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Evidence for Investment:

The Impact of the Gindegi Goron Program on Early Childhood Development

Authors

Seda Akpinar, Elana Banin, Lisa Långberg, Ahsan Mahmud, Katie Murphy, Cecelia Scheuer.

Acknowledgments

Partnership is foundational to the Gindegi Goron program, it was developed by the IRC in collaboration with Sesame Workshop and local partner icddr,b. The cost-effectiveness analysis was led by the IRC's Best Use of Resources team. The Play to Learn program was funded by the LEGO Foundation.

PROGRAM OVERVIEW

The prenatal period and first 1,000 days are critical for brain development, significantly influencing a child's life trajectory. From ages 0-8, rapid brain development sets the foundation for future learning, health, and well-being. This process is significantly influenced by the child's health, nutrition, interactions with caregivers, as well as caregivers' mental and physical health.

Since 2012, violence in Myanmar has caused significant displacement, mainly affecting people belonging to the Rohingya ethnic group. Now, over 1 million Rohingya people live in the world's largest refugee camp in Cox's Bazar, Bangladesh. Of these, 52% are children.

Families are acutely affected by the toll of increased conflict, persecution, malnutrition, disease, and climate change. In places like Cox's Bazar, where women and children constitute the vast majority of the displaced population, children often spend their entire lives in camp settings, facing numerous adversities. The risk of both host and displaced children failing to reach their developmental potential is high. Nutrition outcomes are of particular concern. Poor maternal nutrition is highly prevalent in Bangladesh. It significantly contributes to an intergenerational cycle of malnutrition and poverty.

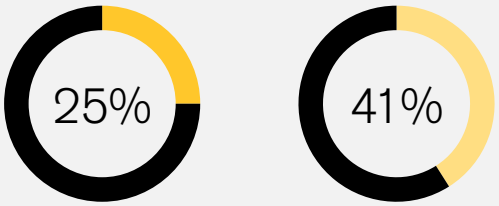
Gindegi Goron translates to "developing future" in Rohingya. This program aims to foster healthy development for pregnant or lactating mothers and their children ages 0-2 years old in Rohingya camps and host communities in Cox's Bazar, Bangladesh. The International Rescue Committee (IRC) developed the program in close collaboration with the local community and in partnership with Sesame Workshop and the Child Development Unit of the International Centre for Diarrheal Disease Research, Bangladesh (icddr,b), under the LEGO Foundation's Play to Learn program.

The program combines behavior-informed messages with health system referrals. Most of the content was derived from icddr,b's local adaptation of the evidence-based Reach Up and Learn program. The messages promoted play and early learning activities, as well as basic nutrition, primary health, and mental well-being. While mothers were the primary recipients, additional messages were adapted for fathers and grandparents, recognizing their significant influence on pregnant and lactating mothers in this context.

Program content and delivery methods were designed through consultations with caregivers, community members, and health and nutrition service providers from both Rohingya and host communities to respond to the expressed needs and knowledge gaps related to healthy pregnancy and optimal child development in the first three years of life. Program staff applied an iterative, human-centered design approach to ensure that the interventions were culturally relevant, that messages were easy to follow, and that activities could be prepared with objects already available in families' homes.

Key findings from a three-arm cluster randomized controlled trial (RCT) on the remote intervention demonstrate significant improvements in children's cognitive and language development, comparable to high quality in-person programs, for $98 per child.[1] The addition of monthly home visits, which doubled intervention costs to $203 a child, showed measurably enhanced cognitive and language development and improved the physical growth of malnourished children.

CHILDREN IN BANGLADESH WITH STUNTED GROWTH IN 2023



IN HOST COMMUNITY

ROHINGYA LIVING IN COX'S BAZAR

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This evidence highlights that the simple behavior changes this program encourages can prevent malnutrition and fuel brain development during the first 1,000 days of life. These findings have significant implications for demonstrating the efficacy of integrated programs to ensure limited resources are invested in a way that can enable children to both survive and thrive.

1. The currency used throughout this brief is US Dollars.

Research Methods

The IRC collaborated with icddr,b to design an RCT study to gather evidence on the impact and quality of Gindegi Goron. The study included 1,503 mothers and their children- 632 from the Rohingya community and 871 from the host community. Participants were divided into three groups: a control group, a group receiving only remote support (IVR), and a group receiving hybrid support (IVR + home visits). The children's development was measured using standard tests for infant health, development, and behavior, while mothers' outcomes were assessed through surveys on family care and depression.[2,3]

RESEARCH QUESTIONS:

What are the impacts of remote and hybrid interventions on **child development and growth?**

How do these interventions affect **parenting outcomes?**

What is the **cost-effectiveness** of these interventions?

ECD kits were made available including items like cloth balls, LEGO bricks, wooden blocks, teethers, Sesame Workshop story books, color ring pyramids, pin boards, puzzle cars, and bowls for age-appropriate food.

PROGRAM DELIVERY AND RESEARCH APPROACH

Human-centered program design occurred in 2019, piloted from September 2020 to May 2021, and the prototyping phase occurred throughout 2021.

Remote:
Interactive Voice Response (IVR) messages were delivered, including recorded phone calls, text messages, and bi-weekly check-in calls by trained facilitators.

Hybrid:
45-60 minute home visits were conducted by trained facilitators with local dialect fluency, in response to caregiver feedback.

Cluster randomized RCT study conducted:
Treatment Arm A - Remote
Treatment Arm B - Hybrid
Treatment Arm C - Control

2020
(Remote delivery due to COVID-19)

2021 **2022** **2023** **2024**

2. Bayley Scales of Infant and Toddler Development-IV and Wolke's Behavior Rating Scale.
3. Family Care Indicators and CES-D questionnaire.

Research Findings

CHILD DEVELOPMENT OUTCOMES

Both the remote and hybrid programs showed **significant improvements in the cognitive and language skills** of children from the Rohingya and host communities. Motor skills showed modest improvements but were not statistically significant.

Why this matters: Child development interventions can have transformative effects on families' lives. The results demonstrate that remote interventions can be highly effective in crisis settings where children are the most vulnerable and hardest to reach. At the same time, the hybrid model offers additional benefits, boosting child cognitive skills more than the remote-only program.

CHILD GROWTH AND NUTRITION OUTCOMES

Participation in the hybrid program is associated with **positive impacts on children's weight-for-height, a key indicator of children's nutritional status.** While the lack of baseline nutritional data means we cannot conclusively say that the hybrid program alone caused these improvements, they were likely due to the in-person interactions with facilitators who referred families to the health system services.

For malnourished children with stunted growth (29% of the Rohingya children and 22% of the host community), the hybrid program is associated with key nutritional status improvements, indicating the powerful potential of the hybrid program for children at-risk or experiencing malnutrition.[4] The remote program alone was only associated with height-for-age improvements.

Why this matters: These results show that high-quality responsive caregiving programs have the potential to improve nutrition status particularly children who are stunted. As the hybrid program positively impacted multiple growth indicators, it shows the benefit of in-person services for vulnerable families.

CAREGIVING OUTCOMES

Both remote and hybrid programs were associated with **improved home learning environments and parenting practices due to increased caregivers' knowledge.** The differences between the remote and hybrid program were not statistically significant.

In contexts like Bangladesh where childcare is primarily seen as the mother's role, it was key to involve a wider set of caregivers. Feedback from Gindegi Goron showed increased father and grandparent engagement, leading to positive outcomes for maternal wellbeing and child development.

An important insight from this study, also observed in a similar program in Lebanon, is that even for low levels of maternal education, household assets, and paternal employment, the interventions indicated significant increases in child development, child growth, and parenting outcomes.

However, neither program had a significant effect on reducing maternal depression, a component that should be further studied. This is particularly true given the contrasting positive results on maternal depression achieved through a remote Reach Up and Learn-based program in Jordan.

Why this matters: The successful enhancement of the home learning environment and parenting practices through both remote and hybrid parent-targeted interventions underscores the importance of caregiver support in child development. Strengthening caregiving practices can be achieved independent of the caregivers' backgrounds. However, additional research is needed to effectively address maternal depression.

ROHINGYA AND HOST COMMUNITY SUB-GROUP ANALYSES

Data were analyzed separately for camp and host community locations. While smaller sample sizes limit the ability to detect statistical differences, the following categories showed some interesting trends and differential effects:

Child Development: Similar trends were observed for both communities. The remote intervention improved language development only in host communities, while the hybrid intervention improved cognitive and language development in both settings.

Parental Outcomes: Both communities improved significantly in home stimulation. Parenting practices improved significantly with the hybrid model in camps, and with the remote model in host communities.

4. These nutritional indicators are: weight-for-age, height-for-age, and head circumference-for-age.

Cost Efficiency and Effectiveness

Gindegi Goron's cost-effectiveness was evaluated by comparing the remote-only and hybrid interventions' impacts on children's cognitive, language, and physical development. The remote intervention cost $98 per child. Adding monthly home visits doubled the cost to $203 per child. These costs do not include the IVR content development or start-up costs.

If cognitive and language gains are the primary intended outcomes for future iterations of Gindegi Goron, **the remote intervention is more cost-effective than the hybrid**, given the promising impact and comparatively low cost per child.[5] The IRC could reach two children with the remote program for the cost of treating one child from the hybrid program.

> Every additional $1 invested in quality ECD programs yields returns of $6-17
>
> According to the World Bank

To maximize cost-efficiency, doubling the number of households, served by the remote intervention could reduce the cost per child by 45%, from $98 to $54.[6] This estimated cost reduction can be achieved by spreading fixed costs across more clients and obtaining bulk discounts on supplies. Achieving scale is feasible by supporting this type of intervention through the Bangladesh Joint Response Plan or the Ministry of Health.

Unfortunately, there is no comparative cost data available for Bangladeshi ECD programs benefiting Rohingya or host communities. However, a multisectoral program in Bangladesh implemented by BRAC evaluated the cost of integrating nutrition, nutrition-sensitive agriculture, and gender at $157.11 in annual incremental costs per household.

While the hybrid model did not show benefits significant enough to justify double the cost, the breakthrough research which shows a **positive relationship between weight-for-height growth and responsive caregiving makes this an optimal area for improving future costing decisions.** In 2012, Save the Children estimated the cost of $165-1344 per child in Bangladesh. Given high treatment costs and the potential weight-for-height effects of ECD programming, these programs can support preventing or treating malnutrition, making it more cost-effective.[7]

The short-term costs of such an intervention must also be weighed against its long-term benefits, as effective ECD interventions can reverse the economic impact of stunting. Stunting in early childhood reduces a child's future earning potential by 26%, creating intergenerational cycles of poverty. Yet children who receive effective ECD interventions earn 25% more as adults, directly contributing to long-term economic growth and stability.

Why this matters: Despite growing evidence of the positive impact of ECD programs, research on cost-efficient and effective delivery methods is limited, especially in conflict and crisis-affected areas. Cost data fills an important gap in the humanitarian response field, and are crucial for making informed decisions about resource allocation and program design. It is important to underscore that the cheapest programs are not always the most effective or impactful.

COST BREAKDOWN

Program Reach: Costing data was based on the analysis of 1,268 child-caregiver pairs with a total spending of $192,196 over six months. The remote program cost $60,931 for 622 households, while the hybrid program cost $131,660 for 646 households.

Staffing: National staff costs comprised 57% of remote and 42% of hybrid intervention spending. National staff time makes up 77% of the additional cost to implement home visits. Quality staffing is a key determinant of program impact.

Supplies and Activities: Accounted for 36% of remote and 25% of hybrid program costs. Home visits make up 37% of the hybrid program's total supplies and activities spending, including ECD kits distributed to households.

Support Costs: Operational costs comprised 35% of total project spending. This is slightly higher than the average IRC project due to higher staff support costs and a smaller country program budget.

5. Cost-effectiveness refers to the cost per research outcome. For example, cost per change in cognitive or language scores per child, directly caused by the researched intervention.
6. Cost-efficiency refers to the cost per output. For example, the cost per child reached or the cost per caregiver reached by an ECD program.
7. While neither of the BRAC or Save the Children estimates provides a 1:1 comparison given the different program inputs and analysis methodologies, it demonstrates comparability for the cost range.

Applying Gindegi Goron Evidence to Future Investments

The Gindegi Goron RCT results provide compelling evidence for the effectiveness of health and nutrition interventions in improving child survival, development, and caregiving in crisis settings. When designed appropriately, responsive caregiving can improve weight, height, and head circumference to reduce stunting. The program demonstrates powerful potential for key growth metrics for children at the highest risk of poor nutrition outcomes.

The success of Gindegi Goron demonstrates the potential for scaling such interventions in other humanitarian settings. It underscores the importance of cost-effective models to reach vulnerable populations in crisis and conflict, achieved through contextual co-design with the communities themselves. Due to the promising results, the IRC will expand Gindegi Goron to Rangabali, Patuakhali in southern Bangladesh, empowering caregivers and enhancing nurturing practices in collaboration with local and government partners.

Based on the evidence from Gindegi Goron, we put forward the following takeaways for donors, governments, and implementors:

INVEST through long-term, flexible funding in humanitarian settings to ensure adaptability to changing needs.

Focus on Undernourished Children: Given the hybrid-model impact on physical growth, prioritize investments that reach the furthest behind.

Enhance Training Programs: Invest in comprehensive ECD training programs for facilitators and health workers through both remote and in-person delivery methods.

Caregiver and Community Integration: Allocate funds to empower community members to be part of program processes. This requires ample time for community co-design, message adaptation, and flexible delivery methods.

RESEARCH in humanitarian settings must be prioritized. This is essential to ensure that resources are allocated efficiently and effectively towards evidence-based solutions.

Comparative advantages of delivery modality, reach, implementor, cycle length, and location: Conduct further research to identify long-term factors in ECD programs that enhance health and nutrition outcomes—including adding wasting measurement in future ECD studies—with a focus on impact and associated costs.

Impact on maternal depression: Explore interventions to address maternal depression. Mitigating this can enhance gender equality outcomes.

Understanding what works, for whom, at what cost: Conduct sub-group analyses to understand impacts on different demographic groups, such as host communities, camp settings, or internally displaced people. And children, parents, and grandparents. This helps tailor best practices by age, gender, and location.

SCALE remote and hybrid ECD programs to (cost-effectively) set up the next generation for success, even in the most challenging contexts.

Innovative approaches to reach vulnerable communities: Leveraging digital and audio solutions can cost-effectively reach many families, covering hard-to-reach areas and supplementing costlier in-person services like home visits and group sessions.

Holistic, integrated programming and policies: Use limited resources to comprehensively address cognitive and language development alongside physical growth, nutrition, and caregiver well-being.

Local approaches embedded in cultural relevance: Programs must address contextual barriers, leveraging existing local infrastructure and services to drive solutions. This will require contextualization but will enhance the reach, sustainability, and therefore impact of the interventions.

Before the program, I never heard about the benefits of playing with children. I used to get angry when I saw children playing instead of studying. When I started receiving audio messages from this program, I grew interested to learn more. I often attended the home-visit sessions where an IRC ECD facilitator showed my daughter-in-law how to make toys with materials we have at home, like paper. This really encouraged me and now I try to play with my grandchild whenever I get time.

- Nurul Islam, Grandfather

Conclusion

The Gindegi Goron program can serve as a model for future ECD interventions in crisis settings, demonstrating that empowering caregivers is a powerful, cost-effective strategy. This approach lays the groundwork for sustainable, long-term improvements in child health, nutrition, and well-being. The insights gained from this program can inform and inspire similar initiatives globally, ensuring that vulnerable children everywhere have the opportunity to thrive.