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Integrating technology to improve distance learning opportunities and screening services for caregivers of 0-3 children in Bhutan during the COVID-19 pandemic

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Asia-Pacific Regional Network
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Introduction

Playful interactions with caregivers shape young brains (National Scientific Council on the Developing Child, 2007). Yet, many children, especially the most disadvantaged, miss out on such opportunities when caregivers lack the knowledge, skills, and motivation to play. In Bhutan, 26 percent of young children risk not reaching their developmental potential (Nurturing Care for Early Childhood Development, 2021).

Bhutan's health system did not effectively address the early stimulation and responsive care needs of children under three years old. The Health Assistants' (HAs) implementation of group sessions for caregivers 0-3-year-old in basic health units and outreach clinics, using play and positive parenting sessions from Save the Children's Building Brains program, is effective in the pilot approach for improving the children's development through community health systems. The caregivers for the pilot project were either parents or other significant adults (e.g., grandparents and aunties) in the family who were mainly responsible for looking after the children. The caregivers attended 12 play and positive parenting sessions (one session a month), which built their capacities to engage in play and positive parenting practices with their children. The pilot implemented from 2017 to 2018 successfully improved the children's developmental status with a medium-to-large impact on children's overall development (Save the Children, 2019). The Ministry of Health (MoH), partnered with Save the Children and with funding from The LEGO Foundation, is taking the program to scale across the country. The program is Prescription to Play: A Framework to Integrate, Scale-up, and Sustain Playful Parenting in Health Systems.

The Prescription to Play (P2P) project aims to strengthen parenting practices around play, responsive caregiving, and positive parenting to support the optimal development of 0–3-year-old children. Some of the key findings of the project's baseline study are that the number of toys in the home and the number of playful parenting activities in the past week were the strongest drivers of children's developmental outcomes. That is, exposure to more toys and playful parenting activities was significantly positively related to children's Caregiver Reported Early Development Index (CREDI) scores (Pisani & Chakhaia, 2021). The COVID-19 pandemic significantly delayed the delivery of the project. It was impossible to conduct training and workshops to build the capacities of HAs for delivering the P2P group sessions and to bring caregivers together in groups to participate in 12 one-hour-and-a-half sessions at health centres and outreach clinics.

The pandemic threatens young children's development in unparalleled ways, in Bhutan, and around the world. Effects of prior pandemics in other parts of the world confirm the risk of both immediate and long-term adverse

consequences for children, with particular risks faced during early childhood, when brain architecture is still rapidly developing and highly sensitive to environmental adversity (Shonkoff et al., 2012). When children grow up deprived of stimulation, with low interaction with adults, and ongoing, persistent stress, their young minds fail to build or maintain important brain connections. This ongoing "toxic" stress causes visible changes in brain structure (Center on the Developing Child, 2015) and can have damaging effects on children's learning, development, behaviour, and health across the lifespan (National Scientific Council, 2014).

To mitigate such challenges, P2P offered caregivers and HAs a safe way to access information, learn skills, and receive prompts to early childhood care and development during the current and future pandemic situations. The initial project design was adapted to include technologies allowing for distanced approaches. More importantly, these ideas will help health workers continue to implement the project and caregivers to continue accessing playful parenting sessions and child developmental and referral services for their children. This paper will explore how the P2P team has developed a mobile application and used digital tools in response to the COVID-19 pandemic.

Use of technology to ensure access to P2P project

P2P APP: OVERALL

According to the report Digital 2020: Bhutan, there were 450.2 thousand internet users in Bhutan in January 2020. The number of internet users in Bhutan increased by thirty thousand (+7.2%) between 2019 and 2020. Internet penetration in Bhutan stood at 59% in January 2020. There were 730.4 thousand mobile connections in Bhutan in January 2020. The number of mobile connections in Bhutan increased by twenty-five thousand (+3.5%) between January 2019 and January 2020. The number of mobile connections in Bhutan in January 2020 was equivalent to 95% of the total population (Kemp, 2020).

The mobile application can function both online and offline. The application envisions supporting the HAs and caregivers during the COVID-19 and future pandemic situations. It is also an additional way to support at-home learning even when regular sessions and screening could resume. The app is divided into two main components: a health assistant and a caregiver component. Caregivers have access to a wide range of information, tools, play reminders, personalised tracking, and play plans for their children. The HAs, on the other hand, benefit from digital copies of their session guide and training modules and access to a digital version of a child-development screening tool. The two sides of the app are connected by a chat feature, allowing caregivers and HAs to interact directly and remotely. At the time of the publication of this paper, the HA side of the application had been launched, with the caregiver side still under development. This paper will focus on the screening and play plan feature of the caregiver side of the app, as well as the chat and support function in the HA side of the app.

P2P APP COMPONENTS: CONTENT REPOSITORY AND LEARNING PLATFORM FOR HAS

The HA component of the app will enhance the project implementation efficiencies. It will function as a repository for all program materials and information that will help HAs while conducting the P2P group sessions for

caregivers. To sustain the quality of the group/individual discussion, the HAs will come together through the app for virtual 'plan do study act' (PDSA) sessions. HAs of each district will form groups to discuss virtually the delivery of group and individual sessions. The district health officers (DHOs), who serve as supervisors, will facilitate the sessions and guide the PDSA process. During the PDSA sessions, HAs will interact/communicate through the chat platform regarding project delivery, challenges/issues, and successes. The app will provide an opportunity to carry out constructive discussions, which will help improve the quality of the P2P project rollout.

P2P APP COMPONENTS: THE BHUTAN CHILD DEVELOPMENT SCREENING TOOL AND PLAY PLANS FOR CAREGIVERS

The P2P project includes integrating the national-level childhood development screening tool for children aged 0-3, which refers to Bhutan Child Development Screening Tool (BCDST). This tool, developed by MoH, is now integrated into the Mother and Child Health Handbook. The HAs use the tool to screen children for developmental delays and red flags in four development areas—the physical, cognitive, language, communication—and socio-emotional.

Health Assistant screening a child using the Bhutan Child Developmental Screening Tool (BCDST) and providing play plans to a caregiver.
Photo by Save the Children

Following the screening, the HAs provide mitigation actions, such as prescribing a play plan and/or providing referral services and follow-up when red flags are present. The P2P app has included a digital version of the BCDST, which serves two functions; first, it will allow for the early detection of red flags by HAs to support young children as early as possible. Second, it will help HAs provide the child development screening service and propose activities for child development, adapted according to each child's development, age, materials available, and the caregiver's learning objectives.

The designed activities allow caregivers (mothers, fathers, and other caregivers) to integrate developmentally stimulating activities in everyday chores, covering all developmental domains. Caregivers can select their activities and build their journey. They will be able to record their observations of their children's progress through the stages and notice improvements. They can also self-reflect on their parenting practices and learning through pre- and post-tests and in their observation journal. In addition, the app also provides positive parenting ideas and caregiver well-being tips, all designed to help the caregiver provide the support that their child needs at home. The services provided during an individual appointment with an HA, are now available from each caregiver's home.

DIGITAL DATA COLLECTION

To track the fidelity of implementation, P2P collects data about indicators associated with short and medium-term outcomes in an ongoing way. Table 1 shows the project goal, outcomes, and project indicators that will be provided by the HMIS.

*Table 1. **Goals, outcomes, and indicators program results***

Goal	Outcomes	Key activities	Indicators
All children aged 0-3 will reach their full potential through evidence-based playful parenting interventions	Outcome 1: Improved playful interactions between primary caregivers and their children (aged birth to three)	Group Sessions	Number of parents/caregivers of children 0-36 months enrolled.
			Number of parents/caregivers who have attended at least 3, 6, 9, and 12 sessions
			Number of children 0-36 months who have attended at least 3,6,9 and 12 sessions.
	Outcome 2: Improved practice among the workforce to promote playful interactions between primary caregivers and their children (aged birth to three).	BCDST Screening	Number of children screened by age groups
			Number of children identified with development on track
			Number of children identified needs monitoring
			Number of children identified needs further assessment

The COVID-19 pandemic re-emphasised the need to collect data using digital methods not only where in-person data collection efforts were stymied by lockdowns and health concerns, but also because timely data and analysis became critical for rapid decision-making during the pandemic and will remain critical for adaptive management of the program going forward. The P2P team relies on two main methods of digital data collection: the Bhutan Health Management Information System (HMIS) Mobile Application and

the KoBo Toolbox (2019). The HAs create monthly reports on caregivers' attendance in group sessions as well as children screened for developmental delays (in person), and related counselling and referral services. These are uploaded into the MOH's HMIS through a mobile application, with the MOH sharing the relevant data with the P2P team.

Data about the training of HAs, caregiver enrolment in group sessions, and monitoring visits is collected through Kobo Toolbox, an open-source digital data collection tool developed by the Harvard Humanitarian Initiative (KoboToolbox, 2019). HAs use KoBo on their mobile devices or computers to report directly on the roll-out training (pre- and post-test, assessment, and feedback forms) and to enter caregiver enrolment data for the group sessions.

The district health officers and focal HAs use the KoBo data collection tool to conduct supportive supervision of the HAs delivering the P2P group sessions. Collecting data digitally in this manner will allow information to be accessed and analysed immediately. The P2P project team will be able to use the findings to focus its monitoring efforts on intervention sites where problems or issues such as poor caregiver enrolment, weak caregiver attendance, ineffective professional support provided by district health officers and focal HAs, and the frequency threshold for monitoring visits by them is not met, and more cases of children with developmental delays are observed. This will allow for timely and adaptive learning about ongoing interventions in all situations, even when in-person data collection might not be possible and when on-the-ground data about the current situation is most critical.

Conclusion

The P2P program was designed in 2018 before the COVID-19 pandemic outbreak. The earlier experiences of piloting Save the Children's Building Brains project focused primarily on face-to-face interventions for training district health officers and HAs, for HAs to conduct the monthly P2P group sessions for caregivers of zero- to three-year-old children, and for opportunities for HAs to participate in learning and coaching sessions. The P2P project team prepared to implement face-to-face interventions as usual, when the COVID-19 pandemic made this approach unfeasible.

When lockdowns were implemented and restrictions on group gatherings were mandated by the government in 2019 and 2020, continued access to essential health services was prioritised. The P2P project team was challenged to not only implement during this pandemic but also to ensure that future lockdowns and restrictions in movement and group gatherings did not completely halt the implementation of the project. The P2P team also tried to think sustainably about future pandemics or shocks that could lead to a prioritisation of distanced or hybrid approaches. Our response to this challenge was to use technology in different aspects of the project to ensure that caregivers of 0–3-year-old children in Bhutan continue to have access to playful parenting techniques, child developmental screening, and referral services.

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