

CASE STUDY FROM SINDH PROVINCE, PAKISTAN

mHealth and Social Media Based Interventions to Provide Childhood Immunization Coverage & COVID-19 Vaccine Hesitancy



Yale *Institute for Global Health*



The pilot project was conducted in Pakistan's Sindh Province between January 2021 – October 2021. It was implemented through a partnership between the Aga Khan University and Yale Institute for Global Health, with funding from the Sabin Vaccine Institute. The project received ethics approval from the Ethics Review Committee of Aga Khan University.

KEY TAKEAWAYS

- Design and train healthcare workers on the use of digital health tools to create and sustain vaccine awareness and advocacy and increase science literacy, especially within rural and peri-urban settings
- Capacitate lady health workers and home routine immunization vaccinators to effectively communicate about vaccines and vaccination and engage interpersonally with vaccine refusers
- Conduct home vaccination drives and employ targeted informational outreach with community members and heads of household influencing vaccination decision-making behavior

APPROACH

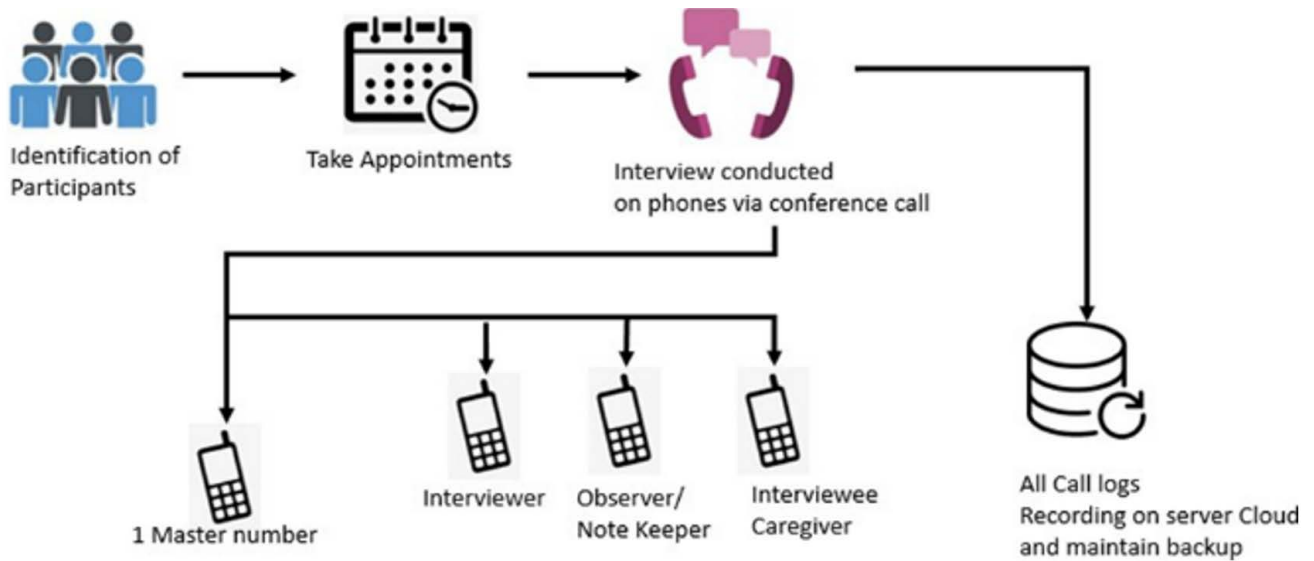
Exploratory research using a purposive sampling approach was implemented to conduct semi-structured (60) in-depth interviews (IDIs) with parents/caregivers and (7) focus group discussions (FGDs) amongst healthcare workers (HCWs; doctors, nurses, pharmacists, lady health workers [LHWs], etc.); across three sites to:

- Investigate the knowledge and awareness of parents/caregivers and HCWs regarding childhood routine immunization (RI) and COVID-19 vaccines, and
- Understand the suitability of mHealth and social media interventions to improve vaccination coverage during the COVID-19 pandemic in the Pakistani context.

Data was collected at one urban and peri-urban setting, each, in Karachi and one rural site in Matiari; and analysis was conducted using a thematic analysis framework (see Figure 1).

This qualitative study was among the first few studies in Pakistan attempting to assess the knowledge, attitudes, practice, perceptions and barriers related to RI and COVID-19 vaccination. It also explored the role of mHealth in improving vaccination uptake in a socioeconomically diverse population of caregivers and HCWs residing in rural and urban areas of Sindh Province. Findings may inform policymakers and health organizations in designing effective digital communication strategies and mHealth interventions to strengthen positive attitudes regarding vaccines in these settings.

Figure 1. Virtual flow of mobile phone-based in-depth interviews & focus-group discussions



IMPLEMENTATION STAGES

In-depth Interviews amongst Parents/caregivers

Perceptions of parents and caregivers by setting are described below.


Rural & Peri-urban <ul style="list-style-type: none">• Denied the existence of COVID-19 in their community• Concerned about vaccine safety/side effects, efficacy, availability, and quality control for home vaccinations• Distrust in governments (forcing the vaccine due to payment by Western governments)• Used electronic media (television) as the main source of health information	Urban <ul style="list-style-type: none">• More generally trusted COVID-19 vaccines as protection• Used television and social media platforms (WhatsApp, Facebook and Twitter) to seek COVID-19 information
Across Settings <ul style="list-style-type: none">• Aware of COVID-19 signs, symptoms, severity of disease, and preventive measures; but skeptical about government-imposed lockdowns, having suffered financially and psychologically• Viewed RI as beneficial in reducing severity of life-threatening disease• Influenced in vaccination decision-making by elders' opinions, healthcare providers' advice and others' experiences regarding vaccination; with physicians' views more heavily trusted, as compared to others• Accepted the replacement of standard mobile phone ringtones with recorded health awareness and informational messages during the COVID-19 by the Government of Pakistan<ul style="list-style-type: none">• The information (e.g.; spreading awareness about COVID-19 health risks, signs, symptoms, prevention, vaccination and government-enforced lockdowns) was well received (see Figure 2)• Confused by conflicting health information received through various information sources, including electronic media, which caused apprehension in acceptance of COVID-19 vaccination	

Focus Group Discussions amongst Healthcare Workers

Perceptions amongst HCWs are as follows:

- Satisfied with the safety/efficacy of available COVID -19 vaccines in Pakistan, but had doubts regarding the rapid research and development of these vaccines and covering multiple COVID-19 strains
- Felt that COVID-19 vaccines should be included as part of the Expanded Program on Immunization (EPI), Pakistan
- Aware of and trusted in globally and nationally recommended COVID-19 prevention guidelines; however, social distancing and face masks were less adhered to amongst HCWs outside of hospitals and primary healthcare facilities
- Utilized WhatsApp groups, Facebook, and government dashboards to obtain vaccination/pandemic-related information
- Identified specific social media news content led to vaccine hesitancy (e.g.; infertility, brain stroke and death due to COVID-19 vaccination)
- Considered electronic media as an important medium for awareness related to COVID-19 information
- Felt the financial and mental well-being of overworked frontline HCWs was not appropriately considered by employers
- Perceived home vaccination services as successful during suspended public transportation and RI center closures

Figure 2. Innovative ringtone message for COVID-19 preventive measures



THIRD RINGTONE MESSAGE
July 13, 2020

Coronavirus spreads more rapidly in crowded places. Therefore, this Eid avoid going out and keep your Eid preparations simple. Try to be part of a group sacrifice. In case it's utmost necessary to go out for shopping, then choose a timing when it's less crowded. Wear mask while going outside. Maintain social distance of 6 feet and wash your hands frequently with soap for 20 seconds. Your precaution saves your life as well as those of your family. Be careful, save life.

کورونا وائرس رش والی جگھوں میں زیادہ تیزی سے پھیلتا ہے۔ لہذا اس عید پر گھر سے باہر نکلنے سے گریز کریں۔ اور اپنی عید کی تیاری کو سادہ رکھیں۔ کوشش کریں کہ اجتماعی قربانی میں حصہ ڈالیں۔

اگر خریداری کے لیئے جانا بہت ہی ضروری ہے تو ایسے وقت جائیں جب رش کم ہو۔ باہر نکلتے ہوئے ماسک پہنیں، دوسروں سے چھ فٹ کا فاصلہ رکھیں اور بار بار ہاتھوں کو بیس سیکنڈ تک صابن سے دھوئیں۔ آپ کی احتیاط آپ کی اور آپکے گھر والوں کی جان بچا سکتی ہے۔ احتیاط کریں۔ جان بچائیں

INFORMING COMMUNITY ACTION

Policy

- Create measures to support the financial and mental well-being of HCWs during the pandemic
- Improve upon and translate content of informational automated audio ring tones and text messages into regional languages
- Monitor and address misleading informational posts and videos circulating on digital and electronic media including social media (e.g.; engage the Pakistan Telecommunication Authority)

Program

- Design low-cost digital health solutions to identify and overcome vaccination barriers (e.g.; mobile phone based-caller tunes, text and automated call-based messages, behavior change applications including social media-based applications and complex digital health solutions such as Artificial Intelligence and Machine Learning platforms)
- Train HCPs on using digital health tools to create and sustain vaccine awareness and advocacy and increase science literacy, especially within rural and peri-urban settings
- Capacitate LHWs and home RI vaccinators to effectively communicate about newly approved vaccines and engage interpersonally with vaccine refusers

Practice

- Conduct key physician-led trainings for HCWs ON RI advocacy and awareness campaigns within rural and peri-urban settings to yield maximum knowledge translation from HCWs to heads of households being counseled on the quality, safety and efficacy of RI and importance of adherence to the vaccination schedule during the COVID-19 pandemic
- Conduct home vaccination drives and LHW-led surveillance within rural populations
- Implement a feasibility study of integrating COVID-19 vaccines into the EPI framework to increase COVID-19 vaccine acceptance and compliance

RESEARCH LEADS



Abdul Momin Kazi, MBBS, MPH

Aga Khan University Department of Paediatrics and Child Health

Abdul Momin Kazi is a Research Assistant Professor in the Department of Paediatrics and Child Health at the Aga Khan University in Pakistan. His expertise includes epidemiology, global health, clinical research, data analysis and digital health. Kazi received his MBBS from Dow Medical College and his MPH from Vanderbilt University. He is currently a PhD candidate at the University of British Columbia focused on digital health and working on multiple studies focused on surveillance and digital health as an investigator at the Aga Khan University.



Fauzia Malik, PhD, MSc

Yale University

Fauzia Aman Malik PhD, MSc is the Special Advisor to the Dean for Global Health Research and Initiatives at the Yale School of Public Health, and an Associate Research Scientist at the Department of Health Policy and Management. As a trained Medical Anthropologist, she specializes in ethnographic, participatory mixed methods research, and designing and evaluation of community-based health programs that address the needs of vulnerable populations. A substantial portion of Dr. Malik's research portfolio includes work on improving acceptance and uptake of vaccines for pregnant women and their children in Pakistan, Kenya, Honduras, Argentina, Peru, Brazil, Mexico and the United States.