions. Public health campaigns should focus on educating parents about the safety and efficacy of vaccines, particularly in rural and hard-to-reach areas.
3. **Improve Access to Immunization Services:** The study found that the main immunization barriers were logistical, such as the distance to medical facilities. These issues might be lessened by increasing the availability of mobile immunization services and enhancing outreach visits to underprivileged communities.
4. **Provide Continued Training for Healthcare Providers:** Healthcare providers must receive regular training on immunization best practices, community engagement, and addressing vaccine hesitancy. This will improve their confidence in discussing vaccines with hesitant parents and encourage better vaccination rates.
5. **Strengthen Communication on the Benefits of Immunization:** There is a need for continuous, clear communication about the benefits of vaccination. Developing culturally sensitive materials that resonate with local communities and addressing concerns like side effects, cultural beliefs, and misconceptions will foster greater trust and increase vaccination rates.

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Conflict of Interest

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