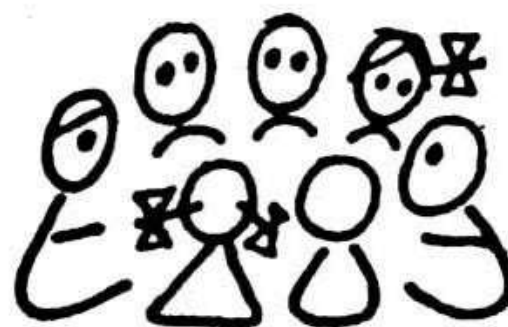
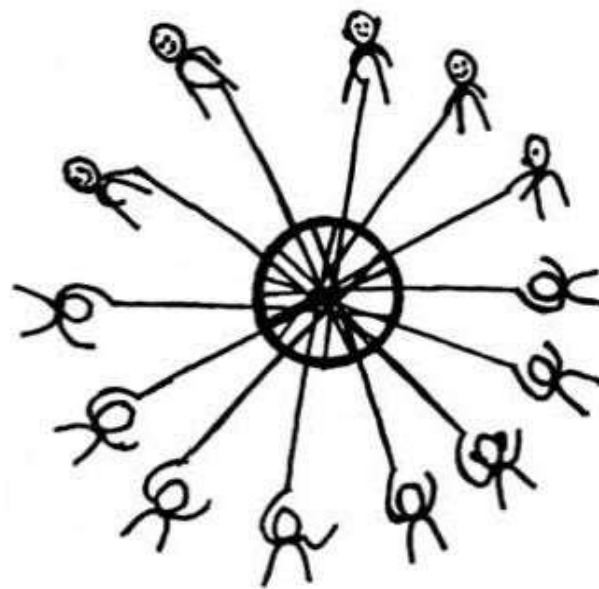
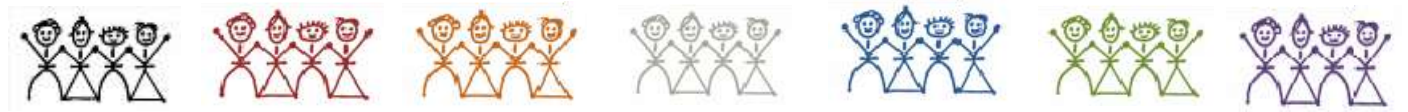


# Community Health Learning Programme

*A Report on the Community Health Learning Experience*

Priyobrat Rajkhowa



School of Public Health Equity and Action  
(SOPHEA)



Society for Community Health Awareness Research and Action

# **The impact of COVID-19 pandemic on parental health-seeking behaviour for childhood immunisation: Experience from local health facilities in Assam**

## **ABSTRACT**

### **Introduction**

Immunisation is one of the most remarkable public health interventions. Due to the low immunisation coverage, a substantial number of children dies due to vaccine-preventable infections (VPD) in India. Assamese children have consistently demonstrated low rates of routine childhood immunisations, which can increase the number of children's death. The COVID-19 pandemic has further had a significant impact on health care and disrupted health care services. Fear of infection, social distancing norms, and other infection control measures have all had a negative impact on health-seeking behaviour and regular visits to health care institutions. As a result, this study was conducted to look at some of the possible effects of the COVID-19 pandemic on routine immunisations and health-seeking behaviour in Assam.

### **Objectives**

The study's objectives were to understand the health-seeking behaviour of parents/guardians in immunising their child during this ongoing COVID-19 pandemic and to identify the felt needs of the parents and guardians concerning child routine immunisation during the ongoing COVID-19 pandemic.

### **Methods**

A qualitative study design with in-depth interviews was employed, and parents/guardians were invited to participate with consent. The in-depth interviews were tape-recorded, transcribed verbatim, and analysed using thematic analysis.

### **Findings**

Delay/low health-seeking behaviour related to the fear of the COVID-19 pandemic, visiting a health centre is more likely to contract the virus and face social stigma, afraid of being separated from own children if tested positive for COVID-19, lack of good health facility leading to the disruption of health services, the positive impact of routine childhood immunisation on adult COVID-19 vaccination, reduced anxiety and fear leads to a resurgence of health-seeking behaviour.

### **Conclusions**

This study assessed the enabling and constraining factors that affect access to health care and child immunisation in Assam. Stakeholders and government entities should carefully examine all factors affecting access to these services. As a result, efforts can be further tailored to promote public knowledge of the potential advantages of immunisation, reduce the risk of immunisation dropout, increase immunisation coverage in Assam, and lower child mortality.

**Keywords:** Children, COVID-19, Health seeking, Immunisation, Pandemic.

## **BACKGROUND**

Immunisation is one of the most important public health measures, having controlled several life-threatening infectious diseases and protecting millions more from illness. (1). India's immunisation coverage is 76.4 %, and there is significant regional heterogeneity in routine immunisation throughout the country's states (2,3). Due to the low immunisation coverage, about three-quarters of the 826,000 deaths in children aged 1 to 59 months were estimated to be due to vaccine-preventable infections such as diarrhoea, pertussis, measles, meningitis, and pneumonia (4). According to the National Family Health Survey 5 (NFHS-5) report, children in Assam, India's North-East region, have continually demonstrated poor rates for routine childhood immunisations, with 66.4 % (2,5). The COVID-19 pandemic has negatively influenced all aspects of life, including health services, which have been put on hold and has acted as an added determinant of low immunisation acceptancy (6–8). In Assam, one of the significant causes of vaccination dropout was a lack of information among parents or guardians (5). Because primary health care services, including immunisation, have been disrupted, women and children are at risk for vaccine-preventable diseases (VPDs) such as measles, rotavirus, and tetanus (9,10). Fear of infection, social distancing norms, and other infection control measures have all had a negative impact on health-seeking behaviour and regular visits to health care institutions (11,12). All other preventative health measures have been pushed to the side as the primary focus of public health has shifted to preparing for and containing the COVID-19 pandemic in the country. Over the same period, the number of fully immunised children declined (13). Any flare-up of VPDs will exacerbate the strain on already overburdened healthcare systems. Therefore, it is essential to understand parents'/guardians' felt needs and their health-seeking behaviour towards immunising their children during this ongoing COVID-19 pandemic. Understanding these factors will eventually help minimise the possible lacunas and barriers to immunisation coverage by implementing appropriate health interventions. Past epidemics have taught us about the indirect effects, which may be far more destructive to one's health. Therefore, this qualitative study is being undertaken to explore some of the potential impacts of the COVID-19 pandemic on routine immunisations in Assam.

### **Research question**

Do the disruptions in India's routine immunisation services due to the COVID-19 pandemic lead to a decrease in parental health-seeking behaviour for child immunisation in Assam?

### **AIM**

To understand the health-seeking behaviour of parents/guardians in immunising their child during this ongoing COVID-19 pandemic.

### **SPECIFIC OBJECTIVE**

To identify the felt needs of the parents and guardians in Assam concerning child routine immunisation during the ongoing COVID-19 pandemic.

## **LITERATURE REVIEW**

The COVID-19 pandemic has posed several unique challenges in vaccinations and immunisation programs and set the stage for many countries' potentially serious population health effects. Immunisation and other primary health care services have been disrupted, leaving the vulnerable group, i.e. children, at risk of vaccine-preventable infections (8). The WHO and UNICEF highlighted widespread interruptions in vaccination services in nations throughout the world, with an estimate of 80 million children under the age of one living in countries where routine immunisation services were disrupted and at risk of contracting a vaccine-preventable illness (14,15). Previous epidemics have shown that even short disruptions in routine immunisation services can result in secondary public health emergencies, such as outbreaks of vaccine-preventable illnesses, resulting in increased morbidity and death (16). In 2020, 23 million children missed out on basic immunisations due to routine immunisation services, which is 3.7 million higher than in 2019 (17). The Indian national immunisation program is one of the world's largest, reaching nearly 26 million children and 29 million pregnant women each year (18). The child immunisation coverage in India is below the desired level, 62% (19). Due to the ongoing pandemic, there is a halt in expanding immunisation services that may lead to further negative impacts on childhood immunisation coverage in India (20).

## **METHODS**

### **Study design**

A qualitative study design was used to explore the health-seeking behaviour and felt needs of parents/guardians in immunising their child during this ongoing COVID-19 pandemic. This study also highlighted the enabling and hindering factors in immunising children. In-depth telephonic interviews were conducted to capture the collective details of the participants' experiences on immunising their children and receiving their health services during the COVID-19 pandemic.

### **Study setting**

This study enrolled parents or guardians with at least one child under five years of age. Using snowballing and purposive sampling techniques, we selected the initial possible interviewees who attended a local health and wellness centre or Anganwadi Centre in Assam from 15<sup>th</sup> January to 20<sup>th</sup> February 2022. As this study followed snowballing and purposive sampling, each participant recruited for the study was asked to refer other potential participants; therefore, this study was also able to capture the viewpoints of parents/guardians in the neighbouring districts from the initial district, Jorhat, Sivasagar and Dibrugarh. The inclusion criteria for study participants was (i) Patients/guardians with at least one child under the age of five, (ii) Participants who can speak either English or Assamese and (iii) Residents of Assam. The current study reached the saturation principle after the 16<sup>th</sup> in-depth interview when no new developing themes were identified. Each in-depth interview lasted 6-9 minutes on average. Two community health officers helped out in identifying and recruiting the study participants.

### **Study participants**

All parents/guardians who participated in the study were purposively selected to ensure age and educational background variation. We included participants who were fluent either in the Assamese language or English. In this study, we invited 30 parents/guardians of children to participate, and 16 of them voluntarily agreed to participate in the study. All the in-depth interviews were conducted from 15<sup>th</sup> January to 20<sup>th</sup> February 2022. The women were in the age range 24–50 years. Most of them were homemakers. All the participants spoke Assamese.

### **Data collection**

Prior to conducting an in-depth telephonic interview, we prepared a list of the potential candidates based on a Health and wellness centre record in Assam. We drafted an interview guide containing

open-ended questions followed by probing questions based on subjects drawn from relevant literature to conduct the in-depth interview, which was based on topics drawn from relevant literature. The topics explored the participants' thoughts about the need for routine immunisation services during the first wave of the COVID-19 pandemic, their health-seeking behaviour, and the barriers or facilitators for immunisation. The participants were informed about the study's objectives and technique and the benefits and drawbacks of their involvement during the conduct of the in-depth telephonic interview. Following that, they confirmed their verbal consent to participate. The in-depth telephonic interview lasted from 6 minutes to 9 minutes. Interviews continued to be held until no further information was obtained, and the first author perceived that data saturation had been achieved. The conversations were tape-recorded when the participants agreed, transcribed verbatim and translated from Assamese to English.

### **Data analysis**

The collected data were transcribed verbatim and translated from Assamese to English. The transcripts were read numerous times before being thoroughly examined. Because this was a more exploratory study, thematic analysis was adopted for data analysis (21). Initially, codes and themes were manually prepared by segmenting the transcripts and categorising the codes identified during the in-depth interview. Following that, the data was reorganised to fit the emerging themes. The third phase was to combine codes with more sub-themes and themes, and the relationship between the created codes, sub-themes, and themes was discovered using an inductive methodology. To ensure that no relevant or crucial data was missed, the datasets were re-read to check that the created themes matched the original datasets.

### **Ethical considerations**

An ethical committee approval was obtained from the SOCHARA Institutional Scientific and Ethics Committee (SISEC). Prior to data collection, verbal informed consent was obtained from the recruited participants, and the women were guaranteed their right to withdraw at any moment during the study. Participants were invited to share only the information with which they were comfortable. The participants' confidentiality was protected by conducting each in-depth interview without asking for the participants' names, which would otherwise have been their vital identifying data. The participants were informed and consented that the in-depth interview was taped. They were told that the recordings would only be used for research reasons, and those individual participants would not be identifiable. There was no remuneration/incentives for the participants to minimise compulsion and bias. We asked all the participants about their willingness to participate in this study. After receiving consent and confirming their willingness to participate, the interviews were conducted. Only after receiving the informed consent for audio recording was utilised for preparing transcripts of the minutes of the in-depth interview was noted to prepare the study transcripts.

## **RESULTS**

A total of 16 interviews with 14 parents and 2 guardians were conducted, and their gender, occupation, ethnicity and level of education are presented in [Table 1](#). Four primary themes emerged from the in-depth interviews. The first theme was individual dread of the COVID-19 pandemic, which influenced parents' and guardians' decisions to postpone seeking medical help and utilising health services. There were two sub-themes that arose, and each sub-theme is discussed in detail, with actual comments from survey participants. The second concern was the lack of good health facilities, which resulted in the disruption of health services, and it emphasised the need to strengthen the health system for all health services to run smoothly. Participants in the third theme discussed how routine immunisation positively impacts the adult on accepting the COVID-19 vaccine. Finally, due to reduced worry and dread, individuals expressed their switch to health-seeking in the fourth theme.

Code	Gender	Age	Occupation	Education
SP1	F	24	Homemaker	Secondary
SP2	F	31	Self-employed	Secondary
SP3	F	26	Homemaker	Secondary
SP4	F	29	Public sector job	Graduate and above
SP5	F	24	Homemaker	Secondary
SP6	F	25	Homemaker	Secondary
SP7	M	36	Public sector job	Graduate and above
SP8	F	25	Homemaker	Secondary
SP9	F	27	Private job	Graduate
SP10	F	50	Homemaker	Primary
SP11	F	30	Homemaker	Secondary
SP12	F	30	Self-employed	Graduate
SP13	F	28	Homemaker	Secondary
SP14	F	26	Homemaker	Secondary
SP15	F	55	Homemaker	Primary
SP16	M	50	Farmer	Secondary

**Theme 1:** Delay/low health-seeking behaviour related to the fear of the COVID-19 pandemic

The study participants' delays in seeking health services generated two sub-themes: (a) visiting a health centre is more likely to contract the virus and face social stigma, and (b) afraid of being separated from your family if tested positive for COVID-19.

(a) Visiting a health centre is more likely to contract the virus and face social stigma

Participants in the study expressed concern about being exposed to the virus because they were unsure how their children would maintain social distancing and follow the COVID-19 protocol. The majority of research participants said they had to go a considerable distance to get to the health centre. Participants stated that accessing a health facility would subject them to societal discrimination and that visiting a health institution would necessitate the COVID-19 test. It has also been noted that if COVID-19 severity worsens, there is no treatment for COVID-19. As a result, the participants believe it is preferable to use home cures rather than putting themselves in the epicentre of COVID-19.

*".... brother had COVID-19, despite our efforts, we could not save him...."-SP4*

*"We had spent a lot of money and had to ask for donations; COVID-19 is dangerous"*

*".... always had paracetamol at home...."-SP12*

*".... stopped to leave the house.... scared and concerned for my child, used to run only with whatever food was available...."-SP13*

*".... family members had a fever, and we did not test for COVID-19 as we were scared...."-SP10*

*"I don't want my neighbours to see me going to the hospital: they will not talk to me"-SP1 & SP5*

*".... careful about our children, as it was a high risk to go for health facility...."-SP9*

(b) Afraid of being separated from own family if tested positive for COVID-19

Delays related to fear of getting tested for the COVID-19 infection were expressed in the in-depth interviews. Most of the participants (mothers) in the study stated that a positive COVID-19 test



result would prevent them from spending time with their children. This has been mentioned more frequently by women whose families cannot live with them due to workplace differences.

*"If I become positive in the covid-19 test, then who will take care of my child?"- SP4*

#### **Theme 2:** Lack of good health facility led to the disruption of health services

Even in the local health institution, the study participants expressed the need for adequate healthcare workers. Participants discussed how health priorities have shifted from routine health services such as immunisation, antenatal care and other health services toward managing the COVID19 pandemic. As a result, there is a severe shortage of healthcare personnel in the health centre. According to study participants, healthcare staff, particularly Asha and grassroots workers, were overworked, yet they still managed to help them whenever they needed it. Despite the hurdles in disruption of the health services, the participants still acknowledged the health system for prioritising the interventions to stop the COVID-19 pandemic.

*"Asha forgot to give the vaccine (Routine child immunisation)"-SP5*

*".... very limited staff and they were swamped during the first lockdown"-SP12*

*".... limited health staff, my daughter, had to miss multiple Wednesday vaccine"- SP13*

*"Things were not available on time"-SP7*

#### **Theme 3:** Positive impact of routine childhood immunisation on adult COVID-19 vaccination

All of the study participants were in favour of the COVID-19 vaccination. Participants talked about how important immunisation is and how their childhood immunisation enabled their acceptance towards the COVID-19 vaccine. Participants also expressed their willingness to vaccinate their children if given. Participants were so anxious about protecting their child that they took the COVID-19 vaccine to protect their child from COVID-19.

*"Our family made the COVID vaccine a priority in order to keep our children healthy and prevent from passing the sickness on to our children"-SP7*

*"My parents vaccinated me during my childhood, and they are very important. Therefore, I vaccinated my son and also received both the doses of COVID-19 vaccine"-SP3*

*"Me and my husband took the COVID-19 vaccine so that we don't transmit it to our child"-SP8*

#### **Theme 4:** Reduced anxiety and fear leads to a resurgence of health-seeking behaviour.

The study participants expressed how their fear, anxiety and concerns towards COVID-19 is restoring to normalcy from the initial days of COVID-19 to now. The need for adequate healthcare workers was expressed by majority of the participants. Participants discussed how health priorities have shifted from routine health services such as immunisation, antenatal care and other health services and toward managing the COVID19 pandemic. They indicated that healthcare practitioners are now paying equal weight to all health concerns, not just COVID-19. This was attributed to the ability to have access to a health institution and the restoration of immunisation services.

*"Will have to learn to how to walk along with COVID-19 while saving ourselves, we will have to do the necessary work"-SP4*

*"It took a long time to restore the services, but at least we are getting the vaccine now"-SP14*

## DISCUSSIONS

In the case of COVID-19, pandemic management became a high priority in order to prevent COVID-19 infection from spreading. The purpose of this study was to evaluate parental/guardian health-seeking behaviour for child immunisation and health-seeking behaviour during the early stages of the COVID-19 pandemic by looking at participants from local health facility in Assam. This study shows how the priority of obtaining medical help shifted throughout COVID-19's initial countrywide lockdown days and afterward. This study examines how fear, social process, and practical issues influence parents' and guardians' health-seeking behaviour for their children and for themselves (Figure 1).

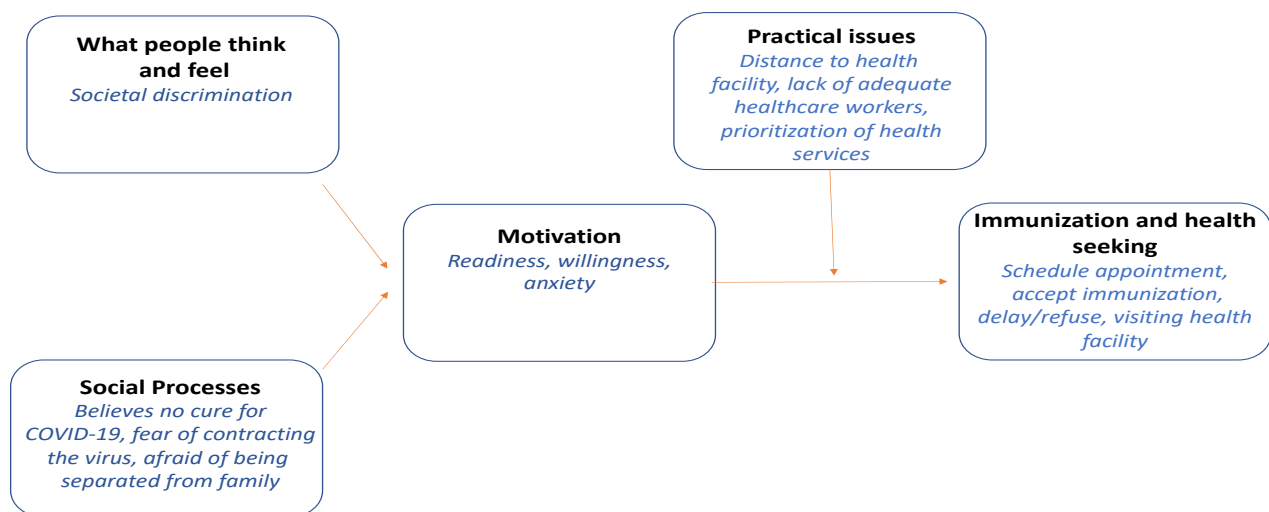


Figure 1: Determinants of child immunization and health seeking behavior

The participants were left in a situation where they delayed seeking medical treatment owing to their concern of a COVID-19 pandemic when the lockdown was deployed unexpectedly. Most parents and guardians prefer not to seek medical help because they are terrified of catching COVID-19. However, as immunisation services and other health services are restored, health-seeking behaviour has also been restored. In India, the influence of COVID-19 has resulted in a decline in health-seeking behaviour, according to a study. A study also highlights the decrease in health-seeking behaviour due to the impact of COVID-19 in India (22).

Participants said that their personal experiences with COVID-19 pandemic-affected family members and acquaintances significantly impacted their desire to visit health institutions. Many parents and guardians were hesitant to seek medical attention for their children and themselves because they believed the health centre was the source of the ailment. Fear of contracting the virus on the route to the health facility was one of the reasons given by study participants as a contributing cause to the delays. As a result, they choose to isolate themselves from others. They also had concerns about their children's ability to maintain social distance and adhere to the COVID-19 protocol. A study also underlines the effects of isolation and the level of fear of getting Covid-19, which is similar to our findings (23). Delays in the provision of adequate access to health care were limited during the first national lockdown, as visiting a health facility would necessitate the COVID-19 test. The fear of the COVID-19 test stems from the fact that the results would hinder moms from caring for their children since they are the only single person caring for their children, as the majority of women stated that their spouse is working in a faraway city. The anxiety of undertaking the COVID-19 test was also underlined in a study conducted in Eastern India (24).



During the pandemic, it was stated that healthcare staff were overworked as a result of the extensive training on how to manage the COVID-19 pandemic. Long queues formed at health facilities as a result of the severe shortage. As a result, individuals reported a delay in receiving health services for their children, such as routine child immunisation. A study also points to the strain caused by a high workload caused by a shortage of healthcare workers, similar to our study findings (25). Participants stressed the importance of better health facilities, even in remote areas, and a greater health workforce for better performance. They also stated that the deflection of their anxiety and panic caused by COVID-19 resulted in a return of health-seeking behaviour for routine childhood immunisation and favourable perception of health beliefs.

## **RECOMMENDATIONS**

According to our model, fear, societal discrimination, distance to the health facility, lack of health at the grassroots level, and prioritising health services all negatively impacted parents' and guardians' health-seeking behaviour for their children and themselves (figure 1). Because the majority of the emphasised problems were psychological, during this pandemic, a positive psychological intervention should have been targeted to increase immunisation services and improve health-seeking behaviour. A comparable set of positive psychological interventions can be modified to avoid similar pandemic management in the future. However, because of the factors affecting diverse cultures, geographical areas, socioeconomic levels, and so on, these types of interventions cannot be pre-drafted and implemented on a big scale. As the participants also highlighted concerns about healthcare affordability, accessibility, awareness, and availability, any imbalance in one of these factors is enough to cause a tight spot in the healthcare delivery system. As a result, it is suggested that when constructing a plan for dealing with comparable obstacles, the framework given by Banerji D. be used to encompass all components of SEPCE and handle these issues (26).

## **CONCLUSIONS**

This study provides a comprehensive look at enabling and limiting factors on accessing health care services and child immunisation in Assam. Fear of contracting COVID-19 was a substantial barrier to health-seeking behaviour in this study. Other factors, such as disrupted health services, the limited number of available healthcare staff, the need for staying away from family, the fear of getting the virus in health facilities, and the attitude of healthcare professionals during the epidemic, all contributed to the delay in seeking medical help. As this study highlighted a tight spot in the healthcare delivery system due to an imbalance in affordability, accessibility, awareness, and availability, the incapacitated healthcare system has been reflected through this study. In this regard, it is necessary to strengthen the health system in order to make healthcare more affordable, accessible, and available, as well as to raise public awareness about the importance of seeking medical help during a pandemic in order to avoid obliterating the gains made in reducing poor health-seeking behaviour among beneficiaries, particularly in resource-limited settings. The stakeholders and government entities should carefully examine all the factors impacting accessing these services. Once the issues related to the delivery of the health system are addressed, there would be another bottom down approach required to motivate the target population by disseminating awareness programs. Therefore, strategies should be tailored by adopting both bottom down as well as a top-down approach to raise public awareness of the potential benefits, lower the risks of immunisation dropout, increase immunisation coverage in Assam and reduce child mortality.

## ANNEXURES

### 1. SISEC approval letter



ಸಮುದಾಯ ಆರೋಗ್ಯ ಜಾಗೃತಿ, ಸಂಶೋಧನೆ ಮತ್ತು ಕ್ರಿಯಾ ಸಂಸ್ಥೆ

**Society for Community Health Awareness, Research and Action - SOCHARA**

Registered under the Karnataka Societies Registration Act 17 of 1960, S.No. 44/91-92.

21<sup>st</sup> December 2021

### To Whomsoever it May Concern

#### Scientific and Ethical Clearance

The SOCHARA Institutional Scientific and Ethics Committee (SISEC) has reviewed all the necessary documents submitted to SISEC for clearance on scientific and ethical aspects of the research proposal titled **“Impact of COVID-19 on parental health-seeking behaviour specifically for routine child immunization in Assam.”** by Priyobrat Rajkhowa, CHLP 2021 fellow. The SISEC found them satisfactory and hereby a provisional approval to carry out the study as planned is issued. Reporting to SISEC on the progress needs to be done at regular intervals and any adverse effect happening during the study should be intimated immediately.

Dr Arvind Kasthuri  
Chairperson- SISEC

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[www.sochara.org](http://www.sochara.org)

## 2. Participant Information Sheet (PIS) for Telephonic Interview

Hello sir /ma'am, Namaskar. Are you (name)?

I am calling from SOCHARA, Bangalore.

I'm a CHLP fellow at SOCHARA. My name is Priyobrat Rajkhowa.

I have got your phone number from X-Health center/Anganwadi center/ (Person name)

We are conducting a study to ask and find out the understanding of health-seeking behaviour of parents/guardians in immunising their child during this ongoing COVID-19 pandemic. We will be asking you questions about the access to immunisation of your child during the Lockdown period. It will require about 10-15 minutes in a single phone call for completing the study. Participation in this study is voluntary, and you may refuse participation without giving any reasons for your decision. Any information, including your name, address, test results, will be kept confidential and reviewed only by the authorised personnel. Kindly provide permission for the audio recording of the telephonic interview and for its use by the research team/authorised personnel for extracting the statements and analysis for research and publication purposes. I would be grateful if you could tell me the date and time when we can call, according to your convenience, to conduct the interview.

If you want the details of the study to be sent to you by surface mail/message/WhatsApp to decide regarding participation, I shall gladly send the same to you.

If you have any questions about this form or any study related issue, you may also contact the following person

Name: Janelle de Sa Fernandes

Mobile No.: +91-8884559387

If you have any queries regarding your rights as a research participant, you may contact the Member of the SOCHARA, Bangalore at: [chc@sochara.org](mailto:chc@sochara.org)

### Call log record

(To be incorporated into the proforma of the project)

Coding Sheet for Name and Telephone Number

Serial No.	Participant code (First 2 and last 2 numbers of the phone number)	Call Date	Call time	Call duration

(to be filed in a separate document)

(Should not be included in the proforma)

Serial No.	Participant's name	Telephone No. (to be destroyed once data collection is done / closure report submitted to IEC)

### **3. INFORMED CONSENT FORM**

Project title: *The impact of COVID-19 pandemic on parental health-seeking for childhood immunisation: Experience from local health facilities in Assam*

I confirm I have read the Participant Information Sheet for the above study and its contents were explained and I have had the opportunity to ask questions and received satisfactory answers.

I understand that my participation in the study is voluntary and that I have the right to withdraw at any time without giving any reason, without my medical care or legal rights being affected.

I agree to take part in the above study. I confirm that I have received a copy of the Participant Information Sheet along with this signed and dated informed consent form.

Name of the Research Participant:

Age of the Research Participant:

Address of the Research Participant:

Occupation:

Annual Income of the Participant:  
(Indicate so if not ready to disclose)

Name & address of the nominee(s) and his relation to the Participant:

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\_\_\_\_\_  
Signature of the research subject

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name & Signature of the witness

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name & Signature of the person explaining the consent

\_\_\_\_\_  
Date

#### 4. Photographs



## REFERENCES

1. Unicef. World Immunization Week 2018 [Internet]. [cited 2022 Feb 23]. Available from: <https://www.unicef.org/world-immunization-week-2018>
2. International Institute for Population sciences. National Family Health Survey - 5 [Internet]. 2020. Available from: [http://rchiips.org/nfhs/factsheet\\_NFHS-5.shtml](http://rchiips.org/nfhs/factsheet_NFHS-5.shtml)
3. Khan J, Shil A, Prakash R. Exploring the spatial heterogeneity in different doses of vaccination coverage in India. *PLoS One* [Internet]. 2018 Nov 28;13(11):e0207209. Available from: <https://doi.org/10.1371/journal.pone.0207209>
4. Black RE, Cousens S, Johnson HL, Lawn JE, Rudan I, Bassani DG, et al. Global, regional, and national causes of child mortality in 2008: a systematic analysis. *Lancet* (London, England). 2010 Jun;375(9730):1969–87.
5. Phukan RK, Barman MP, Mahanta J. Factors associated with immunisation coverage of children in Assam, India: over the first year of life. *J Trop Pediatr*. 2009 Aug;55(4):249–52.
6. Raman R, Rajalakshmi R, Surya J, Ramakrishnan R, Sivaprasad S, Conroy D, et al. Impact on health and provision of healthcare services during the COVID-19 lockdown in India: a multicentre cross-sectional study. *BMJ Open*. 2021 Jan;11(1):e043590.
7. Shet A, Carr K, Danovaro-Holliday MC, Sodha S V, Prosperi C, Wunderlich J, et al. Impact of the SARS-CoV-2 pandemic on routine immunisation services: evidence of disruption and recovery from 170 countries and territories. *Lancet Glob Heal*. 2022 Feb;10(2):e186–94.
8. Kasi SG, Dhir SK, Verma S, Pemde HK, Balasubramanian S, Agarwalla S, et al. Immunisation During the COVID-19 Pandemic: Recommendations From Indian Academy of Pediatrics Advisory Committee on Vaccines and Immunisation Practices. *Indian Pediatr*. 2020 Dec;57(12):1147–52.
9. Jain R, Chopra A, Falézan C, Patel M, Dupas P. COVID-19 related immunisation disruptions in Rajasthan, India: A retrospective observational study. *Vaccine* [Internet]. 2021;39(31):4343–50. Available from: <https://www.sciencedirect.com/science/article/pii/S0264410X21007581>
10. Vyas S, Sharma N, Archisman, Roy P, Kumar R. Repercussions of lockdown on primary health care in India during COVID 19. *J Fam Med Prim Care* [Internet]. 2021;10(7). Available from: [https://journals.lww.com/jfmpc/Fulltext/2021/10070/Repercussions\\_of\\_lockdown\\_on\\_primary\\_health\\_care.2.aspx](https://journals.lww.com/jfmpc/Fulltext/2021/10070/Repercussions_of_lockdown_on_primary_health_care.2.aspx)
11. Eyeberu A, Mengistu DA, Negash B, Alemu A, Abate D, Raru TB, et al. Community risk perception and health-seeking behavior in the era of COVID-19 among adult residents of Harari regional state, eastern Ethiopia. *SAGE Open Med* [Internet]. 2021 Jan 1;9:20503121211036132. Available from: <https://doi.org/10.1177/20503121211036132>
12. Saah FI, Amu H, Seidu A-A, Bain LE. Health knowledge and care seeking behaviour in resource-limited settings amidst the COVID-19 pandemic: A qualitative study in Ghana. *PLoS One* [Internet]. 2021 May 5;16(5):e0250940. Available from: <https://doi.org/10.1371/journal.pone.0250940>
13. WHO and UNICEF warn of a decline in vaccinations during COVID-19 [Internet]. [cited 2021 Dec 2]. Available from: <https://www.who.int/news/item/15-07-2020-who-and-unicef-warn-of-a-decline-in-vaccinations-during-covid-19>
14. World Health Organization. At least 80 million children under one at risk of diseases such as diphtheria, measles and polio as COVID-19 disrupts routine vaccination efforts, warn Gavi, WHO and UNICEF. World Health Organization. 2020. p. 22–5.
15. World Health Organization. WHO and UNICEF warn of a decline in vaccinations during COVID-19 [Internet]. 2020 [cited 2022 Feb 23]. Available from: <https://www.who.int/news/item/15-07-2020-who-and-unicef-warn-of-a-decline-in-vaccinations-during-covid-19>



16. Takahashi S, Metcalf CJE, Ferrari MJ, Moss WJ, Truelove SA, Tatem AJ, et al. Reduced vaccination and the risk of measles and other childhood infections post-Ebola. *Science* (80- ). 2015 Mar;347(6227):1240–2.
17. Organization world H. COVID-19 pandemic leads to major backsliding on childhood vaccinations , new WHO , UNICEF data shows. 2021. p. 5–9.
18. Gurnani V, Haldar P, Aggarwal MK, Das MK, Chauhan A, Murray J, et al. Improving vaccination coverage in India: Lessons from Intensified Mission Indradhanush, a cross-sectoral systems strengthening strategy. *BMJ*. 2018 Dec;363:k4782.
19. Ministry of Health and Family Welfare. National Family Health Survey - 4 Tamil Nadu. 2014.
20. Shet A, Dhaliwal B, Banerjee P, DeLuca A, Carr K, Britto C, et al. Childhood immunisations in India during the COVID-19 pandemic. *BMJ Paediatr open* [Internet]. 2021 Apr 14;5(1):e001061–e001061. Available from: <https://pubmed.ncbi.nlm.nih.gov/33928197>
21. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* [Internet]. 2006 Jan 1;3(2):77–101. Available from: <https://www.tandfonline.com/doi/abs/10.1191/1478088706qp063oa>
22. Kotlar B, Gerson E, Petrillo S, Langer A, Tiemeier H. The impact of the COVID-19 pandemic on maternal and perinatal health: a scoping review. *Reprod Health* [Internet]. 2021;18(1):10. Available from: <https://doi.org/10.1186/s12978-021-01070-6>
23. Kowalczyk I, Gębski J. Impact of Fear of Contracting COVID-19 and Complying with the Rules of Isolation on Nutritional Behaviors of Polish Adults. *Int J Environ Res Public Health* [Internet]. 2021 Feb 9;18(4):1631. Available from: <https://pubmed.ncbi.nlm.nih.gov/33572068>
24. Sahu DP, Pradhan SK, Sahoo DP, Patra S, Singh AK, Patro BK. Fear and anxiety among COVID-19 Screening Clinic Beneficiaries of a tertiary care hospital of Eastern India. *Asian J Psychiatr* [Internet]. 2021/01/13. 2021 Mar;57:102543. Available from: <https://pubmed.ncbi.nlm.nih.gov/33517132>
25. Gupta MD, Jha MK, Bansal A, Yadav R, Ramakrishanan S, Girish MP, et al. COVID 19-related burnout among healthcare workers in India and ECG based predictive machine learning model: Insights from the BRUCEE- Li study. *Indian Heart J* [Internet]. 2021;73(6):674–81. Available from: <https://www.sciencedirect.com/science/article/pii/S0019483221002212>
26. Banerji D. Health and family planning services in India: an epidemiological, socio-cultural and political analysis and a perspective. *Health and family planning services in India: an epidemiological, socio-cultural and political analysis and a perspective..* 1985.