

Undertaking rapid assessments in the COVID-19 context: Learning from UNICEF South Asia

COVID-19 Related RCCE Behavioural Change Study in Pakistan



A Case Study

Context

Risk communication and community engagement (RCCE) is a critical element of disease response. In the context of the evolving COVID-19 pandemic, there was a need to rapidly gather community-level data on COVID-19 related behaviours and its drivers over time. UNICEF Pakistan experimented early in the pandemic with quantitative and qualitative remote data collection around people's knowledge, attitudes and practices related to COVID-19;¹ the information was synthesized in periodic RCCE Briefs and disseminated among Government and development partners. Nonetheless, consistently collected longitudinal data across the country about changing behaviours and perceptions, their drivers, needs and challenges were missing.

Against this background, UNICEF Pakistan implemented a longitudinal survey with national coverage that collected data directly from people at the community level. Similar surveys have been

implemented across the region and globally with support of the UNICEF Regional Office for South Asia (ROSA) and UNICEF Headquarter (HQ). The study focused on RCCE behavioural change, information and trust, coping strategies and evolving needs in the COVID-19 pandemic situation. It aimed to gather evidence over multiple rounds to enable UNICEF Pakistan and other stakeholders to develop an effective and dynamic RCCE response to the COVID-19 pandemic. An additional objective was to learn about approaches for rapid, time-sensitive and community-sourced data collection during emergencies.

Implementation arrangements

UNICEF Pakistan, with technical assistance from and in collaboration with UNICEF ROSA and HQ, implemented the study. Viamo, a global social enterprise that specializes in mobile technologies for data collection and ICT for development and has a strong presence in Pakistan, was responsible for

¹ Among others, UNICEF conducted short chatbot surveys via WhatsApp through its community-based polio staff, and in-depth qualitative interviews with health staff and other community members.

conducting the survey and descriptive data analysis. The target population were individuals with mobile phone access, aged 20 and above. The study, which was planned to cover six rounds of data collection, was designed and contracted in June-July 2020 at a cost of USD 41,225. Four rounds of data collection were conducted in 2020: round 1 in August, round 2 in September, round 3 in October and round 4 in December 2020. The remaining two rounds were conducted between January and March 2021.

Data collection and analysis

The study was designed to gather quantitative data across the four provinces and three administrative areas² of Pakistan through monthly cross-sectional surveys. As in-person data collection was not possible in the COVID-19 context, the survey was conducted remotely using mobile technologies. To adapt the data collection modalities to the diverse digital environments in Pakistan and optimize cost, two methods were used: an online survey for digitally-enabled persons in urban areas (who own smart phones and have data access), and an audio version of the same survey via interactive voice responses (IVRs) for persons in peri-urban or rural areas who own basic phones and are not internet users.³ In all, 4,137, 3,577 and 3,488 respondents respectively, completed the first three rounds; on average 73% via IVR and 27% via the online survey.

UNICEF HQ provided a survey questionnaire template with questions that addressed elements of a behavioural model, which were applied to COVID-19 related behaviours.⁴ UNICEF Pakistan adapted the questionnaire to the Pakistan context in collaboration with ROSA, although a standard set of questions was maintained to enable comparison with similar surveys implemented in other countries. The questionnaire covered three modules: 1) behaviour and practices, including risk

perception and preventive measures; 2) coping strategies and emerging needs, including financial, social and psychosocial coping mechanisms; and 3) information, communications and trust. After implementation in the first two rounds, the questionnaire was selectively adapted over the next two rounds to respond to new information priorities of the evolving COVID-19 situation.⁵

The IVR pilot indicated that the initial questionnaire, which covered the same 30 questions as the online survey, was too long and could not be administered in a single wave as it is difficult to keep IVR respondents engaged. The IVR survey was, therefore, fielded in three waves to reduce the risk of drop out. Respondent engagement in the IVR survey was further enhanced by using local languages for the audio recording and introducing the survey as UNICEF research.⁶ On average, urban respondents took 10 minutes and 40 seconds to complete the online survey, compared to IVR rural respondents who took 11-14 minutes. Despite these measures to enhance respondent engagement, the questionnaire was substantially shortened in the third round to further optimize completion rates.⁷

Ethical considerations regarding the risk of in-person data collection during the pandemic were a key factor in opting for remote data collection. Furthermore, an introduction text was inserted to highlight confidentiality, anonymity and the voluntary nature of the data collection, balancing the need for informed consent and keeping the introduction concise. Ethics was also the main consideration to target adult respondents, since data collection among adolescents, while considered valuable and initially planned, would have required ethical review by an external ethical review board, which the rapid survey roll-out schedule did not allow.

² The provinces are Baluchistan, Punjab, Sindh and Khyber Pakhtunkhwa, and the administrative areas are Islamabad Capital Territory, Azad Jammu and Kashmir and Gilgit-Baltistan.

³ The online survey was distributed through SMSs that included a link to the questionnaire, which could be completed on a smart phone or computer.

⁴ UNICEF's Behavioural Drivers Model was used as the conceptual framework. This model is used to understand and guide social behaviour change promoted by UNICEF.

⁵ Questions were added in round 2 about respondents' trust in schools implementing protective measures and their intention to send children back to school.

⁶ Introducing the survey as UNICEF research improved respondent engagement rates by almost 14% following survey piloting before the first round.

⁷ The survey had 31 questions in the first round, 33 questions in round 2 and 20 in round 3. In addition, a limited number of socio-demographic questions were included.



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Viamo analysed the data using descriptive statistics. Data were disaggregated by sex, province and age group, as well as by response mode (online survey vs IVR, urban vs rural). Because the sample data were selected cross-sectionally across rounds and were not distributed in line with the national population (see below), special attention was paid during analysis to making the data comparable across rounds and more representative of the national population. Sample data were reweighted during analysis on key characteristics (gender, age group, rural/urban, education) in accordance with their population distribution. This was made possible because a probabilistic sampling strategy had been applied.

Using mobile technologies for data collection allows the flexibility to make quick changes in the questionnaire, and to implement the survey at lower costs, with less time and human resources

as compared to other alternatives (e.g. paper-based or phone survey). This is particularly valuable in emergency contexts. However, there are certain limitations. An IVR or online survey, due to its short format, can include only a limited number of questions and qualitative information through open-ended questions cannot be easily gathered.^{8,9} This also meant that self-reported COVID-19 preventive behaviours (e.g. handwashing) could not be further probed to address socially desirable responses. Moreover, it is difficult to probe sensitive issues. Discussions are ongoing on ways to address social desirability bias in self-reported responses in remote surveys, such as IVRs, including for example, rigorously pre-testing the questionnaire in a sub-sample, having follow-up questions in multiple-wave IVRs and using indirect questioning techniques.¹⁰ Furthermore, observational surveys of behaviours are planned to triangulate the findings in combination with ongoing qualitative research.

⁸ These technologies allow including open-ended questions. However, data processing and analysis takes time. Moreover, in the case of IVR, voice recorded responses can break the flow and speed of the survey.

⁹ Furthermore, as the IVR modality does not allow multiple answer options to be selected, some questions had to be divided into separate questions, lengthening the survey. Also, IVR constrains question formulation as questions need to trigger single answer responses.

¹⁰ For example, in an IVR survey in Afghanistan, respondents were asked in an indirect way about behaviours they observed in the community, which mitigated social desirability bias in responses.

While the short intervals between survey rounds enabled quick and regular generation of information, it allowed limited time to analyse and interpret data, and adapt the instrument. Furthermore, little significant change could be observed across the monthly rounds. As a result, it was decided to take a deliberate pause in the survey after round 3 (in November 2020) to reprioritize questions to suit emerging information needs, revisit the formulation of questions and align the survey data with complementary qualitative data findings.

Sampling

To achieve a sample with national coverage, the survey used the database of a major mobile network operator (MNO), with a user-base of several hundred thousand citizens, as the sampling frame. As a mobile phone owner can own multiple SIM cards, to mitigate the risk of multi-SIM bias¹¹ one MNO was selected to run the survey and the user-base of the MNO was locked in the target locations. This base was the sample universe which was used for each round of the survey.

A stratified random sampling strategy was adopted, wherein the strata were formed based on the geographical location of the provincial/administrative area and urban/rural area. Equal sample size targets were set per province/area to enable analysis at this subnational level, with a margin of error of 1% and confidence interval of 95%.¹² This totalled an overall target sample size of 3,325. Urban stratification, which determined the use of the online data collection modality, was based on the selection of main cities across provinces, including the capital territory.

Given the provincial/area sample targets were achieved to varying degrees across rounds (often overshooting the sample target), the national sample composition by province varied across rounds. As the sample was biased towards the rural population during the first two rounds, the number of days on

which the online survey remained live was increased to improve the urban response rate. To strengthen comparability across rounds, the datasets across the three rounds were initially trimmed to a uniform sample size of 3,125, harmonizing the data composition across rounds on key variables. The comparability and representativeness of the data were further improved by the application of population weights. Furthermore, from the fourth round onwards, rural/urban location was asked in the questionnaire to triangulate residence data, which was previously drawn from SIM registration information included in the MNO database.

While the study achieved wide coverage across provinces/administrative areas in Pakistan, it was challenging to reach women in similar numbers as men. Unlike geographical location, the demographic information of users is not available in the MNO database, making it more difficult to segment and target the sample by gender. Further, ownership of mobile phones is higher among males, and men are more likely to answer the phone and complete the survey.¹³ Although a male/female target sample was estimated during the survey design phase based on population distribution, a quota was not imposed to reach an approximately equal sample of women and men, which would be more expensive and time consuming as it requires more calls to be made. The proportion of women in the sample varied between 20-30% across rounds, with a higher proportion during the third round when extra efforts were made to reach more women. However, the gender imbalance in the sample was addressed by reweighting the sample data during analysis.¹⁴

The survey completion rates increased over time as a result of improved targeting and the shortening of the questionnaire. In the case of the IVR survey, while completion rates across rounds were very low due to the use of multiple waves, they almost doubled from 0.9% to 1.6% between the first and third rounds after the number of call waves

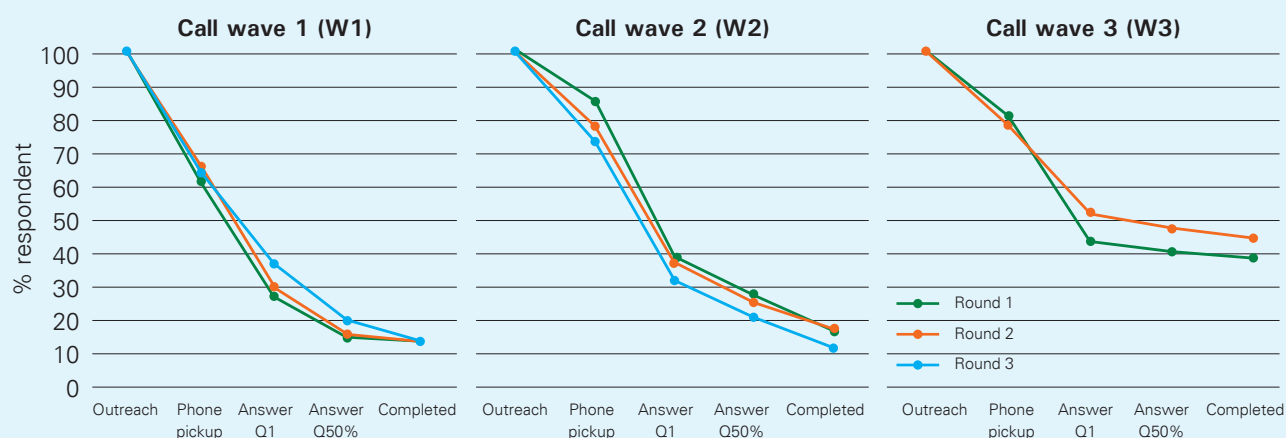
¹¹ This means that there could be dual coverage of the same sample units in the sample frame.

¹² Sample sizes were set at 665 units per province/area, except for Islamabad, Gilgit-Baltistan and Azad Jammu and Kashmir, for which the joint target sample size was set at 665 units.

¹³ Rowntree, O. and Shanahan, M. (2020) The Mobile Gender Gap Report 2020. GSMA.

¹⁴ Ex post reweighting could not perfectly rebalance the sample because some groups of females (e.g. young urban females) were not represented in the sample.

Figure 1: Engagement/drop off rates across different waves for the three IVR survey rounds



Source: Viamo, Pakistan

was reduced to two due to the shortening of the questionnaire.¹⁵ Figure 1 provides an overview of the percentage of IVR respondents who continued to be engaged during the different stages of the survey, across waves and for different rounds. Completion rates for the online survey ranged from 0.09% in the second round to 0.18% in the third round.¹⁶ The low completion rates did not pose a problem in achieving the targeted sample size in the given time period because Viamo's well-established relationship with MNOs in Pakistan allows sending out a large number of calls/SMSs at relatively low cost. However, certain groups and locations are more difficult to reach and engage, which require more calls for a given number of completed surveys.

Partnership

The study was designed and implemented through a close collaboration between different UNICEF units, both across offices (Pakistan Country Office, ROSA and HQ) as well as sections (Communication for Development section and Evaluation section). As the primary intended user of the study, UNICEF Pakistan decided on the questionnaire content, sampling strategy and implementation modalities. It could build on the methodological design work,

including questionnaire template prepared by UNICEF HQ, and draw on technical assistance from ROSA to refine, among others, the questionnaire, the sampling and the ethics. UNICEF Pakistan could further leverage the analytical capacity of the other offices. For example, the weight model for data analysis was developed by UNICEF HQ.

Furthermore, UNICEF Pakistan worked in close partnership with Viamo to rapidly roll out the survey, based on a mutual interest to learn and adapt. As UNICEF and Viamo had worked together in Pakistan before, a collaboration based on trust and open communication could be quickly established. Viamo used its experience to provide technical inputs on the use of different technology tools in rural and urban areas for different target groups, and to identify areas where mobile penetration was greater. It also leveraged its relationship with MNOs in Pakistan to implement the survey efficiently.

The partnership facilitated the rapid design and implementation of the survey rounds, which was important in the emergency context. It put in place complementary sectoral, technical and analytical capacity and human resources to ensure quality

¹⁵ In absolute numbers, during the first round 350,000 IVR calls were initiated and 3,151 respondents completed the entire survey (in three waves). During the third round 150,000 calls were initiated and 2,383 respondents completed the entire survey (in two waves).

¹⁶ In absolute numbers, during the second round one million SMSs were sent to achieve 888 completed online surveys. During the third round, only 600,000 SMSs were sent to achieve 1,105 completed surveys.

of the survey. Nonetheless, the speed at which the rounds were implemented and the ongoing COVID-19 emergency context put pressure on the ability to coordinate, rapidly adapt the survey across rounds and analyse the data. However, it also offered opportunities for capacity building. For example, Viamo took on board the weight model developed by UNICEF HQ to quickly apply it in subsequent survey rounds. In addition, the survey data were used by the different units to deepen analysis and disseminate the findings. For example, ROSA is using the data for regional analysis drawing on similar data from other countries. While multiple use of data is an important benefit of the partnership, it also required trade-offs for questionnaire design in terms of adapting it fully to the local context and learnings, versus maintaining standard questions to enable inter-country comparability.

Agility/timeliness

The study was designed and contracted, and the survey prepared for roll-out, over a period of six weeks, which is short in light of external partner contracting, sampling design and the data collection modalities used. Review of the translated IVR audio recordings took longer than planned, delaying the roll out of the IVR survey. Three survey rounds were completed quickly, and the findings disseminated every month.¹⁷ The rapid roll-out of the study was possible because Viamo could be promptly brought on board through an existing Long-Term Agreement (LTA). Furthermore, the internal UNICEF collaboration meant that questionnaire preparation could start from an existing template, and design capacity was mobilized at multiple levels.

However, due to the rapid roll-out and the quick survey frequency, there were some trade-offs. For one, the tight timelines and budget constraints allowed little time to pre-test the survey questionnaire (for both design and translation into

local languages), analyse and interpret the data, and adapt the survey instruments. As a result, questionnaire pre-testing remained limited to an internal review by UNICEF and Viamo staff, and to verification that the technology was functioning properly.¹⁸ Moreover, to avoid delays in the survey roll-out, the initially planned inclusion of adolescents aged 15 and older as respondents was dropped as this would have required external ethical review. A learning is that sufficient technical and analytical capacity needs to be in place if quick rounds of data collection are planned.

Use of findings

The survey findings from multiple rounds were shared with the Government, UN agencies and donor agencies in Pakistan. UNICEF Pakistan synthesized the findings from the three survey rounds with other data sources, both quantitative and qualitative, to develop periodic COVID-19 RCCE Briefs.¹⁹ These briefs, with insights and recommendations, were used by Pakistan's National COVID-19 RCCE Taskforce, led by the Ministry of Health Services, for internal COVID-19 response discussions and external communication. For example, the survey findings were used to persuade the Government about the complacency around COVID-19 preventive behaviours that had set in across the country.

The survey data were also shared internally with other UNICEF divisions. Furthermore, at the regional and global level, ROSA and HQ have used the survey data from Pakistan, together with data from other countries, to examine behavioural drivers in line with UNICEF's Behavioural Drivers Model. The data are planned to be uploaded on regional and global dashboards for further easy access and dissemination.

Nonetheless, despite some of the above dissemination efforts, these efforts were not driven by a well-established dissemination plan,

¹⁷ During round 2 and round 3, data collection took only one week or less. Findings were reported one week after the end of the survey.

¹⁸ The need for pre-testing was moderated by the fact that the initial questionnaire template included questions sourced from well-established surveys.

¹⁹ RCCE Briefs drew on other data sources, such as, behavioural pattern insight from anthropological and social data, social media sentiment analysis, and data from the 1166 Helpline.



Photo Credit: @UNICEF/ Ramzan Chaudhry/ 2020

aimed at reaching a range of audiences to inform the RCCE response to the COVID-19 pandemic. Dissemination was also not able to keep up with the monthly rounds, which affected its use. Therefore, the sharing of findings with non-specialist or non-technical audiences had remained limited, although further dissemination efforts are planned based on more advanced data analysis.

The study achieved its objectives to learn about rapid, time-sensitive and community-sourced data collection. The experience is fuelling proposals for

further incorporation and institutionalisation of social and behavioural evidence into programming and use it as a critical accountability tool; as well as the experimentation with complementary data collection methods (e.g. observational surveys) to address the challenges of remote surveys.

Summary learnings

The strengths, challenges, learnings and innovations related to the implementation of this longitudinal rapid assessment are summarized in the table below.

Table: RCCE, Pakistan, rapid assessment: Summary Learnings

Strengths	Challenges
<ul style="list-style-type: none"> • Use of mixed remote data collection modalities allowed adaptation to diverse digital environments and optimization of cost. • The sample had national coverage and reweighting strengthened its representativeness. • Monthly survey rounds were rapidly rolled out. • Technical support to meet quick deadlines was mobilized through partnership. 	<ul style="list-style-type: none"> • Short questionnaire format limited the variables that could be investigated. • Non-phone users were not included and specific groups (e.g. females) were underrepresented in the sample. • Social desirability bias likely affected self-reported behaviour data. • Rapid roll-out constrained survey pre-testing, data analysis and dissemination. • A dissemination plan is missing, which limits use.
Learnings and innovations	
<ul style="list-style-type: none"> • Separating an IVR survey into several call waves allows for longer questionnaires, but affects survey completion rates; hence, it requires larger outreach numbers. • Low completion rates do not prohibit achieving survey sample targets and timing as long as concurrent outreach to a large number of potential respondents is possible at low cost. • Longitudinal surveys need to be flexible to review and adapt to the changing context and priorities over time; an interim review could help recalibrate the study. • High frequency and rapid rollout of data collection in an emergency situation requires planning for sufficient technical and analytical capacity; partnership can provide support for this, although it also requires foreseeing coordination time. • An integrated approach that includes observational and qualitative studies could help triangulate the findings. 	



This case study brief was produced by the Evaluation Section of UNICEF Regional Office for South Asia (ROSA), with support of the UNICEF Pakistan Country Office. It was co-authored by Deepika Ganju (Consultant) and Tom Pellens (UNICEF ROSA).

For more information visit:

UNICEF Regional Office South Asia website <https://www.unicef.org/rosa/>

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Suggested citation: UNICEF. 2021. COVID-19 Related RCCE Behavioural Change Study in Pakistan: A case study, in *Undertaking rapid assessments in the COVID-19 context: Learning from UNICEF South Asia*. UNICEF Regional Office for South Asia: Kathmandu, Nepal.