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# A descriptive study to assess the parents knowledge regarding immunization in selected villages of Tripura

**Gipsy Bhowal**
Shri Venkateshwara University, Department _Nursing, dash.zep1990@gmail.com
**Dr. Prof. Manjari Rana**
Shri Venkateswara School of Nursing, Shri Venkateswara University

**Abstract**

Childhood immunization represents one of the key public health interventions which help prevent vaccine-preventable diseases and avert unnecessary child morbidity and mortality. In addition to messages from health workers and formal health services, parents are increasingly receiving vaccine-related information via online channels, such as WhatsApp, Facebook, Instagram, YouTube, websites, blogs and mobile health applications. These platforms have the potential to help bring health information to people's understanding, remind them to take care of themselves, offer social support, and get them directly in touch with health services. They can also present to parents conflicting information, anecdotes and faulty information that can cause confusion, fear or inaction. This paper investigates the impact that the two provided thesis documents have on the perceptions, attitudes and decision-making of parents regarding vaccination of children 0-5 years old in selected villages in Tripura, India based on online information. The repeated influence themes identified from the literature in the source documents are: credibility of information sources, digital health literacy, social and emotional influence and accessibility and cultural relevance of content. Based on original study objectives, conducting a qualitative, exploratory study, the paper proposes a research framework that consists of two stages: first, to explore parents' perceptions of and attitudes to immunization information online, and second, to identify the perceived influence of online immunization information on immunization decision-making. This manuscript does not claim to deliver empirical results as none of the primary interview transcripts, nor a sample profile or findings of the fieldwork were surveyed from the supplied materials. Instead, it provides an interconnected synthesis from the source, a proposed methodological approach, and an analytical framework and implications for CHC. It contends that online platforms are not necessarily good and are not necessarily bad – it is a matter of their sources being reliable and whether parents can assess the information, the social contexts in which information spreads online, and the availability of trusted professional advice.

**Keywords:**
Childhood Immunization; Online Platforms; Parental Decision-Making; Vaccine Confidence; Digital Health Literacy; Vaccine Hesitancy; Tripura; Qualitative Research

## 1. Introduction

The first 5 years of life are a foundation for physical, cognitive, emotional and social development. This is a time when children are especially reliant on caregivers and community health systems for preventive services or care. Immunization is one of the most effective preventive measures as it promotes immune response to targeted infectious diseases and helps lower the spread of disease in communities. Indirect protection may also help people who cannot be vaccinated with specific vaccines for medical reasons if sufficient vaccination coverage levels are achieved.

The introduction gave a brief explanation about the definition of immunization, the benefits of it for children and India's Universal Immunization Programme (UIP) as part of its great public health initiative. It mentions how community level workers like Accredited Social Health Activists (ASHAs), community outreach and awareness creation programmes contribute to better access. Meanwhile, it chips in on ongoing challenges including community access disparities, vaccine cold-chain needs, vaccine misinformation and refusal. The document also includes historical and programme related coverage figures. These are kept down here because they are included as background data in the document provided, not as new and up to date estimates.

As web access and mobile communication has grown so has the information landscape around childhood vaccination. The vaccine schedules, side effects, eligibility, safety and availability information are available for parents to search 24/7. They can view explanatory videos, read webpages from health authority websites, ask questions in parenting groups and can compare how their own family deals with the issues and situations and how others live theirs. Online platforms in rural areas may be used to complement the information being provided by health workers at the frontline of service delivery, especially if a person has difficulty accessing health facilities or expert health advice.

The availability of the information on line does not ensure its reliability, however. The term or terms on the search result, forwarded messages, personal statements and short videos may also display claims, which can be inaccurate or lacking in evidence. As parents, it can be tricky to discern fact from opinion in a doctor's office when you are given conflicting information. The emotional aspect of content can also shape the perceived risk: an engaging personal narrative can be more compelling than a statistical explanation, although it may not be as accurate or dependable. Parents can therefore have increased confidence on online platforms, as well as voice concerns or delay immunization.

This paper will concentrate on the perception of parents (responsible for immunizing their children aged 0-5 years) about how websites influence their decisions. It has to follow the scope and goal provided in the provided introductory document, and must combine all of the literature included in the literature review document.

## 2. Problem Statement and Rationale

A major issue here is not just the use of online platforms by parents but what they make of the information they see online and what they do with it. The same website can spread official immunization protocols, scientific information, positive parent feedback, and dubious statements. Parents' reaction to this is likely to differ based on their educational level, their literacy in technology, prior experience with vaccination, trust in health workers, language preference, family/community mental health networks and the credibility of the source.

Results from the provided thesis are used for the selection of a study sample and methodological approach, which comprises one session interview at selected villages in Tripura. Its research statement is to learn the effect of online (internet) to their parents related to parents' immunization in those villages. The literature review's findings support the need of an investigation of a context-sensitive nature – rural parents are drawn to trusted, locally understood information, and unfamiliar medical terms or inaccurate information may lead to confusion.

A qualitative approach is suitable for helping to understand the process of parents' information-seeking experiences, what makes sources credible, how information on the internet relates to input from health workers and family members, and if information alters people's intention or reported behaviour. This can grasp some meaning and experience that is not accommodated by a simple indicator of Internet use.

## 3. Objectives of the Study

1. To explore parents' perceptions and attitudes towards immunization information found on online platforms.
2. To identify the perceived influence of online platforms on parents' decision-making regarding childhood immunization.

## 4. Review of Literature and Thematic Synthesis

### 4.1 Parental knowledge, attitudes and immunization practices

The first set of studies discussed in the literature review explore the knowledge, attitudes, and practices of mother and father, in a range of Indian environments and a few international ones. One common

thread in this series of studies is that people have general enthusiasm about vaccines but don't fully understand vaccination schedules, how long it brings benefits, or the side effects of vaccines or delays to obtaining them. The research done across the six different localities—Delhi, Jaipur, Assam, Maharashtra, Kerala and Punjab—described in the source document, report an association between parental education and knowledge/compliance. Antenatal counselling, contact with community health workers, reminder systems, ease of access to immunization services and socioeconomic factors also are important denominators as noted by some studies.

The literature also reminds us that while positive attitudes may be a necessary starting point, this doesn't mean on-time vaccinations are necessarily the result. For instance, in one study each summarised from the context of Jaipur and rural Punjab, the parents had positive attitudes, but not full recall of the immunization schedule and incomplete misconceptions. Fear of possible side effects, cultural concerns, practical problems, and lack of access to quality information are other issues identified in urban slums and tribal communities. The results indicate that informational conditions and service-related conditions both impact parents' decisions to immunize.

**4.2 Online information as a source of awareness and reassurance**

The second group of literature is related directly to online health information. The provided description of the review is in natural language: Parents who use official health sites, health-related professional sites, health-related online videos, blogs, social media pages and health mobile apps for health information regarding vaccines. The data collected and presented from Delhi, Vadodara, Kerala and Mumbai indicate that credible, accessible and well produced content has the potential to enhance awareness, confidence and understanding. How expert-led videos, interactive question and answer formats, reminders, and clear visual explanations can facilitate the involvement of parents in the information is also outlined during the review.

Social media can offer a lot more than just facts. Parent websites can provide encouragement, support, and/or information, from parents in similar situations. Peer descriptions, as reported in the summaries of the qualitative studies from the source, provided descriptions of peer narratives and supportive internet postings as influences that can provide normalization of vaccination and lessen these fears. The social dimension is relevant given that parents can analyse information on the technical content and also on who is providing it, the understanding of the message and whether parents have concerns which are acknowledged.

**4.3 Misinformation, contradictory messages and vaccine hesitancy**

Risks of unverified or vaccine critical content is also documented in the literature. Some of the research provided in the provided review was found to link exposure to anti-vaccine websites and emotionally charged posts, forwarded messages and online conspiracy stories, to increased perceived risk, distrust or delayed vaccination. A number of studies reviewed show that anecdotal claims can easily proliferate within WhatsApp groups, Facebook pages, blogs and video sharing platforms. Emotional testimonials can have a profound impact because they are sharing a lived experience that parents might easily relate to.

All social media content is not misleading, nor does all go viral and all parents react to it alike. Instead, the indicators outlined in the source material suggest a mosaic information dynamic. Error and correct statements about protecting health could be found on the same websites. There could also be accurate public health information and false claims on a single website. The ability of parents to check the authenticity/credibility of a resource, identify unsupported claims and ask questions of a competent health practitioner is therefore a major part.

**4.4 Digital health literacy, trust and local relevance**

Digital health literacy, as used here, is the "ability to locate, assess, and evaluate online health information to use it for purposes of health promotion and disease prevention. In a study in Mumbai, there is a positive correlation between digital health literacy and vaccine confidence, as described in the source review. It also highlights findings from the rural parts of Tripura, which suggested that, though parents may have smart phone yet they can find hard to understand the medical language. Short videos and local languages were reported as the preferred formats; it appears, therefore, that availability is not enough – information needs must be easily comprehendible and of value to the audience.

Trust is multi-layered. Parents can rely on a government health portal as it is authoritative, or rely on a pediatrician for their experience or knowledge or rely on a parent for their experience. There is a potential for a combination of these types of trust, and potential conflicts. If a parent comes across alarming content on the web they might ask an opinion from a relative or a member of the community before approaching a health worker. It is, therefore, important to understand how these sources are ranked and reconciled for the proposed study.

**4.5 Synthesis and research gap**

The provided reading materials suggest that parental decisions for immunizing children are mediated by knowledge, perceived benefits and barriers, education, social norms, access to immunization services, exposure to online information, and digital literacy and trust. Online platforms should be

considered part of a complex decision-making environment, rather than a standalone driver of vaccine uptake.

There is a context-specific gap in the understanding of how parents tell and understand about online immunization information in selected villages of Tripura in their context. A qualitative study of rural Tripura has been provided in a summarized form in the source material but the proposed thesis study is with parents' experiences in selected villages and the focus is on exploring perceptions and decision-making. A targeted qualitative study may help to provide local information on platform use, preferred language(s), credibility perceptions, interactions with front-line workers and users' feedback on the acceptability of online content, whether they accepted, questioned or ignored it.

**Table 1. Synthesis of major themes emerging from the supplied literature**

| **Theme** | **Pattern described in the source literature** | **Relevance to the Tripura inquiry** |
|---|---|---|
| Parental knowledge and attitudes | Positive attitudes may coexist with incomplete schedule knowledge and misconceptions. | Explore what parents know, what remains unclear and how online information affects understanding. |
| Credible online information | Official portals and expert-led content are described as sources of reassurance and awareness. | Identify which websites, pages, videos or apps parents trust and why. |
| Misinformation and fear | Unverified messages and emotionally charged stories are linked in reviewed studies with doubt and delay. | Explore examples of confusing or alarming content without assuming all exposure causes hesitancy. |
| Peer and family influence | Online groups and personal narratives can provide emotional support and shape social norms. | Examine how digital conversations interact with family and community advice. |
| Digital health literacy and language | Ability to interpret content and access to local-language explanations influence use. | Ask how parents assess reliability and whether language or terminology creates barriers. |

| | | |
|---|---|---|
| Health-worker guidance | Professional counselling can help parents interpret online claims and make informed decisions. | Explore whether parents discuss online information with ASHAs, nurses or doctors. |

## 5. Conceptual Framework

The proposed framework considers online influence to be a function of parental interpretation that exists within a greater societal and medical service ecosystem. There is no direct link between exposure and action, but instead there are several mediating variables between the exposure and the outcome, including, but not limited to, content appraisal, parental discussion, previous belief structures, and available health services.

| **Information environment** | **Interpretation and mediation** | **Possible decision-related outcomes** |
|---|---|---|
| Online sources: government/health websites, social media, videos, blogs, forums, apps and forwarded messages | Credibility, digital literacy, language, emotional response, peer/family influence, prior beliefs and health-worker advice | Greater awareness and confidence; clarification-seeking; continued acceptance; uncertainty; delay; refusal; or no perceived change |

Parent education level, the family's socioeconomic situation, cultural environment, and local services like the immunization services, also the internet, mobile phone access, and even the local community health services have a substantial role across the three stages of vaccination. However, the proposed framework only allows the formation of interviews and interpretation of findings. It does not establish the direction of causal relationships.

## 6. Proposed Research Methodology

### 6.1 Research design

The proposed design of the research is descriptive-exploratory, which fits the objective of exploring parents' views on, attitudes toward, experiences with and reasoning behind their decisions related to immunization. The document provided outlines the plan to use interviews to capture the parents' views, which are limited to one interview each. The finer details of the design, interview length and how the research will be conducted will need to be developed in line with the final approved research protocol.

### 6.2 Study setting and population

The proposed research will examine selected rural areas of Tripura. In those areas, participants will be biological parents or main caregivers with primary responsibility for immunization decisions for children five years and under. This criterion fits with the provided introductory material's definition of those roles. Once confirmed by the principal investigator, additional details regarding the names of the rural areas and their administrative blocks will be added, as will a description of those areas' demographics and features.

### 6.3 Sampling and participant selection

In the proposed field study, there is no mention of either the sample size or sampling technique. An appropriate method of participant selection could be purposive sampling. In purposive sampling, individuals can be selected for participation in the study because of their role as the primary caregiver for immunization of a child and because they have sought online immunization information. To promote participant variety, a consideration of demographic, environmental and access characteristics could be applied to include different parents with respect to age, educational background, location and frequency of use of different internet resources. To eliminate retrospectively invented, guessed, or even unconvincing justification of sample sizes, the proposed study would require explicit justification based on the purpose of the study and issues related to feasibility, while ensuring the completeness of information gathered.

### 6.4 Data collection

A semi-structured interview guide is suitable for gathering qualitative data in a way that allows participants to freely explain their individual experiences in their own words, rather than forcing them to use a pre-set structure of more restrictive, survey-style questions. Participants should be comfortable in the language used in the interviews. The researcher can audio-record the interviews provided participants agree and give informed consent. If a participant declines audio-recording, then detailed written notes should be taken. Unless the approved research protocol is formally changed, the restriction of one interview session per participant (as detailed in the supplied introduction) should be followed.

### 6.5 Suggested interview domains

- Knowledge and awareness of childhood immunizations and immunization history of the child by parents.
- Information sources for or about vaccines, and reason and frequency of seeking information.

- Different kinds of information such as benefits and side effects to health, schedules, safety and personal stories.
- How parents judge the credibility of a website, video, social-media post or forwarded message.
- Experiences of helpful, confusing, contradictory or alarming information from online.
- Co-construction of online content – role for family members, peers and community norms/healthcare staff.
- Whether the online information influenced parents to request information, reassure, alter a plan or take another action (e.g., delay a dose).
- Choices of information in the local language, photographs and pictures to explain things, reminders and immediate access to trained health professionals.

### 6.6 Data analysis

A thematic analysis of interview transcripts can follow a sequential set of steps to establish transparency in coding, group codes, create possible themes, compare those possible themes with original quotes, further define the themes and include a quotation to substantiate a theme. Analysis of interview transcripts can also provide opportunities to develop reflexive coding decisions. Discussion can clarify different viewpoints among researchers, such as coding inconsistencies, and highlight interpretations that differentiate between the participants' perspectives and researcher perspectives.

### 6.7 Ethical considerations

Participants should be given sufficient information about the study before the recruitment process begins. Participants should be told the study's objectives, their participation, confidentiality, and audio recording. Participants should also be told about their ability to withdraw at anytime for any reason with no negative consequences. Interviews should not put pressure on parents to provide information about the family or the medical situation that is private. The study should not provide medical advice to any particular person and should not answer questions about vaccines, the schedule or side effects. Those questions should be directed to medical professionals and official resources. A documented consent form should be signed by the participant or the participant's representative. Before recruitment begins, the ethics committee of the institution should approve the study. The identity of participants should be removed from reports and transcripts and digital versions should be stored in a secure location with access for only the research team.

## 7. Proposed Analytical Propositions

Because no primary data are included in the supplied documents, the following are sensitizing propositions for analysis rather than tested hypotheses or findings:

- Parents might refer to websites as useful 'reporting tools', especially where information is available in known language and format.
- Credibility may relate to who the source was and to their authority or experience; consistency must be maintained with the recommendations of health care providers; there must be clear evidence.
- To an observer, individual stories can be emotionally compelling, and can influence perceptions of risk, despite lacking a factual basis.
- Digital literacies could have ramifications on whether parents are able to differentiate between objective fact and unsubstantiated claims.
- Informational information programming may affect decisions indirectly via discussion with spouses, acquaintances, peers and community health workers.
- In response to the uncertainty, parents may want to seek professional advice to affirm their immunization choice instead of changing that decision.

**8. Discussion**

The available documents review literature that overall provides a balanced perspective on online platforms as a tool to improve adolescent immunization outcomes. Among their primary benefits are that they are accessible, rapid, have a broad reach, interactive and can link parents to trusted health information and support. Such features can be useful for parents who want to find out about immunization schedules, learn about common reactions to vaccines or get comfort prior to attending an immunization session. Positive attitudes can also be expressed through images and information that are clear, and digital reminders might assist parents to make these attitudes relevant towards their own actions.

Meanwhile, platforms are designed with information sharing capabilities that, at the same time, can lead to miscommunication or the dissemination of inflammatory content. A message forwarded from a family member or a familiar chat group group can feel believable because it seems like a real experience and a balanced description of the pros and cons of vaccination may not stick with as well. It poses an important communication issue for public-health programmes. It is important to have accurate information, but sometimes it may not be easy to see, understand or relate to parents' concerns. Literature shows that for the rural population of the state of Tripura, language, accessibility and interpretation are important elements. Medical information that is accurate, but delivered in "techie" language can hinder parental understanding and informed choices. Increased understanding of available immunizations and immunization opportunities, and viewings in local languages, may lead to increased understanding. But, digital communication should be used alongside a more traditional

interpersonal counselling and trustworthy immunization service, in order to avoid it being used as a substitute.

The qualitative investigation proposed could help elucidate the mechanisms of these processes in Parents' Day-to-day immunization decision making. Special care needs to be taken to look at how exposure to the Web is different from the impact it has on parents' decision making. A parent might experience a vaccine-critical post, but choose to not accept, and another might have concern but accepts and proceeds with the recommended vaccine schedule when given an ASHA or nurse's guidance. Likewise, a parent can look to official information on the internet to help ease their doubts and provide them with more confidence about vaccination. Consideration of these other forms of experiences will help to create a more complete picture than that of a binary of beneficial or harmful exposure of information online.

**9. Implications for Nursing and Public-Health Practice**

- Healthcare workers (e.g., CHWs and Nurses) can simply pose an open-ended question every time to the mother to determine if she has seen information online that has caused her immunization concerns.
- Concern should be taken into consideration with respect, benefits and known risks should be explained in simple words and parents should be referred to reliable sources.
- Health departments can create locally accessible digital resources, such as short videos, infographics, FAQS, scheduling reminders and more.
- The organisation, production date and means for professional clarification should be clearly stated in online materials.
- Community outreach might involve providing real-life digital health-literacy advice, such as verifying a claim critically by checking the date, consistency, evidence and source before sharing.
- Digital solutions must complement readily available immunization services as well as follow-up and interpersonal communication instead of being perceived as standalone.

**10. Limitations and Scope**

The manuscript is limited to use only the two thesis documents provided. It does not contain primary data, transcripts of interviews, information on the demographics of the selected villages, field observations or completed analysis from the chosen villages. Therefore, it does not provide any features of actual research themes, prevalence estimates, statistical association and causal effects that pertain to parents in Tripura. Several study summaries and bibliographic references are included in the literature

review for which publication information is not available, or may not be verified. The references should be verified against the original papers before sending it to the journal. The proposed research methodology also needs to be elaborated with regard to key details such as the villages that will be targeted, the sample size, how participants will be recruited, the language of each interview and obtaining ethical clearance.

The study is limited to the parents/copper/primary caregivers for the children aged 0-5 years in selected villages of Tripura and focuses primarily on their access to and use of the online platforms for immunizations. The study does not evaluate vaccine effectiveness, independently confirm what has been propagated in various online forums, nor quantitate population-level coverage of vaccines.

## 11. Conclusion

Parents' uptake of immunization choices has become woven into the information landscape of online platforms. Parents' uptake of immunization choices is part of a space for information – the online platforms itself. The evidence cited in the included resource documents suggest that such platforms are effective at raising awareness, confidence, and timely vaccination when relevant information is accurate, easily understood, credible, and/or linked to the guidance of a health professional. They can also infuse uncertainty and hesitation in the face of misinformation or emotionally charged information that is spread without proper context. The effect of online information is therefore moderated by healthcare workers' social connections, budget, language, social connections and trust, and digital health literacy.

Qualitative exploration could give local perspective on the experience, understanding and utilization of online immunization information in selected villages of Tripura. The best public-health strategy is not to try to discourage parents from looking online for information but to build their capacity to identify credible, culturally and linguistically appropriate information and advice. Internet communication, rather than replacing easily accessible immunization services and supportive counselling should complement these services.

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