Socio-Cultural Determinants of Parental Refusal for Childhood Vaccination: A Semantic and Latent Thematic Analysis

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Incomplete vaccination coverage is hazardous for the upcoming generations of a country. Child immunization against various vaccine-preventable diseases is a focus all over the world. The vaccination schedule information is a vital component of vaccination coverage, and its failure leads to incomplete immunization among newborns. Education, employment, and urban facilities are also essential for the complete immunization of a child. There is a significant difference in vaccination coverage due to all these factors. The main objective of this study was to explore the reasons for incomplete vaccination coverage due to the factors mentioned earlier, like why the information gap is there and what makes uneducated parents vulnerable to incomplete immunization, and why the urban-rural disparity exists regarding complete vaccination coverage in Punjab, Pakistan. The researchers conducted in-depth interviews of the mothers having at least one child from 1-2 years of age to explore factors responsible for incomplete vaccination coverage. Insufficient vaccination coverage was related to perceived adverse effects, cultural settings, information gap, lifestyle, parental employment and occupation, the risk to the immune system, risk perception about the disease, perception of efficacy, and misconception about vaccination. In-depth interviews proved vital for exploring underlying reasons for incomplete vaccination coverage. The current study explicates the profound views of respondents on why they refuse vaccination for their children. There should be a rigorous focus on increasing awareness of vaccination.

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1. Introduction

The Expanded Program on Immunization (EPI) was introduced by the World Health Organization (WHO), having the objective of controlling six infant ailments: diphtheria, tuberculosis, tetanus, pertussis (whooping cough), measles, and polio 1974. In 1978, Pakistan initiated its EPI under the supervision of WHO (Tanzil et al., 2021). Presently, EPI at the national level intends to vaccinate children aged 0-23 months for eight vaccine-controllable ailments which embrace, in cumulating the ailments mentioned earlier, hepatitis B and Haemophilus influenza type b (Hib); introduced in 2002 and 2008, respectively (Haque et al., 2016).

Table 1: Schedule of EPI Childhood Vaccination in Pakistan

<table>
<thead>
<tr>
<th>Diseases</th>
<th>Causative-Agents</th>
<th>Vaccine Name</th>
<th>No. of Doses</th>
<th>Child Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis (TB)</td>
<td>Bacteria</td>
<td>BCG</td>
<td>1</td>
<td>Just after birth</td>
</tr>
</tbody>
</table>
| Poliomyelitis (Polio)         | Virus            | OPV                  | 4            | OPV0: soon after birth  
|                               |                  |                     |              | OPV1: 6 weeks      
|                               |                  |                     |              | OPV2: 10 weeks     
|                               |                  |                     |              | OPV3: 14 weeks     
|                               |                  | IPV                  | 1            | IPV-I: 14 weeks    
| Diphtheria                    | Bacteria         | Pentavalent vaccine  | 3            | Penta1: 6 weeks    
|                               |                  | (DTP + Hep-B+ Hib)   |              | Penta2: 10 weeks   
| Tetanus                       | Bacteria         |                      |              | Penta3: 14 weeks   
| Pertussis                     | Bacteria         |                      |              |                   
| Hepatitis B                   | Virus            |                      |              |                   
| Hib Pneumonia & Meningitis    | Bacteria         |                      |              |                   
| Measles                       | Virus            | Measles              | 2            | Measles1: 9 months 
|                               |                  |                      |              | Measles2: 15 months|
| Diarrhea due to Rotavirus     | Virus            | Rotavirus            | 2            | Rota 1: 6 weeks    
|                               |                  |                      |              | Rota 2: 10 weeks   |

Pakistan's EPI vaccination schedule Retrieved from “emro.who.int/pak/programmes/expanded-programme-on-immunization.”

Five (5) million newborns (a huge birth section of Pakistan) per annum have significant outcomes for vaccine distribution in an already constrained health structure. The Ministry of National Health Services, Regularization, and Coordination, with the collaboration of the World Health Organization (WHO), is taking necessary steps to eradicate vaccine-preventable diseases. After the 18th amendment in the constitution of the Islamic Republic of Pakistan, health has become a provincial subject. The Primary and Secondary Healthcare Department in Punjab is responsible for vaccinating newborns. This department has appointed vaccinators and lady health workers throughout Punjab to collect information regarding newborns and correspondingly provide requisite vaccination. Profound knowledge of present challenges, policy amendments, and rational decision-making is essential to achieving 90 percent vaccination coverage at the national level and 80 percent coverage at least in each district (Zaidi et al., 2014). This aspiring goal seems complicated for most developing countries for numerous reasons.
In developing countries, health services, including vaccination, are less likely available to people belonging to low-income strata as compared to their affluent neighbors/neighborhoods (Miton & Mercier, 2015). There is a discussion about the overall significance of parental learning, orientations, and service provision elements (counting collaboration with the populace expected to be assisted) as elements of immunization rates (MacDonald et al., 2018)). According to a few writers, parental (demand side) aspects, including information, awareness, orientations, qualification, and socio-economic status, are vital in defining vaccine coverage, either to claim or to accept the proposal of vaccinations (Attwell & NAVIN, 2019). Others highlight the part of the distribution of facilities (supply side); it incorporates the learning and orientations of workers, their collaboration with parents, and the accessibility of vaccination facilities (Ndwandwe et al., 2020). A Colombian study revealed that vaccination rates are influenced by the information of vaccinators in their reporting areas (Ozawa et al., 2021). The dissemination of information regarding the vaccination schedule and its importance for the future health of newborns among the parents is a vital component of the overall vaccination process to enhance vaccination coverage.

Ethnic discrepancies in immunization rates have been observed in America, such as racial and ethnic disparities in the treatment with the influenza vaccine (Webb et al., 2018). Vaccination acceptance is therefore measured as extremely customarily sensitive, affected by indigenous knowledge about infant ailments and family decisional courses (Chung et al., 2017). Whereas some scholars stress that immunization acceptance has a social basis in few Afro-American societies (Course et al., 2022), others regard fewer rates of immunization as cultural disparities (Sowe & Johansson, 2019) couple with few etiological deliberations about healable ailments are also defined as "cultural prejudice." A family's social and cultural aspects are essential in vaccination coverage for newborns. The people belonging to traditional families always stress the outcomes of past experiences concerning their future decisions for similar activities.

Although many studies reflect the significance of socio-economic, topographical, and cultural aspects in child immunization, attaining requisite immunization coverage is not just associated with parental abilities and orientations. According to academics; structure, health care system functioning, and facilities, together with the conduct of health workers in doing assigned tasks, establish vital essentials in immunization coverage: it recognized that the manner how vaccination tasks are arranged and facilities are provided (Zhang et al., 2019) along with parental and health operative communication, significantly affect the immunization coverage. Inappropriately, such facets do not constantly get attention from health staff or the organizers of immunization facilities (Noh et al., 2019).

The advantages to getting a child immunized are barely doubtful. So far, research has reflected that a substantial number of parents, typically associated with the socioeconomically underprivileged populace, combat child immunization in many developing countries (Sakai, 2018). The very cause for parents who do not allow their children to get vaccinated is the view that their children will not get infected with ailments like pertussis, polio, and measles. Additionally, the parents are worried about the after-effects of immunization (Carpiano et al., 2019). Previous research suggests that complete immunization is directly related to socio-economic status. People with high Socio-Economic Status (SES) have more chances of complete vaccination of their children than people with lower socio-economic status. Multiple factors of structure, culture and economic affairs play a role in standing Pakistan lower in the ranking of vaccination coverage than many regional countries. It is reflected according to data that only some studies (Khan & Aslam, 2017) have studied the factors of the non-utilization of child immunization in Pakistan. However, few exposed the aspects of consumption of
Several kinds of research have studied the determinants influencing vaccination trends among infants. Nevertheless, limited quantitative evidence was found on specific aspects, e.g., pedagogy, acquaintance, orientation, and practices of mothers regarding vaccination exposure (Bugvi et al., 2014). Furthermore, as far as the case of Pakistan is concerned, limited evidence of research is found that explains the relative influences of parental occupation on child immunization coverage. The vaccination schedule information is a vital component of vaccination coverage, and its failure leads to incomplete immunization among newborns. Education, employment, and urban facilities are also crucial for the complete immunization of a child. There is a significant difference in vaccination coverage due to all these factors. The main objective of this study was to explore the reasons for incomplete vaccination coverage due to the factors mentioned above, like why the information gap is there and what makes uneducated parents vulnerable to incomplete immunization, and why the urban-rural disparity exists regarding complete vaccination coverage (Khan & Aslam, 2017).

1.1 Research Question

What socio-cultural determinants of parental refusal to vaccinate their children in Punjab, Pakistan?

1.1.1 Material and Methods

In-depth interviews were conducted to explore the reasons behind the parental refusal of vaccination among their children in Punjab, Pakistan. In-depth interviews provide comprehensive contextual data on research issues as they are not rigid structures but repeatable and continuous (Babbie, 2010).

1.2 Study Participants

The study subjects were mothers aged 1-2 years whose children were incomplete vaccinated. This study included the representation of three main geographical areas of Punjab. So, the researcher interviewed purposively selected 45 mothers from the three central districts of Punjab, namely Lahore, Sahiwal, and Multan, located in North, Central, and South Punjab, respectively. These districts are also the divisional headquarters of their respective divisions and exclusively represent the socio-cultural settings of Punjab.

1.3 Procedure

Punjab Primary and Secondary Health department is primarily responsible for vaccinating newborns in Punjab. This department works in close liaison with the Ministry of National Health Services, Regularization and Coordination and manages the vaccination process either through Basic Health Units (BHUs), Tehsil Head Quarter Hospitals (THQs), or District Headquarter Hospitals (DHQs). The vaccination staff of these hospitals closely liaises with public and private maternity clinics and the union councils where the newborns are registered. The data regarding missed doses of vaccines were available with the records of vaccinators and lady health workers of each union council in Punjab. The mothers whose children missed one or more vaccine doses were approached, and permission was sought from their family heads. Finally, the mothers were permitted in-depth interviews to seek data on refusal reasons for their children’s incomplete vaccination.
1.4 Study setting and Interview guide

The in-depth interviews were conducted with an interview guide having open-ended questions. The researchers conducted interviews from June-July 2022 in three Districts of Punjab, Pakistan. The interview guide includes all possible aspects of the expected hurdles in vaccination. The researchers used the quantitively emerged parameters of incomplete vaccination in the available research literature as the baseline for constructing the interview guide. For instance, literature explored who is responsible for incomplete vaccination coverage due to the information gap. Some parents are unwilling to take information regarding the vaccination schedule, or the problem lies with the government agencies failing to disseminate information regarding the vaccination schedule. Similarly, the qualitative factors related to incomplete vaccination among the children of uneducated parents, unemployed parents, and rural parents were explored.

1.5 Analysis

After the collection of data, a thematic analysis was conducted. Thematic analysis is a procedure used to identify patterns or themes within qualitative data (Maguire & Delahunt, 2017). Clarke et al. (2015) elaborated that thematic analysis is a qualitative method that should be learned as 'it provides core skills that will be useful for conducting many other kinds of analyses. The main objective of thematic analysis is to identify themes, i.e., the essential and exciting patterns in the data. These themes explored the issue under study (Maguire & Delahunt, 2017).

Javadi & Zarea (2016)) identified two levels for thematic analysis: semantic and latent. The semantic theme represents the literal meanings of the data, while the latent level is associated with underlying ideologies responsible for the latent information in the data. At the same time, this study used semantic and latent thematic analysis techniques to obtain in-depth experiences of parental refusal of childhood vaccination.

2. Analysis and Findings

2.1 Profile of Respondents

All respondents were married females with at least one child in the last five years, and their children were not completely vaccinated. Out of ten respondents, the majority of respondents were not workers/employees and uneducated, and their husbands were also low educated or uneducated. Most respondents' life partners were traditional employees and did a job as manual workers. For respondents and their families, respondents belonged to a lower wealth index and peripheral residential areas.

2.2 Reasons for Incomplete Vaccination

In Pakistan, several factors affect incomplete childhood vaccination coverage in the context of parental refusal. The current study also shows that parents' decision-making process regarding childhood vaccination is influenced by factors such as their lifestyle, education level, occupation, distance to health services, availability of transportation, access to information, perception about vaccination, wealth index, and family type.

2.3 Parental Values and Attitudes toward Childhood Vaccination

The first theme analyzed from the data is "Parental Values and Attitudes toward Childhood Vaccination." The lifestyle affects either complete or incomplete childhood vaccination. After all, respondents perceive that healthy food is a source of healthy life and boosts the immune system against
infectious diseases. A large amount of food is beneficial because they are unaware of balanced food. According to their perception, children taking large amounts of food and looking bulky are healthy and unlikely to face more infectious diseases. Furthermore, the lifestyle theme of the data shows about the immune system that traditional foods comprise all nutritional ingredients necessary for children's good health. Therefore, according to respondents, such foods make their children's immune systems robust, and there is no need to worry about childhood vaccination. Respondents disclosed that another reason for avoiding childhood vaccination is to provide their children with a peaceful living environment by avoiding going out shopping or to a vaccination center with children in the first four to six months. Furthermore, they tended to avoid unnecessary traveling and preferred to give traditional medicine rather than modern medicine for common diseases, so these practices promote immunity of their children and no need for vaccination.

2.4 The Role of Parental Employment and Occupation in Childhood Vaccination

The second theme derived from collected data from interviews is “The Role of Parental Employment and Occupation in Childhood Vaccination.” This theme illustrates that mothers who work for earning out of the home are more conscious about their children's health and have the economic resource to avail themselves of health facilities for their children in the form of medicines and traveling facilities. This consciousness about health and better income shows how to complete vaccination for their children. The status of parental employment and the nature of jobs also affect the complete childhood vaccination. The children are incomplete vaccinated, whose parents are manual workers, whereas the children are utterly vaccinated with parents of professional workers. Professional workers often face easy work situations about time and may spare time during duty hours to vaccinate their children.

2.5 Lack of Awareness and Misperception of Childhood Vaccination

The third data theme is “Lack of Awareness and Misperception towards Childhood Vaccination.” Negative perception about the outcome of vaccination is very influential in the vaccination process. The majority of respondents perceive that vaccines have many serious side effects. For instance, vaccines may cause infertility, impotence, loss of libido, and cancer. Some people believe vaccination may cause an acute fever or disease, so the vaccine is not given to their children. The stereotypical thinking leads people to abandon the vaccination process either fully or partially. The misperception about the efficacy of vaccination is another problem leading to incomplete childhood vaccination. Most respondents who refuse childhood vaccination believe that vaccines are not the source of immunity; giving many viruses and bacteria at a time seems an extraordinary attack on their children's immunity instead of making a robust immune system. Another respondent said that, according to her, only one dose of vaccination is better than several doses to complete vaccination coverage because more than one dose of immunization puts an overburden on their children and depresses the immune system. Moreover, the respondents show their perception about the risk of infectious diseases that their children are not prone to contagious diseases due to not being likely to contract infectious diseases. The mothers of children who refuse childhood vaccination also perceive that vaccine-preventable diseases are not life-threatening and could be easily treated. Some mothers say such conditions could be treated easily by family practitioners, herbalists, and homeopathic doctors. So, this theme illustrates the reason for refusal of vaccination: vaccines have no beneficial effects on preventing diseases such as whooping cough, pertussis, and mumps. Respondents also worry that vaccines' efficacy is not always adequate; sometimes, effectiveness is compromised by weather conditions or human carelessness. Prevention of diseases by vaccines is not always 100%. Vaccines' advantages are temporary, whereas side effects are permanent.
2.6 The Role of Socio-Cultural Settings in Incomplete Vaccination

Another theme sought out in the data is "The Role of Socio-Cultural Settings in Incomplete Vaccination." One's cultural settings and social environment are crucial for childhood vaccination. The Pakistani society is a custom-bound society, mainly in rural areas. Respondents state that they are not interested in vaccination for their children because there are no in-family and cultural practices of childhood vaccination, even though they do not know the reason behind this family and cultural tradition. On the other hand, the respondents from urban areas do not believe in such cultural practices of their families, and they always follow the vaccination schedule strictly. Another cultural aspect of incomplete vaccination coverage is informal and traditional health caregivers for delivery. Mothers from far-flung rural areas who give birth to their children at private clinics or by informal caregivers are more prone to ignore childhood vaccination due to the unavailability of vaccines at personal health care setups. Moreover, the private clinics have no proper mechanism to provide information to their respective vaccination centers or Basic Health Units (BHUs). Another aspect of cultural bond families is that the decision-making power is usually enjoyed by grandparents of children rather than parents due to joint/extended family patterns, and parents cannot take the step of vaccination for their children without the elder's consent.

2.7 Lack of Information on the Lack of Vaccinations

"Lack of Information about Vaccination Schedule and Vaccination Center" is another theme shown by data. The information gap is also seen as a vital cause of incomplete vaccination of children. In many cases, no proper information system on behalf of the government to disseminate the vaccination schedule to the masses causes incomplete vaccination. In villages, the vaccination team uses mosque loudspeakers to announce their presence, but they are helpless during load-shedding. The majority of respondents point out that they do not know the vaccination center in their areas as well as the schedule of vaccination camps. The lack of information regarding vaccination centers, the program of vaccination camps, and vaccination contributes to incomplete vaccination because everybody has insufficient access to newspapers, televisions, and information sources. Information access is not only a source of knowing the vaccination schedule but also a profound source of awareness of the importance of childhood vaccination.

3. Discussion

The present study analyzed the factors which are significant in parental refusal of childhood vaccination. It also noticed that parental decision-making causes the delay or denial of vaccination. Current findings show that vaccination choice is based on several aspects, e.g., the parental lifestyle, views about the child's body and immune system, opinions about the risk of ailments, perception about after-effects of immunization, perception about vaccine usefulness, perception of efficacy, bad endure with vaccination, and parental surroundings (cultural settings). Moreover, current research shows that an in-depth interview is a beneficial qualitative research method that gives insights into incomplete vaccination (Damnjanović et al. 2018).

Parental lifestyle is a significant factor in vaccination. Few study participants said that a useful life affects the potential exposure to the infectious ailment (Wiley et al., 2020) and mentioned the said determinant. It shows that perceptions and beliefs about childhood vaccination coupled with general lifestyle are essential factors in parents' decision about vaccination refusal.
Further studies describe risk perception of side effects as another determinant (Reyna, 2012; Bond & Nolan, 2011) of parental refusal of childhood vaccination. In 2007, a comprehensive study of multiple kinds of research was conducted that linked risk perception and immunization (Brewer, 2007) to point out that risk perception is a significant aspect of health behavior. The present study explains that parental vaccination refusal is because of the side effects they had in their mind and the perception that vaccine-preventable ailments are not much acute and their kid is not highly vulnerable. Such views may show that vaccine-preventable ailments hazards are much more imperative than immunization hazards (Harmsen et al., 2013). It is then necessary for municipal health institutions to make awareness regarding the acuteness and vulnerability of vaccine-preventable ailments.

In addition, the disease’s apparent risk versus present immunization results (Aborode et al., 2021) reveals that parental concern about the disturbance of the resistant system, in the beginning, is not enough to develop a sound reaction to immunization. Presently, respondent parents have not acknowledged good information regarding the effects of vaccination on their children’s immune systems, and their apprehensions resultantly create vaccination refusal.

According to Repalust et al. (2017), parental vaccination refusal is because they trust in some spiritual healer who had doubts about the effectiveness of vaccination. This study also shows that the parents who visited spiritual leaders avoided their children’s vaccination. Furthermore, few parents stated that suffering an illness is positive as it leads to particular bodily and intellectual progress. Such perception appears compatible with the lifestyle and views of spiritual healers about vaccination (Harmsen et al., 2013). Likewise, another showed that spiritual healers’ followers (parents) denied getting Mumps, Measles, and Rubella (MMR) vaccination due to their perception that such ailments are essential for a child’s physical and mental growth. Such results might show that high parental inclination toward spiritual healers might cause them to be very censorious of infant immunization. Nevertheless, the impact of spiritual healers on parental choice of vaccination is not very obvious; thus, further study is required to get a clear picture (Harmsen et al., 2012).

As far as the social environment is concerned, the present research explores mixed results. An earlier study stated (McKee & Bohannon, 2016) that sometimes family and friends support parental refusal of vaccination when they discuss the issue. In contrast, some may not discuss it with anyone because of the apprehensions of society. Dubé et al. (2016) stated that the judgment of people around the parents highly affects their decision on vaccination coverage. Anand & Bärnighausen (2007) revealed in respective research that lower vaccination coverage is also because of unavailability/forgetting to reschedule an appointment with a health worker. This study also supports this factor as respondents reported that due to busy work schedules/workload, they failed/avoided taking their children to health workers to vaccinate them.

Other research showed that parentages required additional information regarding infant immunization (May 2005; Kennedy & Gust 2005). This research also reveals similar outcomes. Parents like and acknowledge more information about the vaccines’ significance, side effects, and components. Some respondents of the present study stated that they found it difficult to get reliable and valid information which affected their choice/decision about vaccination coverage.

Therefore, Public Health Institutes/ Ministry should provide detailed information regarding childhood vaccination. Furthermore, to make formal websites functional, social and electronic media
(online communicators) and vocal and dynamic anti-vaccination groups must be considered to spread accurate information on childhood vaccination and its coverage. Besides the threats of non-vaccination, the formal info must discuss vaccination exposure. It must be regarded that the authorized language should be reasonable, without extremes, as a powerful statement like there is no hazard involved in vaccination can absurdly make people suspicious or lead to greater risk (Betsch & Sachse, 2012).

This study is with both strengths and limitations. As mentioned earlier, an in-depth interview data collection method is its fundamental strength that enables insights on the subject. In addition, because of the prior consent of parents, they openly shared their experiences and perceptions about incomplete childhood vaccination coverage, and due to the surety of anonymity, they were free from the fear of being judged. That is why desirability bias is ruled out. Nevertheless, it is observed that a limitation might be that parents did not get the opportunity to respond to other parents' remarks than to focus group discussions, which may result in small conversations. Moreover, as qualitative research cannot generalize, so is the case with this study. A more detailed qualitative or quantitative study should be designed on the same subject to explore further the significant factors in the non-utilization of immunization coverage among children aged 0-23 months.

The response bias may be another limitation because the parents with a negative inclination towards childhood vaccination may be more interested in participating in this study. Regrettably, researchers do not possess the background knowledge of parents who did not respond to the study offer. Besides, this qualitative study offers a valuable understanding of the factors that affect the parental decision regarding incomplete vaccination coverage among children aged 1-2 years. However, this study with a large parental population is recommended to gain insight into the most significant determinants.

4. Conclusion

The current study explicates the profound views of respondents on why they refuse vaccination for their children. The study reveals that most respondents considered the information gap/insufficient access to information, lack of knowledge about the importance of vaccination, and the social standing (socio-economic position) of parents as the primary causes of incomplete vaccination of the children. Other studies also support this view as parental (demand side) aspects, including information, awareness, orientations, qualification, and socio-economic status, are vital in defining vaccine coverage, either to claim or to accept the proposal of vaccinations. Other critical factors to refuse childhood vaccination are parents’ perception regarding the vaccines’ side effects, self-conception about diseases, and suspiciousness regarding the efficacy of vaccines. Moreover, parents also perceive that vaccine-preventable infections are not acute and children are not highly vulnerable. This risk perception is another strong determinant for vaccination refusal described by further studies. The socio-Cultural setting, lack of parental decision-making power, and lifestyle are the frequent reasons for parental refusal of childhood vaccination coverage. The present findings unveil the parental feelings of ambivalence in decision-making regarding vaccination coverage for children. So, all the factors mentioned earlier (discussed in the present study) provide insights into the possible factors that affect the complete vaccination coverage among children of age 1-2 years in Punjab, Pakistan. Further study is required on how such findings can be generalized to the extent
References


