

Research Articles

Addressing community barriers to immunization in Rajanpur district, Pakistan: an implementation research

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Background

The Expanded Program on Immunization (EPI) of Punjab province faced an implementation challenge of the lowest immunization coverage in one of the districts, Rajanpur. In the Rajanpur district, low acceptance of immunization for poor communities of tribals, Kacha, and rural areas is unknown. Implementation research was carried out to explore the reasons for low acceptability for routine immunization, appropriateness, and relevance of social mobilization activities.

Methods

To understand the low acceptability of immunization we used 'exploratory qualitative inquiry' to explore community perception of immunization services, appropriateness, and relevance of EPI social mobilization activities. With purposive sampling technique, trained interviewers conducted 24 in-depth interviews and 7 focus group discussions with community members/ caregivers and health care providers in the communities of Kacha, Rural and Tribal areas of the Rajanpur district. The data was collected in Urdu and Siraiki languages, which were transcribed in Urdu and translated into English for content analysis purposes.

Results

Level of acceptability for routine immunization varies among poor communities of rural, Kacha and tribal areas, from complete refusal to drop out. Factors related to health system for EPI that is influencing the demand at the community level are the insufficient deployment of female staff, the capacity gap of the current field staff, provision of need-based transportation and funding to field staff, and lack of community engagement in EPI planning for service delivery. These factors are resulting in low coverage of immunization in the Rajanpur district. The support of the tribal chief was identified as a factor that appeared to facilitate the EPI Rajanpur by mobilizing communities for immunization services. Lack of community engagement has implications for an integrated social mobilization strategy into EPI planning.

Conclusions

Immunization communication in general and social mobilization, in particular, is unsatisfactorily given the least priority by policymakers in creating demand for immunization in the Rajanpur district. Health system barriers for EPI need to overcome to increase demand among poor communities of rural, Kacha, and tribal areas of the Rajanpur district.

Globally, barriers to immunization are addressed through community mobilization with a clear communication strategy.¹ A reasonable size of global evidence suggests that the refusal to immunization is linked with the absence of clear communication practices at the community level.^{2,3} The parents' trust in vaccination safety has been identified as a key determinant of fully immunized children. Public distrust in the safety and efficacy of vaccination transpires with the absence of clear communication and community

mobilization.⁴⁻⁸

To overcome community barriers, National Communication Strategy for Routine Immunization Pakistan, 2015-2018⁹ suggested that some of the immunization barriers can only be addressed with the effective use of communication to the community through group engagement and social mobilization. To overcome community barriers this strategy proposes a number of communication approaches that suggest shifting focus from mass media to community

dialogue because caregivers rely on health care providers, family, and friends for their information about immunization.^{10,11}

Punjab is the largest province in Pakistan and a recent population-based health survey¹² has shown that the immunization coverage of fully vaccinated infants between 0 to 11 months approximately 74% and fully vaccinated children age 12 to 23 months are approximately 82%. The implementation challenge of the EPI Punjab was the lowest coverage of immunization in the district of Rajanpur that is 54% for 0-11 months and 37.6% for 12-23 months of children.

The Rajanpur district's background characteristics make it distinct from other districts of the Punjab province in various ways. This district is a mix of tribal, Kacha, and rural areas that share its border with the other two provinces, Baluchistan and Sindh. The weather conditions i.e., extreme winter and flood, affect the migration patterns of people residing in the mountainous area and river terrain. The population also migrates during harvesting seasons. In total, nearly 82% of the population belongs to poor economic status with an average household size of 7, while only 14% of the population resides in urban areas; literacy ratio is very low, 21%.^{12,13}

The reasons for low acceptance of immunization in the given socio-geographical context of tribal, Kacha, and rural poor communities in the Rajanpur district are unknown. Further, there is no literature on the appropriateness, and relevance of the EPI Punjab's social mobilization activities to the socio-cultural context of local communities. Therefore, the aim of this study was to address this gap in the literature.

METHODS

STUDY DESIGN AND SETTINGS

We used 'exploratory qualitative inquiry' to explore community perception regarding low acceptability of immunization, about the appropriateness and relevance of EPI social mobilization activities to understand low coverage of immunization. The Rajanpur district is comprised of three Tehsils: Rojhan, Rajanpur, Jampur, and one Tribal area. A large number of the population resides in rural, Kacha, and tribal areas.¹³ The site selection of the study areas and selection of poor communities of rural, Kacha, and the tribal area was done from these three tehsils and one tribal area with the support of the Rajanpur EPI office of the Punjab EPI Program.

STUDY PARTICIPANTS AND SAMPLING

By using a purposive sampling technique, we conducted in-depth interviews (IDIs) and Focus Group Discussions (FGDs) with community members/ caregivers and health care providers. The community members/ caregivers were operationally defined as male/female i.e., parents of 0 to 23 months aged infants, decision-makers (grandparents, community leaders, teachers), who had direct or indirect contact with these parents residing in rural, tribal, and Kacha areas. Whereas, health care providers were operationally defined as vaccinators, Lady Health Workers (LHWs), Lady

Health Visitors (LHVs), and senior management of the EPI Rajanpur, including Chief Executive Officer (CEO), District Health Officer (DHO-Preventive), Deputy District Health Officer (DDHO-Rojhan), and UNICEF Social Mobilization Officer.

DATA COLLECTION TOOLS

Data from secondary sources, journal articles, and published reports, were reviewed, and informal discussions with local EPI staff from the Rajanpur district were held, prior to developing IDIs and FGDs guide for the community and health care providers. These tools asked about community context; reasons for low acceptability of immunization including community understanding/ knowledge of immunization; trust, advantage, credibility, and the usefulness of vaccination; social mobilization activities of EPI staff for the community; mode & channel of communication of EPI staff with the community as well as understanding the role of community influential.

ETHICS APPROVAL

The ethics approval of the study was obtained from the Ethical Review Committee of the Health Services Academy (HSA) in Pakistan. The letter of support was also obtained from the EPI Punjab office to coordinate with the EPI Rajanpur office. Prior to the data collection, for audio recording, we also obtained informed consent from each participant. All FGDs and IDIs were conducted at places where the participants indicated they were comfortable.

DATA COLLECTION AND ANALYSIS

For data collection, a team was recruited comprised of a male and a female interviewer. The recruitment was based on qualifications, previous experience, and knowledge of the local language, local norms, and culture. The team was given a one-day training for data collection, orientation to EPI, tools with mock practice, and development of the field plan.

The team of trained interviewers including researchers of the study conducted 24 IDIs and 7 FGDs from the community and EPI Health Care providers of the Rajanpur district. Among EPI Rajanpur staff, 4 LHW, 1 LHS, 4 Vaccinators, and 4 senior management staff were interviewed on IDIs. Among community members, 11 IDIs and 7 FGDs were conducted. Participants of Community-FGDs were homogeneous, based on sex, socioeconomic status, and education level.

The data were collected in Urdu and Siraiiki languages at the interviewee's location of choice. All IDIs and FGDs were audio-recorded except one with an interviewee who did not consent to record the interview. On average, each IDI or FGD lasted for 60 to 90 minutes. Photos were also taken with the consent of participants.

All audio-recorded interviews were transcribed in Urdu and translated into English for analysis. The authors of this article analyzed and reviewed the qualitative data. Data were then coded and categorized into themes. A content analysis method was used to analyse and interpret the data.

Table 1. Focussed group discussions (FGDs) and in-depth interviews (IDIs) conducted with female community members and health care providers

Tehsil	Area	Union Council	FGDs	IDIs
Rojhan	Rural	Rojhan Sharqi	1	1
	Kacha	Shah Wali	1	2
Jampur	Rural	Harrand	1	1
	Kacha	Kotla Deewan		2
Rajanpur	Rural	Noorpur Machiwala		2
	Kacha	Sahan Wala	1	1
Tribal Area	Tribal	Marri		1
Total			4	10

Table 2. Focussed group discussions (FGDs) and in-depth interviews (IDIs) conducted with male community members and health care providers

Tehsil	Area	Union Council	FGDs	IDIs
Rojhan	Rural	Rojhan Sharqi	1	1
	Kacha	Shah Wali		2
Jampur	Rural	Harrand		2
	Kacha	Kotla Deewan	1	1
Rajanpur	Rural	Noorpur Machiwala	1	1
	Kacha	Sahan Wala		2
Tribal Area	Tribal	Uzman		1
Total			3	10

Table 3. Expanded Programme on Immunization (EPI) official's in-depth interviews

#	Senior Management of the EPI Rajanpur	IDI
1.	Chief Executive Officer (CEO) Health, Rajanpur District	1
2.	District Health Officer (DHO)	1
3.	Deputy DHO	1
4.	United Nations Children's Fund (UNICEF)	1
Total		4

The details of FGDs and IDIs are given in Tables 1, 2, and 3.

RESULTS

LOW ACCEPTABILITY OF IMMUNIZATION IN THE COMMUNITY CONTEXT

The level of acceptability for routine immunization varies among different communities, from complete refusal to drop out after the administration of Penta-1. There are various factors, which are causing the low acceptability of immunization in the Rajanpur district.

The community expressed their views on factors such

as the accessibility, and affordability of services that affect their decision for immunization services from complete refusal to drop out. For instance, vaccination services are offered free of cost however as a practice EPI does not provide any medication for fever that occurs after administering vaccines (i.e. fever because of Penta-1). In the Kacha area that is a river terrain, the Punjab government has not set up any health facility there. These areas have neither any public transport facility nor any roads. In addition, people do not have mobile phones to communicate with any health-care worker for any emergency advice. In the given scenario, poor communities cannot afford the cost of travel to avail medication for the vaccine's fever. Thus access to health facilities and travel cost leads to low acceptability of immu-

nization services among poor communities.

In the rural area, i.e., Rojhan Sharqi and Harrand the major problem is a dropout. In these areas, men and women work in the field. The education level is better than in other areas. In rural areas, people allow vaccinators to perform their duties. Still, they are not comfortable with the fever due to vaccination, particularly when their children are not given any fever medicines. Parents seek treatment of fever from the quacks that are readily available. These quacks strengthen their misconceptions against vaccination. As a sign of resistance, men lock their houses from outside, so no one can approach them to ask for vaccination. People believe fever occurs because their children are weak and cannot tolerate the dose of vaccination. Community explained,

"They feel that their children are weak and will not be able to bear the vaccination and will become sick. So, they think that after growing up, they will be strong enough to have a vaccination. They don't mind even if they are older than two years."

Mothers in the community believe that carrying a vaccine card is the precondition for immunization. Therefore losing the card can save their children from getting a fever.

In hard-to-reach areas (tribal areas), there is no health facility. To access a health facility people have to walk or travel on a cart to cover a distance of 100 km. After vaccination, when their children get a fever, people find it very difficult to travel 100 km far away to get paracetamol. Therefore, they refuse. People in the tribal and Kacha area demand medicines from the vaccinators. Additionally, there is no communication channel to inform the vaccinator whether the child they are approaching is in good health to have a vaccination or not. As one of the vaccinators said,

"In hard to reach areas, the issue is non-availability of a health facility in the nearby surroundings of 100 km. For example, we (EPI staff) go only for vaccination. At times, we find that children have malaria or fever. (Therefore, cannot give vaccination due to child's health condition). The people of that household demand medicine for fever."

Certain people have refused vaccination in the Kacha area because the vaccination (MMR) is made in India.

Prevalent 'gender norms' are also a major factor for the low acceptance of immunization services. In Kacha and tribal areas, infants stay inside the house with their mothers. As a norm, a stranger male vaccinator cannot directly communicate with mothers. Almost every community has an objection to male vaccinators approaching their houses in the absence of male household members.

Throughout the Rajanpur district service delivery is the primary responsibility of male vaccinators. He has to rely on LHWs or the fathers to remind mothers about the next due date. LHWs are appointed in areas where they support male vaccinators to convey the 'immunization services' message to mothers inside the house. These LHWs shares the information on the birth of a newborn infant with the vaccinator for registration purposes. These LHWs also administer PENTA-I at the age of 6 weeks to that newborn child. Areas, where LHWs are not appointed, are facing the problem of low coverage. Communities have very evidently expressed the need for female vaccinators/staff. The same problem is

faced in tribal areas as one of the vaccinators mentioned,

"Even in routine Immunization a vaccinator cannot go to their (community member's) houses, he has to sit at Chief's "Otak" (main sitting area), where people will bring their children for vaccination. The family does not bring their newborns out of the houses. Only LHW can go inside the house for registration and vaccinate newborns. Since there is no LHW appointed in the tribal area, we (male vaccinators) face the challenge of low coverage. The male vaccinator here is helpless and cannot complete the task given to him."

In rural and Kacha areas the community has also reported a similar demand, as they do not like to interact with a male vaccinator.

"If LHW is there, she can go inside the house to give the vaccination. Women are reluctant to talk to men (male vaccinator)."

In Kacha and tribal areas, women have restricted mobility, and they are not allowed to carry a mobile phone but men do. As a practice, EPI sends a text message of the next due date of vaccination on men's mobile phones. Upon receiving a text message from EPI for the next due date, men who can read the message inform their wives about the next vaccination due visit; otherwise, it is not communicated to mothers. The LHWs act like a communication channel for women, who have restricted mobility and limited education. They mobilize communities for immunization services and provide health education. In areas, where LHWs are not appointed or not performing their duties, community women remain uninformed. Mainly, tribal areas are facing this problem. In the tribal areas although everyone knows a chief's place, women herself cannot bring her children due to local social norms of mobility.

In tribal and Kacha areas there are many unregistered newborns from home-based deliveries. Since LHWs are not appointed in these areas. Children who are born at home; remained unregistered and subsequently missed their Bacillus Calmette Guérin (BCG) dose.

Growing 'conservatism' is another reason for the refusal of immunization services. The communities in Kacha takes influence from religious elements, they also blindly follow them., People believe that these vaccines will cause their children's impotency later in life in the Kacha area. They believe this is a genocide conspiracy against Muslims.

"In Shah Wali, areas where Bloch resides, the main issue is Maulana Abdul Aziz and his follower. They have extremist thoughts. Even we (EPI Officials) are scared of going there to motivate people. If we try to convince them, they call us non-believers/ "Kafirs" or Jewish agents and ask us "aap to niklo yahan say" (you get lost). They believe that these people (EPI) are doing genocide of the Muslim race. They propagate that if you get your male child vaccinated, he will become impotent."

Community leaders also shape the opinion of parents. The EPI Rajanpur officials always seek their support, when communities show resistance to EPI vaccinators. For instance, the help of a tribe chief of the EPI staff brings the community to their 'Oatak' (a sitting area where the chief held their meetings) for vaccination purposes.

In the Kacha area, people are scared of political figures due to fear of fake criminal cases and the police's involvement. People take influence on vaccination refusal from these influential. To manage such matters the EPI Rajanpur used to engage people from the "Choto Gang" (a criminal group). These people used to mobilize poor communities in Kacha and provided protection to the EPI team in their respective areas. The EPI Rajanpur was giving them some monetary incentive against their community mobilization activity. Since EPI Punjab has imposed the condition of biometrics to release payments. These gang people are reluctant to give biometrics, as it will reveal their identity. Afterward, they do not support the EPI Rajanpur. As one of the officials said,

"Earlier EPI was paying them a nominal amount for their support. Now they do not want to risk their lives for a few thousand with this biometric system".

COMMUNITY PERCEPTIONS ABOUT APPROPRIATENESS AND RELEVANCE OF SOCIAL MOBILIZATION

The community has expressed mixed opinions about the attitude of vaccinators. In areas, where vaccinators have displayed a good attitude, people are willing to listen to them and comply with vaccination services as affirmed by EPI officials from the Rajanpur district. In areas, where people were uncomfortable with the attitude of a vaccinator they refused. The community members attributed their lack of knowledge of vaccination to the behavior of the vaccinator. They mentioned that the vaccinator's sole communication was to "bring your children for drops/ injection" was not sufficient to inform them about the vaccination. As one of the interviewees said

"If someone comes and without introducing himself, starts asking to 'bring your children for injection' and starts picking fruits from my trees. I will be offended. I will ask him to leave rather than listening to him."

The primary qualitative data revealed that vaccinators perform improvised practices of 'Social mobilization' to communicate and motivate the community regarding the immunization services, which varies from vaccinators to vaccinators. As a common practice, vaccinators announce on the loudspeaker to inform the community about the immunization services. They also visit a few community members at their workplace to pass on the vaccination message to their families.

The absence of community involvement has created a communication gap between the community and the EPI program. The EPI Rajanpur seeks community support for troubleshooting purposes only. For instance in tribal areas, the deputy DHO of Rojhan, who has received social mobilization training, voluntarily takes tribal leaders with him, along with some medicines to motivate families for vaccination. These are some ad-hoc arrangements of social mobilization to address community concerns. Another example of a lack of community involvement is 'the operational time' of services. In rural areas, women who work in the field generally do not know who comes for vaccination and what time. There are also no 'community sessions' held to inform them about immunization and services.

"No one ever came here for any meeting. Only once a woman came and she got our thumb impression and went away. The doctors tell that every child must get the vaccination because that is necessary."

The EPI staff reported that communities in Kacha, tribal, and rural areas frequently refuse immunization services. We explored the reasons for refusal in these communities and found out that the majority of women do not know about the vaccination services, its operational time, location of EPI camp and the importance of vaccination.

HEALTH CARE STAFF'S PERCEPTIONS ABOUT APPROPRIATENESS, AND RELEVANCE OF SOCIAL MOBILIZATION

The primary data revealed that community mobilization for vaccination services is the most expected function of the vaccinators' job. The EPI Rajanpur officials reported, to perform this function, EPI Punjab has facilitated them in their mobility with the provision of motorbike and 15-liter fuel per month as the population is scattered in a large area. They further mentioned that these vaccinators commute on a daily basis to interact with the communities for immunization coverage. In Kacha and deserted areas, vaccinators have to travel 250 km for one round trip in a day. In the larger Union councils like Shahwali in which two vaccinators are appointed, one motorbike's supply does not meet the need for two vaccinators. The provision of logistics in accessing the targeted population is a barrier. The EPI Rajanpur officials further expressed that they have to hike to approach tribal communities in the mountainous areas. They mentioned that fuel and vehicle facilities are not sufficient if these vaccinators are not skillful in social mobilization tasks. They are not formally trained on how to communicate with these communities, how and what activities to perform for social mobilization, they further added. They have improvised social mobilization activities by themselves. These activities are mainly around approaching decision-makers, i.e., fathers, LHWs, the tribal chief, or other influential to seek their support in influencing mothers to vaccinate their infants. The vaccinators find it challenging to mobilize communities for vaccination services by merely relying on these decision-makers. Upon an inquiry, vaccinators responded that they have not received on-job training in communication and/ or social mobilization since they have joined the services with EPI Punjab.

There are few Rajanpur district areas where the refusal rate is higher than in any other area. The reason for refusal is the cultural barrier of communication with the mothers inside their houses, EPI officials said. They mentioned that we do not have a permanent female staff to appoint there. These areas are 'Somiyan' and 'Mehrabpur' which are also high-risk security areas. Other union councils are 'Machiwala', 'Shikarpur', 'Jampur', 'Nurpur', 'Manjuwala', 'Hajipur', and 'Harrand'. EPI officials said in these areas, LHWs are not appointed, and communities also have an objection to male vaccinators approaching their houses in the absence of male family members. As per the EPI Rajanpur official's instructions, the vaccinators make an announcement on loudspeakers about the upcoming schedule of immunization services i.e. date, time, and location. Their an-

nouncement does not mobilize mothers to bring their infants for vaccination. As a social norm, women have restricted mobility and lack of influence in decision-making. In these areas to bridge the communication gap between community and immunization services, EPI officials have identified a need for female staff, resulting in improved immunization coverage.

DISCUSSION

Strong demand for routine immunization across communities of diverse backgrounds is vital to ensure that children are fully immunized. Around the world, many countries,^{14,15} including Pakistan, have developed communication and social mobilization strategies to increase demand for routine immunization services and to encourage caregivers to use these services. In the Rajanpur district, one of the reasons for the lack of demand for immunization services is identified that immunization communication in general, and social mobilization, in particular, are given the least attention to creating demand for immunization by EPI Punjab as opposed to National Communication Strategy for Routine Immunization Pakistan, 2015-2018.⁸

A number of studies^{3,5-7} suggest that a lack of knowledge of caregivers, caregivers' experience with the adverse effect (i.e. fever) of vaccines, its related treatment, and travel cost negatively affect caregivers' decisions to vaccinate their children. These factors are inextricably linked with communication and social mobilization activities.^{3,5} Our findings indicated that the cultural and social differences among poor communities of Kacha, rural and tribal areas of the Rajanpur district had caused several reasons for low acceptability of immunization services from complete refusal to drop out that stem into the absence of communication and social mobilization activities.

Structural issues related to human and financial resources also adversely influence the community mobilization to accept immunization services.^{3,5,7,16} In Punjab EPI context these structural issues are insufficient deployment of female staff, the 'capacity building' gap of current field staff, provision of need-based transportation and funding to field staff, as well as lack of community involvement in EPI planning for service delivery. These factors have compromised demand creation interventions for routine immunization and resulting in low coverage of immunization in the study district.

The findings show an evident difference in acceptance of immunization services among communities where LHWs are appointed and where they are not. Evidence supports that the population served by LHWs had substantially better health indicators than the control population.¹⁷ The demand for the female workforce as per community need seems legitimate demand to increase immunization coverage.

Additionally, culturally sensitive and improved communication skills of vaccinators can impact service delivery acceptance even in hard-to-reach areas.¹⁸ In many settings, EPI health care workers play an essential role to address caregivers' misperceptions about immunization and deciding to vaccinate their children.^{19,20} However, the lack of skilled health workers in the field limits effective commu-

nication with parents and caregivers who refuse immunization services.²¹ We also found that vaccinators face resistance from conservative groups in the Kacha area. Studies from the African context have also found similar findings¹⁵. There is an evident need for vaccinators' capacity building for their interpersonal communication skills and updated knowledge to gain community trust and respect.

Many studies have shown that women's household autonomy was positively correlated with children's immunization status²² and with overall Children's health outcomes.^{22,23} There is an importance of women's household autonomy for children's immunization status as it is linked with her overall financial decision-making abilities and her participation in decision making for the household^{22,23} that is absent in Kacha and tribal area of the Rajanpur district. Therefore, all sporadic social mobilization activities are targeting men for immunization services.

The support of the tribal chief²¹ was identified as a factor that appeared to facilitate the EPI Rajanpur by mobilizing communities for immunization services. Few studies have also captured community engagement's good practices^{24,25} for community mobilization. There are few studies from Pakistan, Muslim majority communities, and African studies where engaging religious and influential leaders have also been described as a useful and acceptable intervention.^{14,26-28} These successful examples indicate that such community involvement can help to address vaccination concerns.^{29,30} There is a need to engage communities systematically than on an ad-hoc basis.

The findings of the current study have few implications for the social mobilization policy of EPI Punjab.

Integration of social mobilization strategy into EPI planning: The Punjab EPI's current 'Social mobilization' policy should be translated into a strategy with a budgetary allocation. The Social mobilization strategy can provide a foundation to phrase key functions, messages, tools, guidelines, protocol, and training material according to the target population. The well-planned 'Social mobilization' activities can be linked with the EPI monitoring framework to measure the progress.

Structural and partnership support for the social mobilization into EPI: A defined Social mobilization strategy demands a designated human resource with relevant qualifications, competencies, and skills to supervise the social mobilization component. This structural change will improve collaboration and networking with relevant stakeholders to train existing field staff for necessary communication and social mobilization skills.

Capacity building of field staff: Capacity-building of current field staff, i.e., vaccinators, supervisors, LHWs, is the immediate need of the EPI Rajanpur. Field staff needs to learn interpersonal communication skills for 'social mobilization.' Their enhanced skill will help them structure their activities and make a more realistic assessment of community dynamics. The refresher training should also be planned along with the capacity-building plan.

Community engagement: EPI should focus on building ownership of the program in local communities by engaging them from the beginning. EPI programs can engage the community to scan their social environment, identify community priorities, study their behaviors, learn their commu-

nication channels, and identify a space for EPI communication.

In more conservative and rigid communities, to minimize communities' resistance, the Rajanpur EPI office can build upon their experiential learning where they engaged skillful married couples and pairs of a family member like siblings, daughter, and father to interact and communicate with the community members inside and outside their house.

Appointment of female staff: LHWs have access to mothers in all communities and are considered a major health education source, particularly for women who do not have access to any communication channel, e.g., mobile phones, TV, and radio. The communities where LHWs are not appointed are facing the problem of low immunization. The health department has already identified the need for appointing more LHWs in its 2017-18 fiscal year's planning "PC-I 2017-2018" compliance with this decision is required in the Rajanpur district.

STUDY LIMITATIONS

This study had a few limitations. The EPI implementers selected the data collection sites for low immunization coverage only. Considering other sites, where immunization coverage was better, could have informed us of some good practices of immunization coverage in the same context. We could not interview the other two deputy DHOs due to their unavailability. Their interviews could have brought more insight into the reasons for the low acceptability and relevance of social mobilization activities in their respective tehsils. The data was collected in the local Siraiki language as per respondents' convenience. The researchers were not familiar with this language. Therefore, they had to rely on the translation skills of interviewers to understand the con-

tent of the IDIs and FGDs. The communities where the refusal rate to immunization services was highest i.e. river terrain and tribal communities of mountainous areas, were notorious for their criminal activities. By considering the EPI implementers' feedback, data was not collected from these sites due to security reasons.

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AUTHORSHIP CONTRIBUTIONS

All authors contributed to the research and writing of the manuscript.

COMPETING INTERESTS

The authors completed the Unified Competing Interest form at <http://www.icmje.org/disclosure-of-interest/> (available upon request from the corresponding author) and declare no conflicts of interest.

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