

Gender Norms, Religious Narratives, and Social Hierarchies as Determinants of Vaccine Decision-Making in Southern Khyber Pakhtunkhwa, Pakistan: A

Qualitative Study

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Abstract

It is known that socio-behavioral and structural factors relative to Southern Khyber Pakhtunkhwa yield a vaccine-hesitant populace, a public health problem from which arises the need for more documented data about the social dynamics of hesitancy—particularly gender norms, religious authority, social hierarchy, and informal information networks. A qualitative ethnographic design was used in six districts of the left side of KP in Southern region (Bannu, Lakki Marwat, Dera Ismail Khan, Tank, South and North Waziristan), in which the data were collected using 42 in-depth ethnographic interviews (IDIs), 21 key informant interviews (KIIs), and 20 focus group discussions (FGDs). Purposive sampling and snowball sampling resulted in the inclusion of a wide range of vaccination attitudes and social roles. An inductive thematic analysis (Braun & Clarke, 2006) framework was used for data analysis, while triangulation amongst modalities increased credibility. Four foundational patterns emerged in vaccine decision making: (1) gendered authority limiting the agency of women, as fathers and male elders dominated decisions; (2) religious narratives molding the flow and character of information, with imam endorsement significantly enhancing uptake; (3) social hierarchies precipitating cascades of refusals when influential individuals within communities reject vaccination; and (4) informal rumor networks – mainly WhatsApp groups, hujra conversations, and mosque-adjacent spaces – spreading misinformation while wielding greater emotional impact and speed than formal channels. The four domains were reinforced on a structural level by institutional mistrust, which resulted from conflict history and fluctuating service delivery. Vaccine hesitancy in Southern KP is part of interwoven social designs that are cautious of or oblivious to formal biomedical communication. Social and Behaviour Change (SBC) responses need a paired approach targeting structural governance reforms while addressing gendered authority, religious legitimacy, social hierarchies, and rumour ecosystems.

Article History

Received 15 June 2026

Revised 24 July 2026

Accepted 24 August 2026

Published 29 September 2026

OPEN ACCESS

Corresponding Author *

Keywords

Vaccine hesitancy; gender norms; religious authority; social hierarchy; rumor networks; trust deficit; ethnography; Social and Behaviour Change; polio; Southern Khyber Pakhtunkhwa; Pakistan

1. Introduction

Efforts to comprehend the issue of vaccine hesitancy and its complex drivers have led to its recognition as an emerging public health problem by the WHO SAGE Working Group (WHO SAGE Working Group, 2015; Eskola et al., 2015). The progressive understanding of this issue is reflected by an extension of the basic 3C model (complacency, convenience, confidence) to a 5C model by Betsch et al. (2018), which incorporates calculation and collective

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responsibility. Throughout the literature, there is a linchpin of trust - in vaccines, institutions, and healthcare workers – at the core of vaccine acceptance (Adhikari et al., 2022).

Pakistan and Afghanistan are the only countries still experiencing transmission of wild poliovirus type 1 (WPV1). Program failure alone cannot explain this endemicity; it also involves other deeply socio-economic, religious, and political factors such as conspiracy theories, armed militancy, and targeted violence against vaccination workers (Rahim et al., 2022). In 2022, all 20 cases of WPV1 occurred in three districts in Southern KP, where supplementary immunization activities are missing children to the extent of about 50,000, and communities have repeatedly boycotted supplementary immunization campaigns (Mbaeyi et al., 2023). Likewise, in the year 2024 and 2025, most of the cases have been reported in North Waziristan, Bannu, Tank and Lakki Marwat. To understand these patterns, this necessitates qualitative methods that access lived experiences and assess them in combination with individual-level attitudinal explanations and structural forces (Jenkinson et al., 2025).

Critical structural explanations of governance failures in vaccine uptake, institutional practices, and cultural dynamics have not been well theorized (Tiwana & Smith, 2026). According to Ali (2025), there is a difference between an information deficit and vaccine hesitancy, as the latter is deeply embedded in sociocultural, political, and historical narratives. The objective of this study was to fill this gap: to generate a nuanced, ethnographic description of the interplay of gender, religion, social hierarchy and informal information flow in shaping vaccine decisions in Southern KP, and to develop actionable SBC and programmatic recommendations.

The study aims were: (i) to document community perceptions, beliefs and motivations regarding vaccination; (ii) to map the social and cultural networks that tribal elders, religious leaders, gendered family structures, and youth groups play in shaping health decisions; (iii) to understand the dynamics of trust between communities and frontline health workers; (iv) to identify structural and institutional barriers to vaccine uptake; and (v) to develop culturally responsive SBC recommendations.

2. Theoretical and conceptual Framework

A framework of four complements of scholarship, integrated with each other, is the basis of this study. Gender and Power Theory sheds light on how women's autonomy in health decision-making is systematically limited by patriarchal household structures (Molm, 1986). Less than 10% of women in Pakistan have meaningful decision making power over their health care; child vaccination rate is 3.7 percentage points higher if the husband consents in household decisions (Bussolo et al., 2021; Lassi et al., 2021). Further, according to Trust Theory (Deutsch, 1958), there are three analytically distinct dimensions of interpersonal, institutional, and political, each lost over time in Southern KP through specific processes, such as the cover operation by CIA on hepatitis B vaccination in children in 2011 and targeted violence against more than 200 health workers (Syed & Qazi, 2025). In 1965, Buckner (1965) and Scott proposed the Social Network and Rumor Transmission Theory as shown in **Fig 1**. The theory demonstrates that institutional mistrust is more predictive of vaccine refusal than media consumption or information deficit, with WhatsApp and hujra networks being high trust amplification vectors for misinformation (Zilinsky & Theocharis, 2025). Additionally,

the Social and Behaviour Change (SBC) Framework is informed by the Social Ecological Model, and positions behaviour change within five layered levels (individual, interpersonal, community, organizational, and policy) that offer the translation architecture to take ethnographic insights into program strategy (UNICEF, 2017) **Fig 2.**

These frameworks are analytically complementary; gender and power theory provides insight into who decides; trust theory provides insight into how they decide; social network theory provides insight into how vaccine-relevant information reaches decision makers; and SBC theory provides insights into how structural change can be pursued (Ali et al., 2026).

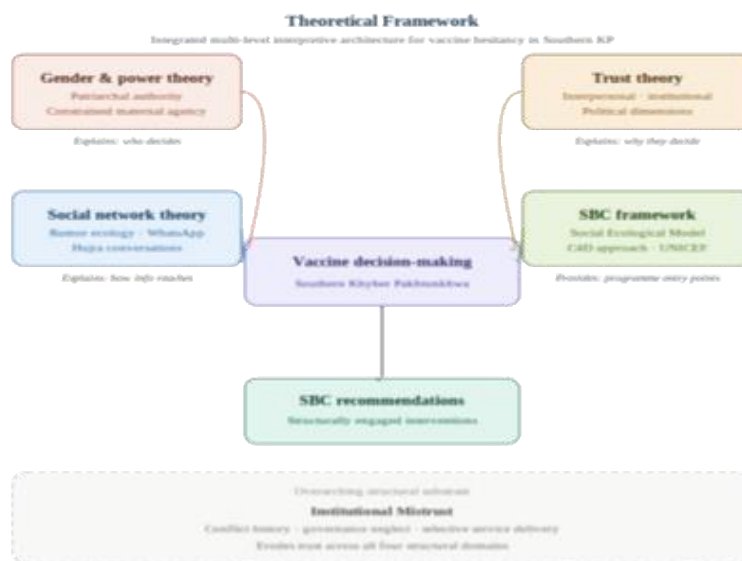


Figure 1: Theoretical framework of the study

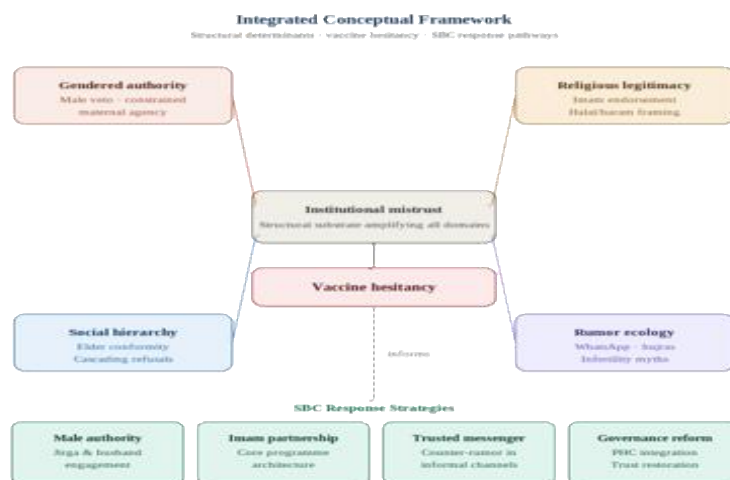


Figure 2: Integrated conceptual frame work

3. Methods

3.1 Study Design and Setting

A qualitative ethnographic design was used to develop context-specific knowledge of structural factors associated with vaccine hesitancy. The ethnographic methodology was

chosen because it is able to gain access to the process of meaning-making, relationship, and power structures that cannot be obtained through quantitative methods. The study was carried out in six polio high-risk districts of Southern KP (Bannu, Lakki Marwat, Dera Ismail Khan (DIK), Tank, South Waziristan, and North Waziristan) which were prioritized for the study based on Immunization Service Delivery (ISD) high-priority classification, persistent refusal rates, and complex socio-political landscapes. The research sites included households, hujras, Basic Health Units (BHUs), mosques, markets and community gathering places.

3.2 Participant Selection and Data Collection

The participants represented a range of vaccination attitudes (accepting, hesitant, and refusing), and social roles (parents/caregivers, community elders, jirga members, religious individuals, youth aged 18-29, frontline health workers, district health authorities, and social mobilizers) through purposive and snowball sampling. Three data collection tools were used: IDIs (n=42, 35-60 minutes), FGDs (n=20, 60-90 minutes), and KIIs (n=21, 40-60 minutes) with stakeholders in the health system. Data collected through participant observation provided contextual information about behavior in the households, facilities and community spaces. The data was all collected in Pashto and Urdu by trained, gender matched enumerators.

3.3 Analysis, Ethics, and Reflexivity

Braun and Clarke's (2006) reflexive framework of inductive thematic analysis was used, including familiarization with the data, open coding, development of themes, and interpretation. All participants gave verbal informed consent (in Pashto or Urdu), and no personal identifiers were collected. Data were stored on encrypted devices. Throughout, gender matched enumerators and safety procedures were maintained. Reflexive field diaries recorded researcher positionality and interpretive reflections, as there is a possibility that institutional affiliations have influenced some of the participant's responses.

4. Results

Analysis of 83 data collection encounters across six districts reveals four major structural themes and one overall cross-cutting theme. They form an interlocking system, not a collection of discrete barriers in which gendered authority, religious legitimacy, social conformity, and rumor ecology interact to produce hesitancy as a collective social practice of hesitancy.

Theme 1: Gendered Authority and Constrained Maternal Agency

In the majority of households visited, the permission for vaccination came from the authority of male decision makers – usually comprising fathers, older male relatives, and grandfathers. Even women who privately believed in vaccination spoke of a zone of decision-making authority set around them that relied on men who also approved, asserting a masculine authority that insisted on protection of its women.

“A mother cannot decide; we ask the elders. If the grandfather says no, the whole household refuses.”

This zone of authority did not simply influence its own household, as webs of hierarchies in the community centered around respected elders created an amplified decision making

process. The refusal to vaccinate the household by one respected elder was often mirrored by neighbours refusing to vaccinate as well, mostly for social reasons rather than personal beliefs around vaccines.

For women, information mainly arrived via domestic visiting networks – informal, neighbourly conversations with other women which spread both pro-vaccination messages and fear-based rumours – due to segregation. Women were left out of hujra discussions, mosque announcements, and formal community discussion forums. However, data revealed a limited, negotiated agency wherein women could affect change indirectly. When male participants were absent, participants reported numerous strategies including ‘stealth vaccination’ without the male’s knowledge, portraying vaccination as a manly protective measure, and borrowing the influence of female elders. These strategies show that demand for vaccines often goes beyond what can be detected in terms of acceptance, and that female agency is not an absence, but rather a structural limitation with critical program implications.

“We cannot open the door to male workers when men are not home. It is against our customs.”

Theme 2: Religious Narratives as Moral Gatekeepers

Vaccine uptake and refusal were strongly influenced by religious authority. Imams and religious scholars played a critical role in the trust ecosystem of the community: their approval of the permissibility of vaccination produced a social effect that could not be matched by any government official or other program. The community reacted immediately and profoundly to religious leaders' endorsement of vaccination in terms of religious tenets around preserving health. Families that had refused visits changed their mind after Friday khutbahs promoting immunisation.

“If the imam says its halal, people will accept it. Without his word, many families hesitate.”

Their silence, conversely, also held power in that it enabled halal-haram narratives to proliferate. Vaccines were linked to pork derivatives, alcohol-based preservatives, and anti-Islamic foreign agendas, a framing amplified by the historical entanglement of vaccination campaigns with counterterrorism operations in the region. The political theology of vaccination was rooted in community experiences of state and international actors, whose agendas provided grounds for theological and political distrust alike.

“People think these vaccines are part of a foreign plan because of what happened during the war years.”

The programmatic implication is clear: religious leaders are not merely communication channels, but the moral authority structures through which communities evaluate biomedical interventions. Their engagement must be substantive to sustain genuine partnership in Islamic health promotion, rather than limited to instrumental message delivery.

Theme 3: Social Hierarchies, Collective Conformity, and Cascading Refusals

In Southern KP, social hierarchy is mediated through multiple authority structures – tribal elders, maliks, and jirga members – which together influence the normative context for vaccine decision making. Conformity-pressure within the community resulted in households' refusals when influential community members took skeptical or oppositional positions, which were independent from personal evaluations by family care-givers. Multiple participants mentioned that their decision to get vaccinated was based on the condition that they could

only get it if an elder was not around, or they were never going to get vaccinated because to do so would cause an altercation with family member.

Importantly, conformist processes are bi-directional – what is a refusal can be a confirmation when trusted leaders advocate vaccination publicly. CHVs, early adopter families from respected tribal families and elders who visibly vaccinate their grandchildren were always found as strong positive influence nodes. The SBC challenge is thus not to ignore social hierarchy, but to engage it appropriately.

“When someone from our own village vaccinates, we trust them more. Outsiders we do not know.”

Youth, especially youth who were educated young men with health knowledge, were a new constituency that was pro-vaccination, but often lacked power in community deliberation because they were younger than the other adults involved. Systematic expression of young people's voices can be seen as a key driver of norm change.

Theme 4: Rumor Ecologies and Informal Information Ecosystems

The informal channels of communication are the primary ways vaccine-related information circulates in Southern KP. These include WhatsApp groups, hujra discussions, mosque social spaces, visiting networks within the home, and narratives of return migrants. Information is assessed less on the basis of evidence, and more in terms of who is delivering it and how credible they are.

The platform that was most prevalent to spread misinformation was WhatsApp, which came out as the top vector in all the data collection modalities. In hours, adverse events after vaccination were depicted in videos that spread through the community with apparent evidentiary weight that text-based counter-messaging cannot achieve. The most corrosive religious misinformation videos were those of a scholarly framing, but delivered in a video format that was emotional. *“One WhatsApp video can undo months of our effort it spreads everywhere in minutes.”*

The Hujra conversations had their own order of authority and social norms, and strengthened the accusations of vaccine skepticism and general healthcare skepticism into community-wide positions, whose content individual members could not contest without the support of higher authority. Male-weakness and the belief that polio drops make men sterile or children to be physically weak was the most common crosscutting misinformation story found, being reported in each of the six districts. This is a testament to its entrenchment in community concerns over the continuity of lineage and the vitality of manhood, not to a recent event of information.

“Men say these drops weaken boys when they grow older, that’s why people refuse.”

Structural disadvantage means that counter-messaging in formal, less trusted channels is at a disadvantage to misinformation in informal, well trusted channels. Effective counter-communication must work in tandem with the rumor ecosystem – trusted community messengers sharing accurate counter-narratives on the same WhatsApp groups, hujra spaces, and local social circles used for spreading rumors.

Theme 5: Institutional Mistrust as Structural Soil

Generalized institution mistrust permeates all four of the major themes, which is the loss of trust in the institutional framework that supports the place of gender-based hesitancy, religious

doubt, social conformity and rumor credibility. Mistrust is not without reason, as it is rooted in the communities' experiences with inconsistent, extractive, and often violent governance. The polarization between regular visits to vaccination campaigns, and the lack of working essential health services created a strong narrative of selectivity of the state. The one common critique raised by participants in all districts was that the state's engagement was of what it had to offer communities (polio-free status) and not what communities had to offer the state. *"When we ask for clean water, nothing happens. But for polio, they come every week why only this?"*

This structural mistrust reinforced all other hesitancy drivers: the believability of religious doubt, the social reasonableness of male authority's doubt, the epistemological plausibility of conspiracy theories, and the rational, but not comfort-seeking, trust in vaccinators who are locally embedded. The issue of institutional mistrust is not an issue that is overcome by one facet of hesitancy interventions, it is an institutional condition that otherwise undermines the structural basis for all other SBC interventions.

5. Discussion

The main finding of this study is the shift from the individual-level explanation of vaccine hesitancy as a deficit to the social structural explanation of vaccine hesitancy. Sources of hesitancy in Southern KP include individual ignorance or susceptibility to misinformation, but also predictable social products like: women's lack of ability to make their own health decisions; the requirement for moral legitimacy to be given to biomedical acceptance; the role of conformity as a social survival strategy; and the fear narratives communicated via high-trust channels and the official counter-narratives perceived as institutionally suspect (Ali et al., 2026).

Here, the gender aspect of hesitation plays a more subtle role, one of authority, rather than access. The literature has been scant on gender barriers, even though they have been discussed in the context of mobility or purdah restrictions, this study reports on a more basic gender barrier: A man in the household systematically overrules women's intentions to get vaccines. If SBC is not implemented at the same time as the male actors that limit women's agency, there are inherent limits of effectiveness in women's participation in the SBC program. Responsiveness to gender in the immunisation programs needs to be all-encompassing, including increased women's reach (female vaccinators and women-only outreach) and increased male reach (vaccination is consistent with a male protective identity).

The same goes for religious authority which needs to be re-imagined from blockage to opportunity. The response rate of the Muslim scholars was low in promoting polio immunization (44.6%), suggesting low utilization of the source of trust. Explicit endorsement by an imam yields immediate and significant changes in acceptance of the message, whereas religious ambiguity allows for fear stories to flourish, as the Southern KP experience shows. As evidenced from other locations worldwide where the struggle against polio has been predominantly carried out in Muslim-majority contexts and religious leadership has been a key partner in polio eradication (Global Polio Eradication Initiative, 2018), religious engagement needs to be mainstreamed into the program architecture, not as an ad hoc communication strategy.

The communication challenge is that high trust informal channels provide misinformation, while low trust formal channels provide counter-messaging. The basic communication challenge is the structural asymmetries between high trust informal channels that provide misinformation and low trust formal channels that provide counter-messaging. The case of a single WhatsApp video that put the national polio campaign on hold for a day in Peshawar in 2019 is an example of such a situation (Purnat, 2024). In fact, Zilinsky and Theocharis (2025) show that a tendency to believe in a conspiracy theory and a lack of trust in institutions are more important than access to media or information deficits for vaccine refusal. WhatsApp misinformation is thus an amplification, rather than a cause of, mistrust – without it, there would be other channels that would continue to create mistrust.

Most importantly, vaccine hesitancy in Southern KP is not a communication problem, but a governance problem. Communities now have historically informed concerns that such programs are not fully dedicated to the scope and breadth of their health and wellness and that they are approached in an obligatory, nonselective way. Malcolm and McLean (2025) show that any hesitation is a sign of the breakdown in relation between the State and the citizen and not merely ignorance. Relying only on these sources of mistrust, communication campaigns can be counterproductive, making communities' feel that health programs are about intervening in communities instead of caring for them. It is essential to have governance-level responses that sustain investment in primary health care, community partnership that is genuine, and visible responses from institutional structures.

6. Policy and SBC Implications

The following implications are provided by the four domains of structures identified and are aligned for operationalisation by the UNICEF SBC components, EPI departments and district health teams. Efforts should be made to directly involve fathers, grandfathers, and male elders as the key decision makers in SBC efforts. Structured engagement programs for husbands and fathers, home visits to men as part of their household protocols, and messages which emphasize the protective responsibility of men when it comes to vaccinations are strongly supported. Vaccination endorsements can be brought to a jirga deliberation room and cause a reversal of the conformity dynamic, resulting in cascading acceptance. Religious leader engagement needs to be elevated to its place in the program's basic architecture. There should be structured and sustained partnerships with imams and scholars in each district, to provide accurate information on vaccinations in the Islamic framework, national religious authority endorsement, and tools of engagement such as the use of khutbah materials and digital content on WhatsApp. Engagement needs to be conducted around specific narratives encircling halal/haram framing, around concerns of infertility, and narratives of foreign agendas needs to be countered through imam delivered counter-narrative using Islamic scholarship. Real-time social media listening should track what people are saying about WhatsApp on social media, so that a counter-narrative can be created in a timely manner before narratives become 'irreversibly currency'. Community health volunteers, imam associates, youth leaders, trusted community communicators who are respected by mothers should be trained to counter narratives in the same ways that they are spread in the community. The content of the counter-narrative needs to resonate emotionally, be in video format and needs to be presented by trusted local voices, not government officials or external NGO representatives. Investment in recruitment, training and retention of local members of the target communities to be

vaccinators, especially women from within the target communities, should be considered as a trust investment for infrastructure needed to win their trust. There is a need to systematically develop interpersonal communication competencies of vaccinators. Outreach scheduling reforms should focus on building relationships, rather than frequency of outreach, since some people have been found to experience vaccine fatigue from superficial, high-frequency outreach. Communication is not enough to bridge the trust gap in the structure. The most effective trust-building indicator of any kind is the visible improvement of primary healthcare services, and helping to meet the needs of mothers and babies with vaccination outreach, staffed and stocked BHUs. Community feedback mechanisms, which allow communities to raise concerns, report adverse events and give input on program quality, indicate partnership not target status and provide opportunities for incremental trust restoration.

7. Strengths and Limitations

The multi-site ethnographic design in the six districts of this study gives it an analytical depth that is not seen in other qualitative studies on vaccine hesitancy conducted in Pakistan. Multi-level accounts, resulting from triangulation of IDIs, FGDs and KIIs with community members, health system actors, and frontline workers, provide a multi-layered description of household relationships and the realities of the health system in a single frame of reference. Findings are ecologically valid and culturally valid as they are grounded in participants' lived experiences.

The limitations involved are that there was no possibility of generalizing the results of the study to other sites that were not purposively sampled and there was a security constraint to being able to gain access to the most insecure communities, which may have underrepresented the most refractory refusal contexts. Although the interview protocols were not judgmental, social desirability bias could have introduced a bias in the characterization of the vaccination behavior and/or institutional critique. The findings are very specific to post conflict Southern KP, and cannot be transferred without adapting to the context. The risks involved in translation from Pashto and Urdu were conceptual loss which was addressed through using bilingual cross validation.

8. Conclusion

Vaccine hesitancy in Southern KP is a socially structured outcome of a gendered authority system where women are not involved in taking decisions about health, a religious legitimacy system that assigns moral weight to biomedical interventions, a hierarchical conformity structure that transfer individual decisions of leaders to the community level and an informal information ecosystem which conducts fear narratives at higher frequencies and emotional intensity than formal health communication.

These are rooted and sustained by an institutional trust deficit that has been built up over time, and is a result of the institutions' experience in engaging with communities through violence, inconsistency and selective service provision. This is a governance issue, calling for governance-level solutions: long-term investment in primary health care, institutional responsiveness (as seen at the top of the health system), and community co-design of health programming.

Imam partnerships, male authority engagement, trusted-messenger counter-misinformation programmes, local vaccinator investment, and integrated primary healthcare delivery are not add-on improvements -they are strategic needs to make significant strides towards achieving immunization equity in Southern KP. The people of this area haven't opted to mistrust vaccination programs; they've been given reasons to. Trust and vaccine acceptance need to be rebuilt and sustained over time and in front of their communities, by providing them reasons to trust, again and again.

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