

ORIGINAL RESEARCH ARTICLE

The conditionality of COVID-19 vaccine acceptance: A qualitative study in Pakistan

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Abstract

Understanding both the motivations for vaccination and the causes of vaccine reluctance is necessary for the present worldwide immunization campaigns against the COVID-19 pandemic. The intention of the article is to compile local perspectives and misconceptions about vaccination choices. The intention of this study is to assemble what is usually recognized in cultural context as conspiracies and post-traumatic phase affects in decision making. This is ethnographic exploratory study of Faisalabad, Pakistan. Purposive sampling is used to acquire data, while in-depth interviews and focus group discussions are used as data collecting strategies. Study reveals the experience of people who faced traumatic events and decision about getting vaccinated, and that impact may arise from social and cultural factors related to both the traumatic event and the vaccination experience. Vaccination decisions can be impacted by the impacts of traumatic experiences, which can be influenced by cultural norms as well as social and cultural variables. During this traumatic period, it is natural for conspiracies to emerge in order to influence people's decisions to get vaccinated. The ability of the COVID-19 vaccine to control the population and its unpleasant side effects are significant topics in this disinformation. (*Afr J Reprod Health 2025; 29 [3]: 143-159*).

Keywords: Trauma, Covid 19 vaccines; Conspiracies; cultural beliefs and social media

Résumé

Comprendre à la fois les motivations de la vaccination et les causes de la réticence à la vaccination est nécessaire pour les campagnes mondiales actuelles de vaccination contre la pandémie de COVID-19. L'intention de l'article est de compiler les perspectives locales et les idées fausses sur les choix de vaccination. L'intention de cette étude est de rassembler ce qui est habituellement reconnu dans le contexte culturel comme des complots et des effets post-traumatiques dans la prise de décision. Il s'agit d'une étude ethnographique exploratoire de Faisalabad, au Pakistan. L'échantillonnage raisonné est utilisé pour acquérir des données, tandis que des entretiens approfondis et des discussions de groupe sont utilisés comme stratégies de collecte de données. L'étude révèle l'expérience des personnes qui ont été confrontées à des événements traumatisants et à la décision de se faire vacciner, et cet impact peut découler de facteurs sociaux et culturels liés à la fois à l'événement traumatisant et à l'expérience de vaccination. Les décisions en matière de vaccination peuvent être influencées par les conséquences d'expériences traumatisantes, qui peuvent être influencées par les normes culturelles ainsi que par des variables sociales et culturelles. Durant cette période traumatisante, il est naturel que des complots émergent afin d'influencer les décisions des gens de se faire vacciner. La capacité du vaccin contre la COVID-19 à contrôler la population et ses effets secondaires désagréables sont des sujets importants dans cette désinformation. (*Afr J Reprod Health 2025; 29 [3]: 143-159*).

Mots-clés: Traumatismes; vaccins Covid 19; complots; croyances culturelles et médias sociaux

Introduction

Traumatic circumstances in which individuals experience loss or powerlessness can have a profound impact on thoughts and behaviors. The

experience of deciding to get vaccinated or not is affected by such issues and memories from the past.¹ A portentous occurrence that affects an individual or a close member of the family by causing serious injury or death is termed a

'traumatic event'. 'Stressful' is used to describe such experiences that are less severe but are still unpleasant. Trauma is something that many people will endure at some point in their life, although its effects vary from person to person.^{1, 2} These people's experiences shape their risk perception and their decision-making processes as in the case of deciding to get vaccinated or not.

As for the case of COVID-19, the pandemic can be viewed as a form of cultural trauma—an enduring psychological and social harm that impacted cultures all over the world.³ Apart from being a health problem, COVID-19 altered everyday life, severed social bonds, and created a cycle of dread and bewilderment. Lockdowns and social distancing led to social alienation, the collapse of economies, and an overworked healthcare system. Thousands lost family members without saying goodbye, culminating in added pain in the quests for health and financial security.⁴

Following sociologist Alexander, cultural trauma theory explains societies' reactions towards such enormous changes. The shock of the pandemic was so sudden that it caused people's vulnerability and helplessness. The emotional impacts forced individuals to look at the world differently in terms of making a decision whether to vaccinate or not. As trauma affects individuals' perception towards risks and choices, the same can be said about individuals' perception on vaccination whether it was the COVID-19 pandemic that caused that kind of trauma. This resulted in nihilism, confusion, and suspicion which were exacerbated because of the breakdown of social order and communication and contributed to vaccine hesitancy.⁵

People's perception of the vaccine was also affected by the trauma caused by the pandemic, and so the pandemic and the vaccination came as a shock. There were doubts over the rapid development of the vaccine, as well as ambivalent information sent out by governments, health authorities, and the media that created uncertainty amongst people. Moreover, the pandemic's social distancing factors made many feel scoured by the fake news, especially over the social networks, which increased mistrust. All those uncertainties, fears, and disturbances made many doubt the utility and safety of a vaccine.

Understanding vaccine hesitancy in relation to cultural trauma, it is possible to assert that there was also something more than health issues – there was a new and profoundly social and emotionally traumatic experience which was caused by the pandemic. Trauma transformed how citizens perceived risk and trust towards societal institutions and how they made decisions—all of which matter in the context of vaccine acceptance. To resolve vaccine hesitancy and further develop public health responses, it is essential to comprehend how trauma shapes decision making.⁶

Decisions towards vaccinations are influenced by prior experiences.¹ An individual's thoughts and behavior can often be affected by a traumatic occurrence. The term "traumatic event" refers to situations in which a person or a close family member is in danger of suffering serious harm or passing away. An extremely unpleasant occurrence that does not pose a high risk of serious injury or death is referred to as stressful. Many people will go through a traumatic episode at some point in their lives, even though the prevalence of different trauma experiences differs by area. Researchers may gain a better understanding of vaccination intention and behavior by looking into the impact of trauma on vaccination decisions. It is implied that there is a connection between the decision to vaccinate and the effects of a traumatic event because both are related to perceptual evaluations, social factors, and cultural beliefs.^{1,2}

Posttraumatic stress disorder (PTSD) is a psychological condition that can affect people who have witnessed or experienced a traumatic event if they also experience (for longer than a month) the following symptoms: (a) disabling symptoms connected to the traumatic incident (such as nightmares, flashbacks, and recurring memories); (b) persistent avoidance; (c) mood changes; and (d) heightened arousal/reactivity (such as angry or irritable outbursts, difficulty Risk assessment and outcome prediction, which are both used to guide vaccination decisions, might be impacted by traumatic events. Expected outcomes and perceived risks serve as the foundation for the assessments that inform vaccination decisions. This includes the likelihood of developing a disease that can be prevented by vaccination, the severity of the disease, and the expected regret of doing so.⁷

Similar to this, traumatic experiences have an impact on decision-making by altering threat consideration systems which leads to incorrect interpretations of the trauma and memories imbuing ordinary situations with a sense of peril.⁷

Both the decision to vaccinate and the effects of trauma are influenced by social circumstances and societal views. Social norms and vaccination intentions have been linked in several research.^{8, 9} According to Hudson & Montelpare (2021),¹⁰ vaccine opinions within families are rational and spatially localized, reflecting social network norms.¹¹ The effects of trauma may also be worsened by social issues, such as a lack of social support and COVID-19 as traumatic events may have a poor effect on social interactions.¹² The interplay of subjective norms and perceived behavioral control strongly influences vaccination intention. This highlights yet another way in which vaccination choices may be connected to psychological trauma because trauma is generally associated with emotions of loss of control and/or helplessness, both of which can impair volitional control.¹³

In order to effectively combat the COVID-19 pandemic, it is important to understand both the motivations behind vaccination and the causes of under vaccination. Vaccine therapies have mostly ignored the nuances of the relationship between the two, despite studies associating psychological stress and vaccination choices. This study aims to gather local views and misconceptions about the connection between traumatic experiences and vaccination choices. This could assist in determining whether trauma survivors need specific vaccination aversion treatments.

Theoretical framing

COVID-19 can certainly be defined as a cultural trauma since it caused its fair share of damage in societies across the globe.¹⁴ It would be superficial to say that the pandemic was purely a health catastrophe as in reality, it was much more than that; it was a sociocultural wound. These dramatic events resulted in the implementation of quarantines which severed family connections and hurled individuals across the world. Such changes lead towards feelings of disconnection, anxiety, and

helplessness. It would be an understatement to say that economies came crashing down, jobs and other opportunities were made redundant, and social structures were devastated. There was an overtaking of health systems, and many people were left with sorrow from the death of family and friends with no closure.

Ordinary social functions such as get-togethers, parties and even basic communication were removed, loosening the bonds that are necessary. The collective fear of contracting the virus became engrained in everyone, with the other problem of uncertainty prevailing simultaneously. COVID-19 also brought to the fore many social injustices, with certain groups bearing the brunt of the damages even more so, creating further fissures in societies.

The pandemic uncovered cultural fissures that societies had previously overlooked. It modified the way we understand our connection with each other as well as our daily lives. People were completely overwhelmed with hopelessness; not only were lives lost, but also the regular standard of living for many people deteriorated in a matter of months. In this situation of crisis, many people started to refrain from taking the COVID-19 vaccine even when it was made available. The pandemic cut across countries and was a health, social and mental problem. People who were used to moving around the world were now under lockdown, forced to stay in their homes and distancing from others was mandatory.¹⁵

Before the general population began wearing face masks everywhere, the vaccines were quickly created and rolled out, causing some people to become apprehensive. These swift developments were alarming for many people. Confused information about the vaccines was the order of the day with conflicting reports from government, media and health authorities. This uncertainty raised doubts in many people's minds concerning the safety and effectiveness of the vaccines, developed in so little time.

One of the tragic outcomes of the disruption of social life in general was the facilitation of the spreading of conspiracy theories and misinformation. As social contacts disappeared, the audience came on social networks, where plenty of unverified information on the vaccine was present.

This fear, gentleness and levels of faith in public authority created conducive condition for vaccine apprehension. In this instance, the inability to withstand other events in the future, and to withstand them properly, seems, as sociologist Alexander states, to be telling of peoples experience of significant sociocultural upheaval – cultural trauma. This time such disruption caused by the pandemic made people marginal and anxious on how to regard the vaccine and therefore very cautious towards it.

Methods

This qualitative study examined the causes of COVID-19 disinformation and vaccination resistance in the Faisalabad, Punjab, Pakistan area using an interpretive technique and epistemological framework.¹⁵ Faisalabad belongs to Punjab in Pakistan and has an estimated population of more than 3.8 million, which makes it the third most populated city in Punjab. Due to the city's flourishing industrial sector, mainly textiles and agriculture, it has undergone rapid urbanization in the recent decades.

It facilitated the overall population growth, which in return helped contribute towards the economic and cultural importance of this city to Pakistan. Moreover, the population in Faisalabad is further enriched by a number of ethnicities all of which mainly consists of the youth group which adds to the workforce and business activity Faisalabad has to offer. The urbanization of the city further aids its population growth, enabling Faisalabad to continue growing economically.

Data collection

In-depth interviews and focus groups were used in this study to create a more thorough grasp of the issue being studied. In IDIs, participants were encouraged to openly and fearlessly share their knowledge, while FDGs with other groups allowed participants the chance to study many points of view on a specific event through in-depth group debate and involvement with core concerns.

The IDIs and FGD research participants had been selected using deliberate sampling approaches. All research participants were selected from the subject matter community in order to build rapport, trust,

and fruitful working relationships with it. By entirely separating male and female operations and allowing only female employees to interact with and approach the female participants, we also respected the cultural norms and customs of the community. One male research assistant who was hired from the same region conducted interviews with male respondents. All interviewers took part in a 4-hour Zoom training on interviewing techniques and ethics led by the principal author of the study, who has extensive experience with qualitative methods. It was simpler to build trust and rapport because the principal investigator was also a woman with Punjabi descent who spoke the local language.

The interview questions in this manual concentrated on understanding COVID-19, acceptance of vaccinations, and vaccine resistance. Three non-study participants with traits resembling those of the research population made up the pilot test group for the interview guide. The interview questions' language and chronological order were two areas where participants recommended the interview guide be revised. The guide was changed without waiting for more participant response after carefully examining each idea.

Data gathering started after the final round of scheduled interviews. Prior to the interviews, sociodemographic information was acquired, including gender, age, education, and employment. Prior to the interview procedure, participants were made aware of the study's objectives and methods, and their informed consent to participate was then acquired.

The confidentiality of all the participants' personal data in the study was assured. The participants received face masks and hand sanitizer before the interviews started. The NCOC of Pakistan's instructions called for social isolation, which was done. Each FGD was limited to 7-9 participants in order to drastically lower the risk of COVID-19 transmission.

Data analysis

After receiving informed consent, the audio from each IDI and FGD was captured, and it was then translated into English for data analysis. To check for reliability, four IDI narratives, one focus group discussion, and the field notes were all examined by

two language specialists at random. Throughout the data collection and analysis phase, the study's author frequently met with the research assistants to confirm participant intention had been recorded and to validate the correctness of the information gathered. The slight vocabulary changes in the English translation led to confusion and discrepancies.

This study followed the six flexible steps suggested by Braun and Clarke,¹⁶ for the analysis of qualitative data by using an integrated theme analysis technique. We employed both deductive and inductive techniques while developing and examining codes and themes.¹⁷ This integrated approach allowed us to thoroughly immerse ourselves in the data, reflect, and produce the fair, detailed, and convincing analytical account we required to shed light on the phenomena under research.¹

Demographic characteristics of respondents

Respondents' details give us an understanding of how the society is composed and its social and economic activities. The data provides a comprehensive outline of the age, sex, income, family type, residence, and education level of the population.

The majority of the sample respondents are aged between 15-25 and hence are a whopping 46% of the sample population. This indicates a young population which is good because it contributes a lot of energy and potential towards growth in education, employment, and innovation sectors. A young population can certainly be utilized for positive change, but it also poses problems such as adequate employment for young people who have just entered the labor market. The second largest grouping is the age group of 25-35 which is 37%. Most of this age group is usually in the early or middle years of their respective careers, maybe with young kids.

They are probably the most economically productive and so the economy greatly benefits from this group. The 35-45 group comprises of 10% and the smallest 45 and over group has 7%. These groups tend to have more experience and may be in more senior positions or management positions. Though, the low percentage of older people may

suggest younger generations want to join the work force much sooner.

Gender Distribution states that gender balance is fairly maintained, with 51% male and 49% female. This equilibrium in the gender distribution seems to create room for equal involvement in education, jobs, and leadership positions. Both men and women must have equal access to opportunities, and thus gender equality is important in facilitating a just society. This information indicates that there are more men than women, but this slight disparity demonstrates that both genders are equally represented and have access to several facets of the society. This gender balance will most likely foster an environment conducive for gender equality in more sectors over time.

An analysis on Household Monthly Income Distribution gives us an understanding of economic conditions of the people. As shown in the data, 32 percent people surveyed earn less than 20,000 PKR per month, which is below average income level. This points to a major segment of the population likely facing challenges with meeting minimum requirements. Level below this group falls at 34 percent of the population, which earns above 60,000 PKR per month, and is higher up in the income scale. Tucked between the two extremes, 21 % earn between 20,000 – 40,000 PKR while 13 percent earn between 40,000 – 60,000 PKR. These levels of incomes help illustrate the purchasing capacity of the people and have a direct effect on the standard of living, service intake, and the financial status of the people. There appears to be a wider gap between the low- and high-income earning groups as compared to other populations, which implies that there might be inequality in the distribution of wealth in the society.

According to Family Structure Distribution, 49% of the foreign-born indicated they are in nuclear families while 51% are engaged in joint families. Parents and their children make up the members of a nuclear family, whereas joint families include grandparents, cousins, aunts, and uncles. The greater prevalence of joint families could signal the existence of cultural attitudes that stress the importance of family closeness along with multi-generational households. Joint families also have better social support systems since many

members from different generations are able to live with and assist each other. On the other hand, nuclear families enjoy greater autonomy but may have problems with resource sharing and attending to aging relatives.

66% of the surveyed population resides in cities while 28% and 6% live in villages and towns respectively, as per Household Location Distribution. Cities generally have better healthcare, education, and employment opportunities. The significant percentage of population living in cities suggests an increase in urbanization, meaning many people have been or are moving towards urban areas for better employment and living conditions. The 28% population living in villages can suggest a more traditional rural lifestyle with lesser resources available but possibly a more tight-knit community. Towns only constitute 6% of the population and serve as a small intermediate group. Urban features among people in towns are available but with limited access to urban services and inadequate job opportunities, experiencing a blend of rural and urban characteristics.

At last, the Education Level Distribution reveals information on the level of education attained by the population. 57% of the population and this is the largest slice, has completed 16 years of education, which is typically associated with high school and or an incomplete tertiary education. More than 16 years of education has been completed by 18% of the population, which indicates that a good number of individuals are still pursuing their undergraduate degree. A smaller portion of 13% has achieved 14 years of education which is considered as high school graduation. The remaining percentages represent those with 12 years or less of education. The presented evidence indicates that a large proportion of people have at least a high school education. However, improving access to higher education and increasing opportunities for this segment of lower education level is required.

Results

Vaccines remain one of the most important prevention interventions for the great majority of viral infections. They not only lower disease

incidence but also promote herd immunity. Aside from vaccination efficacy and safety, public acceptability is another factor that contributes to the success of immunization programs and ensures community-level herd immunity.^{19, 20} However, it has been shown that fear of the COVID-19 vaccine might hinder the global objective of generating herd immunity across varied locales.

Following the COVID-19 outbreak as trauma, a widespread reluctance or outright rejection to get vaccinated remained another significant problem. Many countries, including Pakistan, have made immunizations freely available to its population, yet some are reluctant to get vaccines out of concern about the potential side effects.²¹

Due to widespread vaccine skepticism, Pakistan is one of only two countries in the world that has not been able to eliminate the polio virus.²² Unfortunately, the COVID-19 immunization faced a similar pattern. According to one poll, a large number of healthcare workers and members of the general public refused to get the COVID-19 immunization. Furthermore, worldwide conspiracies exacerbated the public's misconceptions about the COVID-19 vaccination.²³ (Figure 2) Conspiracies happen frequently throughout any situation of crisis. It has been around longer, despite the paucity of evidence supporting data. When weak cognitive processes rely on poor methods of reality observation, conspiracies develop and gain strength.²⁴ Conspiracy theories involving science, religion, medicine, healthcare, and politics are pervasive and have a variety of repercussions on people.²⁵ The biggest obstacle to curing diseases that may be prevented in Pakistan is vaccine resistance. For instance, inaccurate information about vaccines is primarily to blame for the incomplete eradication of the poliovirus. The dissemination of unfavorable information and firsthand statements is greatly enhanced by the media.

The COVID-19 vaccination has safety concerns that could change humanity

Morbidity and death associated with receiving the COVID-19 vaccination was the most prevalent subtheme.

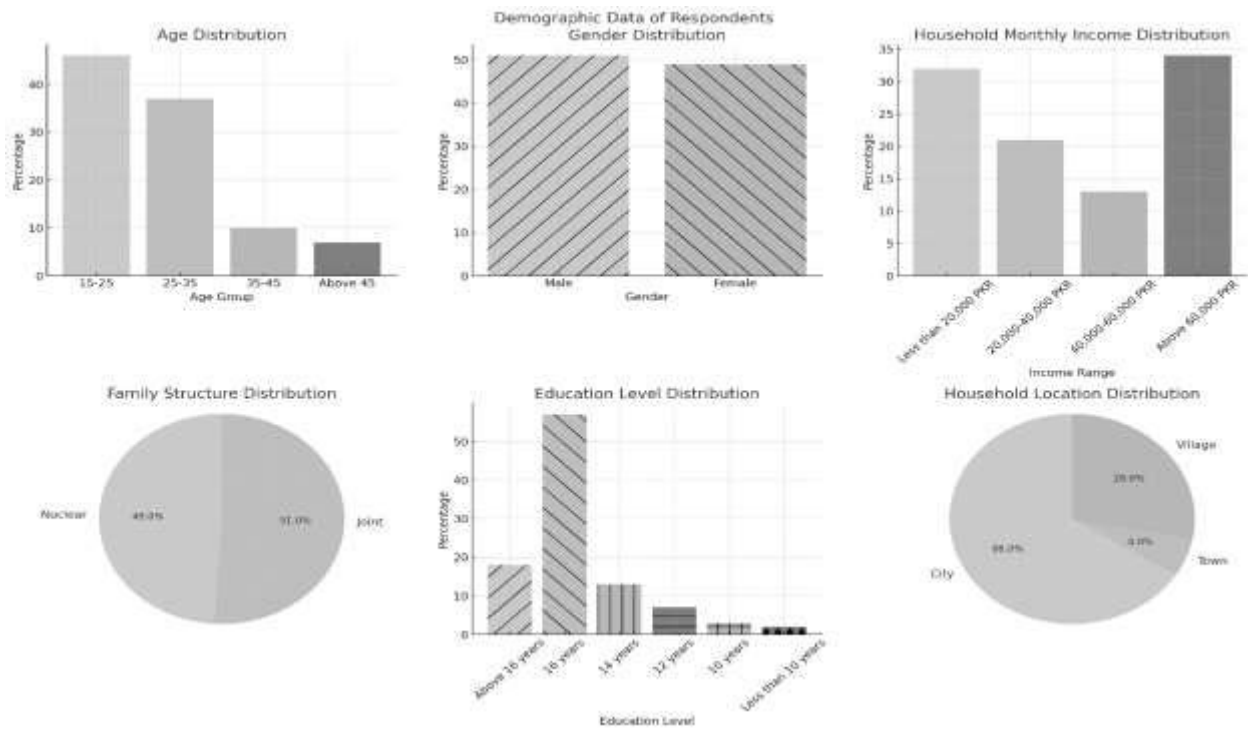
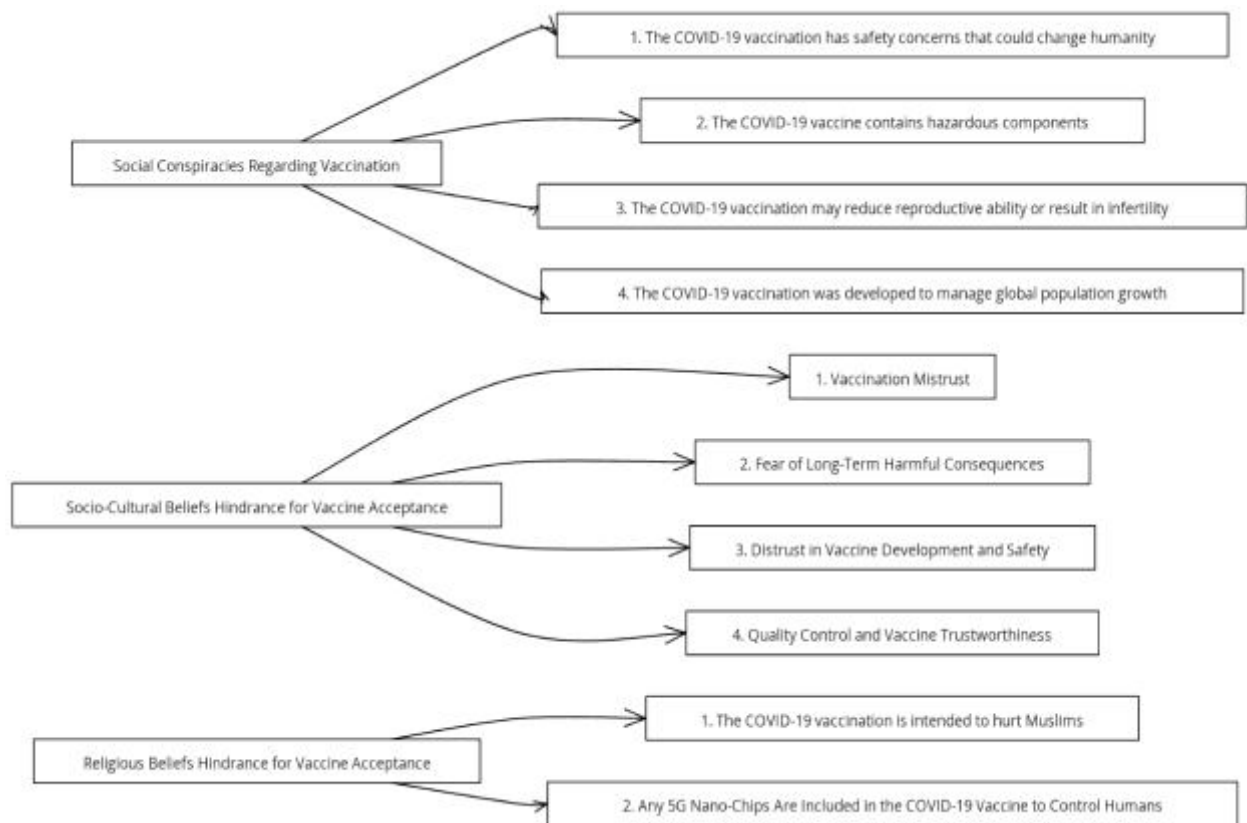


Figure1: Demographic characteristics of respondents

Table1: Demographic characteristics of respondents

	Characteristics	Percentage based on N=321(%)
Age	15-25	148 (46%)
	25-35	119(37%)
	35-45	32(10%)
	Above 45	22(7%)
Gender	Male	164 (51%)
	Female	157(49%)
Household monthly income	Less than 20,000 PKR/89.7 US\$	103(32%)
	20000-40000 PKR/89.178.14US\$	67(21%)
	40000-60000 PKR/178.14-267.21US\$	42(13%)
	Above 60000 PKR/267.21US\$	109(34%)
Family Structure	Nuclear	157(49%)
	Joint	164(51%)
Household location	City	212(66%)
	Town	19(6%)
	village	90(28%)
Education	Above 16 years education	58 (18%)
	16 years of education	183(57%)
	14 years of education	42 (13%)
	12 years of education	22 (7%)
	10years of education	10 (3%)
	Less than 10 years	6(2%)



Social conspiracies regarding vaccination of COVID-19

Figure 2: Graph diagram of vaccine hesitancy themes and subthemes

The most pervasive myth was that the COVID-19 vaccine would be a messenger-RNA, or mRNA, vaccination that could change people's Deoxyribonucleic Acid (DNA), ultimately transforming them into genetically modified humans. Other comments said that the COVID-19 vaccination was opposed by 160 doctors because it may alter human DNA, alter genes, induce malignancies, or impair fertility.²⁶

The Covid-19 vaccine contains hazardous components

The projected deaths caused by the COVID-19 vaccine and participation in immunization trials were just two of the claims made in regard to mortality.

One of the most widely spread misconceptions was that the second COVID-19 immunization dose was what killed the daughter of the Russian president.

We also found more false information regarding children and soldiers dying in different countries after having the vaccination; for example, it was claimed on Facebook that seven children died in Senegal after receiving the COVID-19 vaccine. Not to mention, it was falsely said that Bill Gates had said the COVID-19 vaccine would result in 700,000 people getting sick or dying.

The COVID-19 vaccination may reduce reproducibility or perhaps result in infertility

Conspiracy theories linking the pandemic to "Western," "American," or "Jewish" culture have been discussed. According to a research participant, *"The West has manufactured this virus as part of a scheme to impact us. The media also reports on it. The outcome of this effort has now affected everyone on earth. Because they assume that the "West" is worried about the Muslim population*

expanding, these people claim that the "plot" entails sterilizing Muslim women in order to reduce the Muslim population.

They are right to think this, as evidenced by the protests against Brown and Muslim immigration in Europe, white Americans' tendency to think that all Muslims are "terrorists," and white people's general perception that they are "superior" to all other races. This "superiority complex," which has roots in colonialism and imperialism, encourages white domination while also making the "Others" feel inferior and degraded, which leads to (often imperceptible) resistance.²⁷

The COVID-19 vaccination was developed to manage global population growth

The people also made the connection between the current vaccination campaign and the ongoing infectious diseases. Their earlier voiced reservations regarding COVID-19 included vaccines. They contend that the coronavirus is a "Western production" and that white people (British) were tasked with developing the vaccine. As one participant put it,

"It seems that the English people are the source of this virus. And if this assumption is true, then they are the ones who created all medications, including vaccinations. What if we allow physicians vaccinate our children and they end up dying? Who knows what type of immunizations these are".

The reasons for this local hostility to vaccination must be understood within this wider geopolitical context. From this vantage point, it is clear how vaccination may be perceived locally as a "political project" as opposed to a measure that could save lives. The roots of anti-vaccine sentiment started to take root in Pakistan as early as 1953, when many citizens opposed the government's Family Planning Program, which they saw as a "Western" effort to lower reproduction. Therefore, when the EPI was launched nationally in 1978 after a test study in 1976, they thought it was a government and Western world plot to guarantee that fewer Muslims would be born.²⁸

Socio-cultural believes hindrance for vaccine acceptance

The most obvious concern was vaccination hesitancy and refusal. In Pakistan, reluctance to deliver vaccinations, including the COVID-19 immunization, is prevalent. Participants stated their overall feelings towards vaccinations, which was especially noticeable when these feelings contrasted with religious or cultural views. This is referred to be "vaccine hesitancy" in the present study.

Vaccination mistrust

Participants considered vaccination healthy individuals to be cruel, comparing COVID-19 doses to being treated like animals (since vaccines are given to dogs):60 years of age Female, housewife remarked,

"I will not vaccinate myself because these vaccinations are also given to dogs; it is untrustworthy."

Some study participants showed an extremely rigid and dogmatic attitude about COVID-19 immunization, with no apparent basis to back up their misgivings; this suggests a lack of knowledge concerning COVID-19 and the vaccine.

A 32-year-old male participant who is also illiterate, stated that, *"I don't know much about this disease and doubt that this (COVID 19) Vaccine will cure it. Westerners created COVID-19 as a hypothesis of conspiracy".*

Because the respondents had strong personal beliefs about using home remedies, several individuals found it challenging to receive the COVID-19 vaccination. Using organic, chemical-free, whole food products was believed to help prevent COVID-19 and its detrimental consequences on health. For instance, there is a misconception that cleaning your nasal passages with saline solution is more advantageous than being vaccinated. One research participant, a 46-year-old illiterate male, said, *"I think that avoiding colds and flu by drinking ginger tea, drinking hot water, taking precautions, and getting treatment can help defeat Covid-19."*

The participants described their feelings towards the vaccination and the spread of COVID-19 as being apprehensive and perplexed because to the amount of contradicting and conflicting information throughout the entire epidemic.

Fear of long-term harmful consequences

One of the growing reasons for vaccine resistance was fear of unforeseen, long-term harmful consequences. Most of the men and women who took part in the research expressed concerns about possible side effects of the anticipated COVID-19 vaccinations. They talked about their own experiences as well as publicly reported stories that stressed the negative effects of vaccinations. Another participant, a 35-year-old male homeopathic doctor, said: *"What's the benefit of such vaccination) when the side effects are too much, it may deteriorate person health state, and he/she might die."*

"I'm not in favor of vaccination at all," stated a 40-year-old male Naswar (Tobacco) merchant who was illiterate, "because I lost my only son because of the response to the vaccine. "

Distrust in vaccine development and safety

Few research participants were adamant that the disease, not the treatment, was what killed people during the pandemic and not the immunization. They believed that no trustworthy vaccine could be developed in such a short period of time. COVID-19 vaccine can harm people's health as this has been developed in a very short period.

A 35-year-old male homeopathic doctor who was a participant said, *"Until now, no suitable vaccine has been developed." The development of vaccinations [against COVID-19] is a major focus worldwide. Although the Indian government claimed to have created a vaccine, vaccines are also responsible for numerous deaths in America. The vaccination is not accessible at this time"*.

Quality control and vaccine trustworthiness

Concerns regarding prospective quality control procedures and vaccine manufacture were voiced by certain society representatives. This covered the vaccination suppliers' trustworthiness. Participants

in the research have voiced their perplexity and worry about potentially devastating side effects. The rise of "fake news" in online forums and groups, according to those participants who said they would receive the immunization, would make their choice more challenging.

One participant, a 39-year-old female teacher, said, *"We [the community] are overwhelmed by the false information, and it's difficult to educate people who have suspicions about a vaccination. I really want to get the immunization, but I'm afraid people will reject me if I do"*.

Results showed that high levels of education and employment were related to vaccination acceptance, whereas research participants with low socioeconomic status and low levels of education showed a lack of potential knowledge about the COVID-19 vaccine and a resistance to vaccination. Authorities and healthcare professionals should work together to educate the people about the advantages of vaccination for health through the media. Additionally, research discovered that women were more resistant to vaccination than males, which runs counter to the findings of research done in developed nations²⁹. Low health literacy, unemployment, reliance on male family members for decision-making, immunization safety concerns, and religious restrictions may all be contributing factors.³⁰ This emphasizes the demand for a gender-focused intervention with cultural sensitivity that might debunk misconceptions and empower women to make choices about their own health and the welfare of their families.

Religious beliefs hindrance for vaccine acceptance

Religious convictions in the setting of Pakistani communities and disinformation on social media seem to be deeply ingrained and exacerbating COVID-19 vaccination resistance. According to research, individuals with little to no education were devout Muslims who thought vaccination was an attempt by the West to sway them away from their religious beliefs.³¹ This is consistent with what we found. There is no universally applicable answer to this problem; instead, we must develop a people-centered strategy by giving the needs and worries of individuals, families, and communities' top

priority. As a result, they will be more shielded against deadly illnesses and COVID-19 mortality.

In vaccine hesitancy studies, personal belief systems were a big factor. One area was linked to participants' religious beliefs. The vast majority of religious leaders, particularly those of Punjabi descent, were anti-vaccination. Some people said that getting vaccinated went against their religious convictions. The majority of these people lacked basic health knowledge and were females from low-income families. The great majority of participants were skeptical about the reliability of information sources, but others were adamant about faith/traditional healing practices. One female participant, a 35-year-old housewife, remarked, "Trust should be placed only in Allah; all medical professionals are dishonest."

The COVID-19 vaccination is intended to hurt Muslim

The locals' opinions about vaccines, according to the community members, were not positive. People had the opinion that the ingredients employed in preparation were against the fundamental principles of Islam. These ideas were especially linked to persons with less education.

For illustration a male chauffeur who was 52 years old said, "We hear about vaccinations and how they are made up of dead human bodies. Cells from aborted fetuses are used to create the coronavirus vaccine".

Another male shopkeeper who was 43 years old said, "It is believed that the Covid-19 vaccine will be provided to humans and that it will be useful in preventing infectious diseases. Due to the vaccine's pig and monkey DNA content, it is being used to purposefully damage Muslims' faith".

The allegations that the COVID-19 vaccine contains DNA or cells from aborted pigs have raised concerns among the Muslim and Christian populations owing to their respective religious convictions. According to reports, in response to these accusations, ministry of health reportedly paused the COVID-19 immunization program until they got a halal certification attesting to the vaccine's compatibility with Islamic law.³² Due to a similar fallacy that the measles and rubella vaccinations contained elements from pigs and were thus prohibited in Islam, vaccination adoption

plummeted.³³ Due to the controversy surrounding the COVID-19 vaccine's use of cells from aborted fetuses, Christians and Muslims may be less inclined to support it.³⁴ To refute these beliefs, communication materials must be created in collaboration with the relevant populations of interest, including religious and community leaders, relevant community groups, and individual participants. Traditional and religious community leaders can promote immunization by providing valuable information, such as vaccination session schedules and locations, during community announcements and after religious services.

Any 5G nano-chips are included in the COVID-19 vaccine to control humans

Unfortunately, a scam concerning the COVID-19 immunization was spreading throughout Pakistan. Subsequent claims made by a well-known political commentator and writer in Pakistan claimed that the virus was a gigantic hoax designed to attack Islamic nations, made to allow Jews to rule the world, and containing nano-chips implanted in people to gain control through 5G towers.³⁵

Some participants of the current study criticized the idea that developed governments want to install microchips just to control humanity. While others expressed their belief that there would be some authenticity in news

Some participants noted that "different COVID-19 vaccines are being produced by different companies" in different countries throughout the world, and that "all manufacturers cannot employ this kind of approach at the same time."

A community pharmacist stated that "if international authorities wanted to control mankind all over the world by implanting microchips in immunizations, they could have done so with other vaccines that every kid receives for protection against a variety of diseases. Because adults are more resistant to vaccination, children are simpler to implant a chip than adults."

Previous studies have indicated that persons who are stressed or fretful are more prone to trust implausible claims and spread medical misinformation.³⁶ Due to the rapid growth of social media, the propagation of rumors has lately been markedly accelerated. Participants in the study made it clear that they were confused by how they

would accept the COVID-19 vaccination; this pattern of behavior was especially obvious in marginalized groups, who lacked knowledge and had a significant tendency to trust false information.³⁷ It is accepted in particular that misreading of the COVID-19 immunizations by religious organizations constitute a hazard to human life.³⁸

Thus, rather than using religion as a justification for rejecting vaccinations, religious leaders and those closely associated with any religion must comprehend the significance of facts and employ an evangelical viewpoint to benefit mankind. Quacks, or unlicensed medical professionals, are also in charge of interpreting the data incorrectly and regularly offer treatment in communities. The necessity of vaccines and the effects of misconceptions on COVID make it imperative that informal health workers have the required training and information. They have the community's respect and backing. A complete citizen-specific strategy, which may be adjusted to many levels of society (e.g., individual, family, community), including religious leaders, is required to maintain or rebuild trust in the COVID-19 vaccination

Discussion

There hasn't been much research done on the precise connection between having experienced a traumatic event and getting vaccinated. The goal of this study is to assemble evidence about how post-traumatic stress disorder (PTSD) influences decision-making and what is usually referred to as conspiracies in cultural context. Following the COVID 19 Post Traumatic Event, the themes and conspiracies discussed in this study piece have only lately come to light. This study suggests that more research on the subject is required before making certain conclusions. The findings of this study suggest that traumatic experiences have an impact on whether or not people choose to get vaccinated, and that this impact may arise from social and cultural factors that are related to both the traumatic incident and the vaccination experience.

Two studies Champion,³⁹ and Peprah *et al.*,⁴⁰ found that experiencing a humanitarian crisis was associated with higher immunization against

HPV and cholera, respectively. Previous studies of Goodman & Goodpasture⁴¹ and Kang,⁴² found that experiencing a traumatic event was associated with lower vaccination. This illustrates that risk assessments may vary depending on the kind of trauma and vaccine in question, as well as other crucial elements that call for more research. Surprisingly, just two studies—the ones that focused at vaccination intention rather than uptake—found a connection between a stressful event and higher vaccine tolerance. Therefore, following a traumatic event, vaccination intention and behavior may alter. Although people may be eager to receive a vaccine, practical challenges may limit vaccine uptake.

The impact of cultural factors persisted after the aforementioned research's findings were extracted. Decisions regarding vaccination may be influenced by the impacts of traumatic events, which may be affected by cultural,⁴³ gender-based, and social factors.⁴⁴ In the context of vaccine hesitancy generally, the specific reliability, such as belief in vaccinations, the healthcare system, or qualified personnel, has been extensively investigated.⁴⁵ The impact of these traits in modifying the consequences of trauma and vaccination may be the focus of further study.

Uncertainty about vaccinations among the general public continued to be a problem. It was crucial to address the false narratives on social media platforms in order to boost trust in the COVID-19 vaccination.⁴⁶ The public becomes more dependent on the media during a stressful period of uncertainty like the COVID-19. According to Puri, *et al.*,⁴⁷ unrestrained, erroneous, prejudiced, and anti-vaccination propaganda was however regularly seen in the media, particularly on social media. According to Perry *et al.*, (2015),⁴⁸ this kind of information was both one of the main causes of and a contributor to public vaccination resistance. The research's conclusions imply that it is more difficult for public health professionals to educate and persuade the public about the benefits of vaccinations as a result of the extensive false information and conspiracy theories that are circulated on social media platforms. By publishing, airing, and disseminating accurate and scientific information regarding the COVID-19

vaccinations, the proper editorial gatekeeping of science communication can, in this regard, boost public faith in vaccines.

By educating the public about the COVID-19 vaccine's safety, vaccination reluctance can be reduced. Furthermore, it is asserted that raising public understanding of the advantages vaccines offer for society will help to reduce public resistance to vaccination.⁴⁹ It's interesting that this study's findings show how barriers to acquiring COVID-19 vaccinations (resistance) have a negative impact on the effectiveness of media PSAs and vaccination demand. Conspiracy theories are related to the COVID-19 vaccination rejection. This result is consistent with other research that indicated conspiracy beliefs affect people's decision to become immunized.⁵⁰ The main topics of this misinformation are the COVID-19 vaccine's ability to regulate the population and its unpleasant side effects.⁴⁶ According to previous research, the first step in dismissing vaccine-skeptics' concerns about the effectiveness of vaccinations is to have a civil conversation with them.⁵¹ These methods might encourage people to get vaccinated by making them less resistant to it. Importantly, research indicates that public service messages in the media, especially those that prioritize fear assessment over safety benefits, have an effect on people's willingness to receive the COVID-19 immunization. As a result, it could be able to use the media to allay the organizations that are suspicious of vaccines. Furthermore, information posted on social media sites may be modified to boost its credibility and support for vaccinations, particularly when assertions are backed up by reliable evidence rather than flimsy arguments.^{52,5}

Decision-makers now have more knowledge to address the problem of vaccination resistance thanks to these discoveries. The study provides crucial details on how to utilize communication resources strategically. Previous ideas suggested that the strategic solution to the problem might be implemented by giving the general public cues to take the necessary action once obvious benefits and impediments had been recognized. Although vaccination aversion has been noted as a barrier, the creation of vaccines has been recognized as a good procedure in the context of COVID-19. Thus, the study's findings offer

crucial strategic guidance on how to choose public service messages about fear for both traditional and digital media.⁵³

Limitations

Although this empirical study has added useful and significant material to the body of knowledge to address the issue of vaccine reluctance, it has a number of drawbacks. To increase the generalizability of the results, future research can undertake field surveys using more sophisticated sampling selection approaches. First off, the research's intended audience did not accurately reflect the general populace. The first and third waves of an ethnographic investigation were used as the basis for the current study, and only respondents who participated in both waves 1 and 3 were considered.

It is impossible to (a) compute the survey response rate, (b) establish confidence intervals for the results, or (c) know with certainty which subset of the population the survey respondents belong because convenience sampling was used in the study. Other message characteristics (such as message style and source trustworthiness) could not be strictly controlled, however caution and warnings regarding the COVID-19 vaccine were employed in this study to change vaccination awareness using public service communications. Future study should be able to more precisely quantify the impact of contextual quality by controlling for any confounding factors like prior exposure and researcher's characteristics. Last but not least, although though this study was carried out in Pakistan, it is logical to extrapolate its conclusions to situations in other nations.

Conclusion

The purpose of this study was to compile what is typically understood in a cultural setting as conspiracies and the effects of the post-traumatic period on judgment. The study's findings indicate that the decision to get vaccinated is influenced by the experience of traumatic events, and that this influence may be a result of social and cultural elements connected to both the traumatic event and the vaccination experience. When the data from the

previous study were retrieved, the cultural influences were still clearly present. The effects of traumatic experiences, which can be influenced by social and cultural factors as well as cultural norms, frequently have an impact on vaccination decisions.

Conspiracies to sway people's decisions to acquire vaccines are likely to emerge throughout the traumatizing era. This misinformation focuses heavily on the COVID-19 vaccine's capacity to control the population as well as its unfavorable side effects. The study's conclusions show that it is more challenging for public health professionals to inform and persuade the public about the advantages of vaccines due to the extensive false information and conspiracy theories circulated on social media platforms. By publishing, broadcasting, and disseminating correct and scientific information regarding COVID-19 vaccinations, trained editorial surveillance in science communication might improve public confidence in vaccines.

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Authors' contributions

The study investigates the cultural and social dimensions shaping vaccine acceptance in Pakistan during COVID-19. Sara Akram led the conceptual framework, managed fieldwork, data collection supervised and written first draft. focusing on cultural trauma, while Rehan Aftab conducted thematic qualitative data analysis. Qadar Bakhsh Baloch contextualized findings within Pakistan's socio-cultural framework, and Farid Ullah managed fieldwork and data collection. Wadi B. Alonazi contributed global perspectives on cultural trauma,

and Humaira Amin, Verdah Q. Baloch, Muhammad S. Alam refined the manuscript. This study provides valuable insights into vaccine hesitancy, highlighting the importance of culturally sensitive health strategies for pandemic management in Pakistan.

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