



Photo Credit: Jean Hatem, IRC

EDUCATION COST-EFFECTIVENESS BRIEF – Remote Early Learning Program

Lebanon | 2022

Executive Summary

In 2022, the International Rescue Committee (IRC) implemented the Remote Early Learning Program (RELP) in partnership with Sesame Workshop (SW) as part of the Ahlan Simsim initiative. RELP delivered early childhood education to households with children aged 5-6. From March to June 2022, RELP reached 1,015 children across four regions in Lebanon.

An impact evaluation of the Remote Early Learning Program was led by Global TIES for Children at New York University, in collaboration with the IRC and Sesame Workshop research teams. The evaluation included a cost effectiveness study, conducted by the Center for Benefit-Cost Studies of Education at University of Pennsylvania and IRC's Best Use of Resources team. The IRC-led analysis of the cost to the implementing partner is the focus of this brief. Cost to caregivers is also described. This analysis examines the costs of implementing two treatment arms during an impact evaluation of this program: RELP alone and RELP plus Ahlan Simsim Families (RELP+ASF), a parenting support program.

The cost to implement RELP was \$260 per child, while the cost to implement RELP+ASF was \$550 per child. The IRC spent \$132,670 to implement RELP, and a total of \$272,487 to implement RELP+ASF. The largest cost difference between RELP and RELP+ASF results from the programs' spending on National Staff.

RELP+ASF is not a cost-effective combination of programs. Adding the ASF program to RELP reduced the magnitude of impacts on child development while doubling the cost. RELP alone appears cost-effective compared to in-person preschool. RELP+ASF is not cost-effective and should not be implemented again using this model, but it may be worth testing other forms of caregiver support to accompany RELP given the large role of caregivers in this program.

Project Description

Ahlan Simsim is a ground-breaking initiative from the International Rescue Committee (IRC) and Sesame Workshop (SW), that delivers critical early learning and nurturing care to children and caregivers affected by conflict and displacement across the Middle East. The initiative works by combining a localized version of *Sesame Street* and direct service support to families in Jordan, Lebanon, Iraq, and Syria, and has been made possible through generous funding from the John D. and Catherine T. MacArthur Foundation and the LEGO Foundation. As part of this initiative, the IRC developed RELP to address the lack of access to early childhood education (ECE) for conflict-affected populations and targeted children in hard-to-access areas of Lebanon. Syrian refugees comprised the majority of clients served. RELP delivered early education to children ages 5-6 by equipping their caregivers with activities to do in the household, and targeted households in Bekaa, Baalbek, Tripoli, and Akkar. A randomized control trial of this program examined the impact of RELP alone and RELP+ASF compared to the waitlist control group, which received program services once both treatment arms were complete. This brief analyzes the cost-effectiveness of the program.

RELP was an 11-week program, implemented from March to June 2022. RELP aimed to:

- *Improve early child development:* Using a low-cost and low-tech method, caregivers, with the help of facilitators, provided children ages 5 to 6 with high-quality, remote early childhood education.
- *Improve caregiving well-being:* In addition to offering children a remote preschool program, RELP provided remote caregiving support in one additional session per week via the Ahlan Simsim Families (ASF) program. Sessions focused on responsive relationships, early learning, safety, and security, child and caregiver stress management, and caregiver well-being. ASF was meant to support caregivers both in implementing ECE activities with children for RELP and in improving their overall ability to support children's development in the future.

Remote Early Learning Program (RELP)

- Caregivers attended remote group WhatsApp calls led by teachers, trained in early childhood education (ECE).
- Sessions ran 2-3 times per week for 11 weeks. Each session was 40 minutes on average, with individual caregiver follow-up calls as needed.
- RELP focused on teachers supporting caregivers to implement ECE activities with children, with minimal direct teacher-child engagement.
- Sessions included a total of 180 activities for caregivers to do with children at home.
- To support activities, facilitators shared Sesame Workshop and IRC-designed multimedia content during and between sessions via WhatsApp, including videos, songs, pictures, and infographics.
- The IRC provided kits learning materials to us in activities, including worksheets, storybooks, arts supplies, and stationery.
- Caregivers shared WhatsApp messages and pictures showing their children doing activities, to confirm implementation and create space for caregiver discussion between sessions.

Ahlan Simsim Families (ASF)

- Roughly half of the caregivers who participated in RELP also participated in the remote parent support program (ASF).
- During the 11 weeks of RELP implementation, caregivers met for one additional WhatsApp group audio call session each week, for a total of up to 11 sessions. Only 8 of the 11 sessions were mandatory.
- Each session ran for 25-30 minutes.
- ASF focused on responsive relationships, early learning, and safety and security.
- To complement calls, facilitators shared Sesame Workshop and IRC-designed caregiver-focused multimedia content between sessions via WhatsApp. This content included 1 poster and 15 videos.

- Demonstrate the use of flexible, user-centered and culturally relevant programs with media integration in supporting child development outcomes.

The impact evaluation for RELP, conducted by NYU Global TIES for Children, used a three-arm randomized controlled trial, mixed methods approach. Findings were based primarily on quantitative data collected remotely using caregiver surveys administered by phone and the International and Development and Early Learning Assessment tool (IDELA) administered through WhatsApp video calls,¹ at both baseline and endline. Conclusive findings were then based on analysis conducted by NYU Global TIES for Children.

Key outcomes from the studying program implementation show:

- RELP design, featuring media content integration, successfully supported a range of child development outcomes, with substantial impacts on child language, numeracy, and social-emotional development with comparable effects to a year of in-person preschool, strengthening child's learning at school and at home, and supporting lifelong positive outcomes for children's holistic development.
- The educational program – the *Ahlan Simsim* TV program - boosted children's emotional development and coping.
- Ahlan Simsim partners developed global tools and measures to ensure that the quality of services was sufficient to drive impact on caregivers and children
- The program's approach, curricula, and learning and media materials are being used widely by partner organizations and national ministries across the Middle East.

For additional information on the study and its conclusions, please see [here](#).

Project Costs

This brief examines the costs associated with implementing RELP and ASF. Both IRC costs to implement and caregiver opportunity costs to participate are included in the cost analysis to provide a full cost estimate. IRC's Best Use of Resources (BUR) team calculated the cost to the implementing organization through financial data and time and effort allocations, and the University of Pennsylvania's Center for Benefit Cost Studies of Education (CBCSE) calculated the cost to the caregiver by collecting data through caregiver surveys. Using comparable methodologies, BUR and CBCSE were able to pair their results together for a social cost analysis.

These cost estimates exclude research costs, the spending incurred during the five-month start-up period from September 2021 to January 2022, and content development and production costs incurred by both the IRC and Sesame Workshop. Research costs are never included in IRC cost analyses, as the cost of

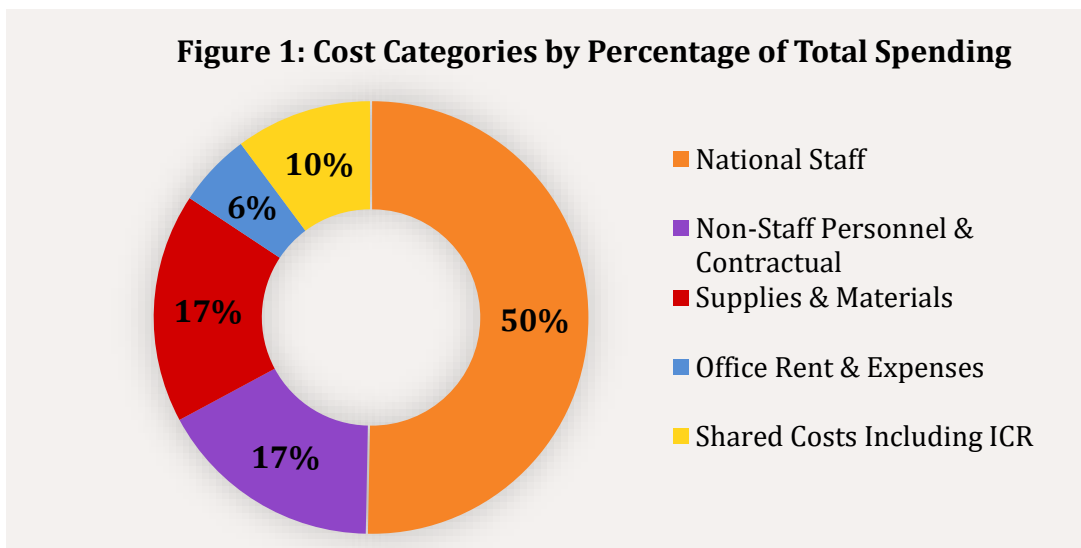
¹ Schwartz, K, Michael, D, Torossian, L, Hajal, D, Yoshikawa, H, Razzak, S, Youssef, J, Sloane, P, Hashwe, S, Foulds, K, Bowden, AB, Hoyer, K, Lee, S, Haywood, A, & Behrman, J. (in press). Leveraging caregivers to provide remote early childhood education in hard-to-access settings in Lebanon: Impacts from a randomized controlled trial. *Journal of Research on Educational Effectiveness*.

research is not incurred for standard programming. Including research costs would result in an inflated cost of programming. Video production costs incurred by Sesame Workshop, and content design and adaptation by IRC, were excluded from the analysis because it is anticipated to be a one-time cost that would not be incurred for future rounds of implementation. Future iterations would leverage the existing content.

IRC Cost to Implement

RELP reached 1,015 child-caregiver pairs. 514 child-caregiver pairs received RELP only and 501 pairs were provided RELP+ASF. \$405,171 was spent in total for the 11-week implementation. The RELP only treatment arm cost \$132,670, while the RELP+ASF program spending totaled \$272,487.

The largest cost category was program National Staff (50%) which includes program, Monitoring, Evaluation, Accountability & Learning (MEAL), and Research, Monitoring, Evaluation & Learning (RMEL) staff used to implement the RELP and ASF programs (Fig. 1).



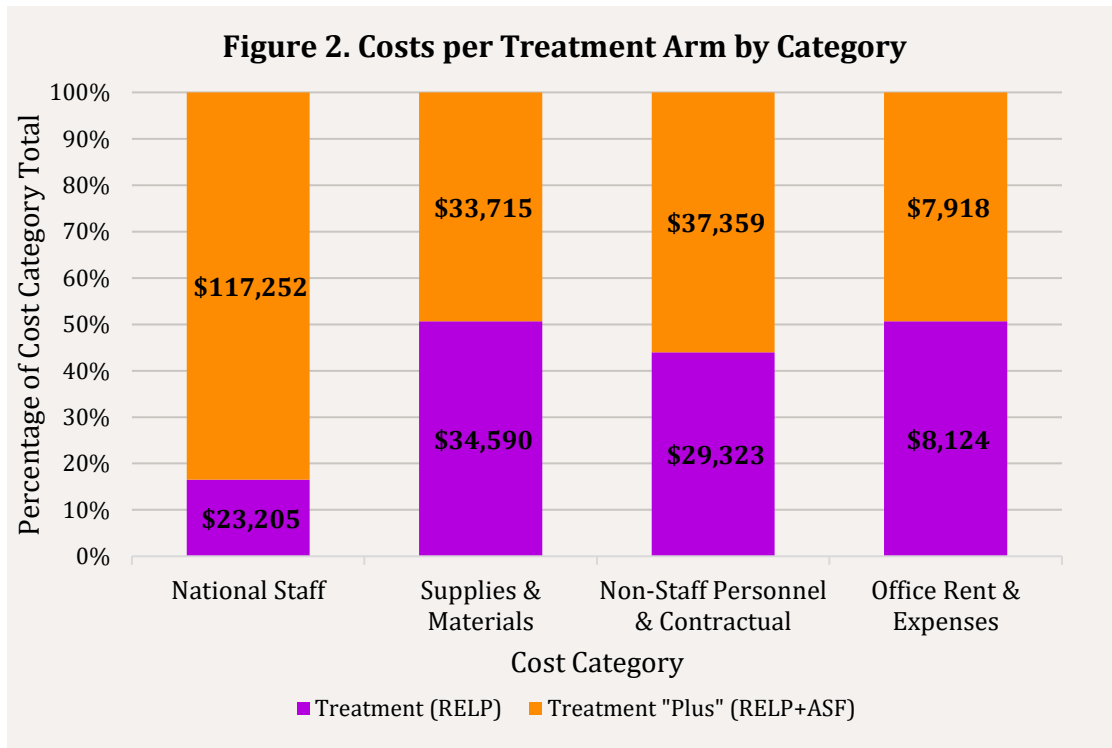
Overall, National Staff was the largest cost category, driven by the National Staff-heavy implementation of the added ASF program. National Staff contributed 43% of the costs to implement ASF on top of RELP. While National Staff was the largest cost category attributed to the RELP+ASF program implementation, Supplies & Materials was the largest spending category of RELP (treatment), making up 26% of total RELP costs (Figure 2).

The largest individual cost of RELP+ASF programming was program materials including phone data recharge cards, learning kits distributed to families, and printing materials, costing \$68,000 (17% of total spending across both treatment arms). This is expected, as a core component of RELP required tangible materials that caregivers could incorporate in activities with children to better facilitate at-home learning.

Non-Staff Personnel was the second largest cost category (~17% of total spending), which includes the costs of Lebanese teachers and facilitators. Non-staff personnel are incentive workers and do not receive

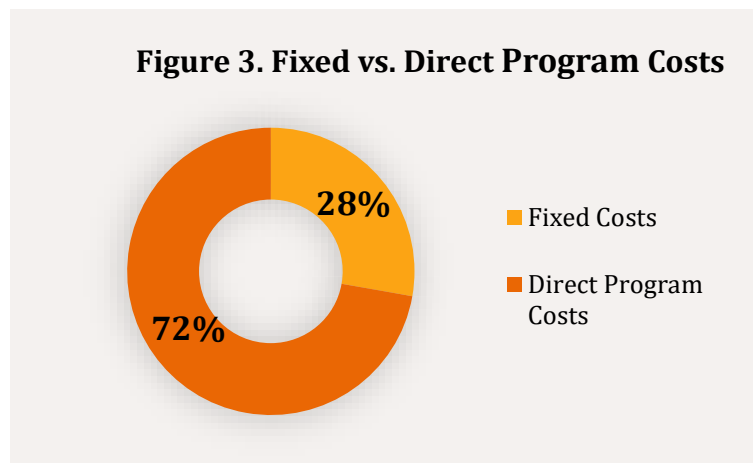
benefits. If the program was implemented using full-time staff, we would expect the total program cost to increase as a result.

The costs driving RELP programming were expected due to its low staff support implementation model and remote modality. Teachers ran virtual classrooms and parent sessions, however, outside of sessions, caregivers provided ongoing support to their children and heavily relied on the kits distributed to them to carry out ECE activities at home with children. Similarly, the costs driving ASF programming were expected as it required more staff (facilitator) time to lead the parent support sessions and involved few supplies.



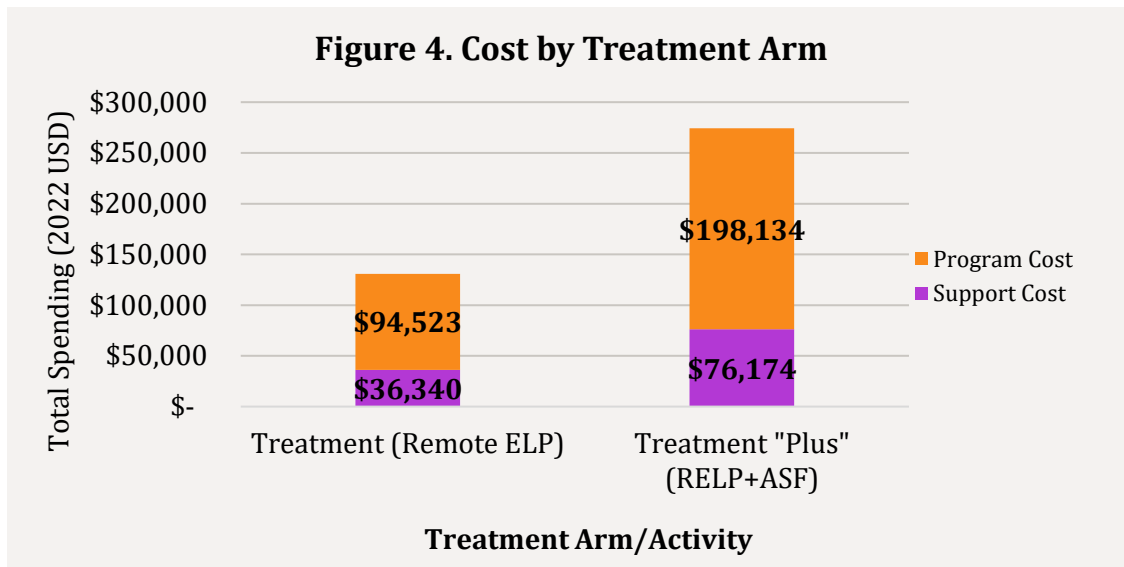
28% of the total spending was on IRC Lebanon operation support costs. The direct program costs for RELP and ASF were 72% of total spending (Figure 3).

The cost-effectiveness analysis calculated the cost to IRC to implement the program and the opportunity cost to caregivers to participate. IRC's Best Use of Resources (BUR) team calculated the cost to the implementing organization through financial data and time and effort allocations, and the University of Pennsylvania's Center for Benefit Cost Studies of Education (CBCSE) calculated the cost to the caregiver by collecting data through caregiver surveys. The shared IRC Lebanon costs are a necessary expense to keep country offices operational to facilitate program implementations. It includes costs such as field offices across the four locations, finance staff, procurement, and human resources. These resources are not directly attributable to one program, rather, they support all programs in that office. As a result, a portion of the shared costs is included in every analysis. The percentage included is based on the total spending for the analyzed activities, divided by the total overall program spending in the analyzed budgets during the same time frame. The average support cost percentage of an IRC program is 25-33% of total spending. The RELP results fall within this standard range.



Remote Early Learning Program alone costs \$260 per child, while RELP plus Ahlan Simsim Families (RELP+ASF) costs \$550 per child, not including the cost to caregivers.

By calculating the discrete costs of each activity (Figure 4), IRC can understand the allocation of resources for future iterations of the program. Combined with data on the relative effectiveness of different activities from the impact evaluation, we can draw conclusions about which package is likely to be the most cost-effective at improving early childhood education remotely, especially among refugee populations in hard-to-access regions and areas with little to no access to ECE.



Caregiver Costs

The cost of caregiver time to receive the intervention phone calls and implement at-home activities with their children is an added \$50 per child for RELP and \$60 for RELP+ASF.

Caregivers' time is a key ingredient for both RELP and RELP+ASF delivery. Therefore, the time they spent on RELP and ASF calls, one-on-one follow-up calls, RELP ECD activities, and ASF activities was calculated and monetized by CBCSE using a weighted (pre-inflation) minimum wage of 1.25 and 2.75 USD/hour (for Syrian refugee workers and Lebanese workers respectively). This approach considers that, post-inflation, this wage was out of range for most if not all the families in this study as this sample was experiencing extreme economic hardships. Roughly 38 hours of caregiver time was observed per household for RELP, and 47 hours of incremental caregiver time for RELP+ASF, over the 11-week program period.

Including costs to caregivers, program costs were estimated at \$310 per child for RELP and \$610 per child for RELP+ASF (with caregiver time representing 17% and 10% of those costs, respectively).

The cost of caregiver time spent on the RELP and RELP+ASF does not change significantly, even when different estimates for the value of caregiver time are used.

The sensitivity of the cost estimate to the choice of "time cost" was also assessed, by substituting the hourly pay of RELP teachers in place of minimum wage. Using the teacher hourly rate of 5.25 USD reflects an upper bound for the value of caregiver time and allowed researchers to consider the cost of hiring someone to provide ECE directly to children, instead of mobilizing caregivers to carry out intervention activities at home.

Results of the Impact Evaluation

Child Development and Play – Both RELP and RELP+ASF had positive, statistically significant effects on child development and play. The study found that RELP compared to the control showed a 0.45 effect size for overall child IDELA; 0.49 for literacy; 0.45 for numeracy; 0.36 for social-emotional skills; 0.21 for motor skills; and 0.29 for child play. For RELP+ASF, the study found effect sizes of 0.26 for overall IDELA, 0.37 for literacy, 0.32 for numeracy, 0.35 for child play, and no impact on social-emotional or motor skills. No statistically significant difference between RELP and RELP+ASF was found for any outcome. Overall, both activities had positive effects on child development and play.

All results were statistically significant at the $p < 0.1$ level

Cost-Effectiveness Findings

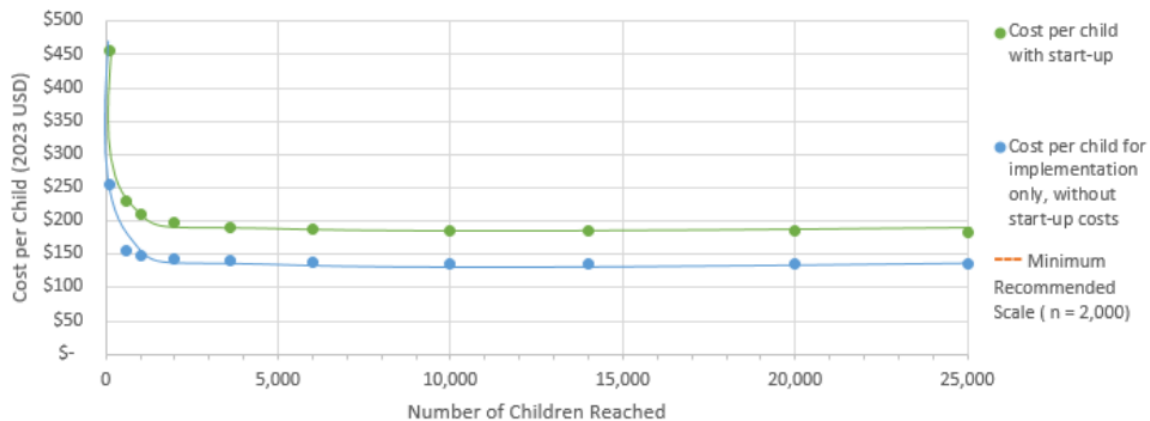
RELP alone provides better outcomes for children, coupled with a lower cost per child.

The most cost-effective package of services included early childhood education (ECE) Home Kits, remote sessions, and regular individual follow-up calls with parents as needed without the ASF parent support program. The impacts of this fully remote, WhatsApp-based, caregiver-focused ECE intervention for children about to begin primary school in Lebanon, was a cost-effective solution to low rates of ECE in harder to-access areas. It successfully put caregivers in a position to follow a preschool curriculum and conduct high-quality early learning activities at home with their children, regardless of their education and literacy levels.

A scenario model analysis of the Remote Early Learning Program suggests that returns to scale level off at 1,000 children. In other words, the cost per child does not vary a great deal as the scale increases past 1,000 children (Figure 5), which suggests that the cost efficiency at a scale of 1,000 vs at a scale of 25,000 is roughly the same. As a result, IRC maximizes the use of its resources as long as it reaches at least 1,000 children. Although costs start to level off at 1,000, we see higher returns to scale at 2,000 as costs are consistently below \$200 per child past this point. Overall, this scenario model analysis indicates that the cost per child for 11 weeks of RELP implementation, in Lebanon, will be ~\$211 if IRC reaches 1,000+ children, including start-up costs. Without start-up costs, the cost per child is expected to decrease to ~\$148 for 100% cost coverage of recharge and teacher salaries for 1,000+ children reached.

Figure 5. RELP Scenario Model: Average Cost per Child Across Scale

100% Recharge cards, 100% Teacher Salaries



The cost of RELP is within the range of other ECE programs (\$60 per child² to \$669 per child³) evaluated in low- and middle-income countries, and is still lower than many in-person programs, making it more cost-effective to implement and more accessible for those with few or no in-person ECE options for their children. Despite the small pool of evidence available on the effectiveness of shorter-term ECE programming, especially in the MENA region, it is helpful to consider the findings of the evaluation of a 12-week accelerated summer ECE program in Mozambique (Bonilla et al., 2019). This early childhood education (ECE) intervention, motivated by similar concerns of high primary school dropout rates and poor learning outcomes, targets children preparing to enter school and provided 120 hours of in-school programming for children and 12 weeks of parent-to-parent learning sessions. Furthermore, this accelerated school readiness program reached 2,700 children and costs \$60 per child, but it is not clear if the cost includes implementing partners' overhead costs. Researchers found positive impacts on child development, supported by reports from teachers and parents, as well as a 12 percentage point increase in school attendance. Overall, this stresses the success of shorter ECE programs, especially in low-resource communities.

Implemented together, RELP + ASF is not cost-effective due to its high cost and lack of significant impact on early child development outcomes.

Given that the outcomes were lower on all statistically significant metrics for the treatment “plus” arm, in combination with a significantly higher cost per child, RELP + ASF is not cost-effective when implemented together.

With the Remote Early Learning Program, there is a potential of seeing returns to scale by spreading fixed costs over more children and families, and in turn, a greater potential to further improve ECE outcomes.

The cost-efficiency of the program, and therefore the cost-effectiveness, is highly dependent on the number of clients reached using a static number of resources. Implementing on a larger scale, and identifying more child/caregiver dyads, without significantly increasing the total spending, would allow for a better cost-effectiveness ratio.

The costs of this program do not currently include content development or start-up costs. Therefore, were this program to be implemented in a different context or region, start-up costs, such as translation or cultural adaptation of content, may need to be taken into account when replicating this program. Additionally, these costs would need to be considered if the content is developed for a smaller-scale program, as these development costs could take up a larger percentage of total program spending potentially leading to lower cost efficiency. It is also ideal to include start-up and content development costs when they both directly contribute to only one program, rather than various programs being implemented across one organization or partner. This way, hypotheses made related to program replication will be most accurate as they include costs at all stages.

² Bonilla, J., Spier, E., Carson, K., Ring, H., Belyakova, Y., Brodziak, I., & Adelman-Sil, E. (2019). *Evaluation of the UNICEF Mozambique Accelerated School Readiness Pilot Programme: Final Report*. Washington, DC: American Institutes for Research.

³ Berkes, J., Bouguen, A., Filmer, D., & Fukao, T. (2019). *Combining supply- and demand-side interventions: Evidence from a large preschool program in Cambodia*. World Bank.

RELP has proven just as impactful as traditional in-person preschool programs.

The impacts of this short remote program prove to be in the range of impacts found for more traditional in-person preschool programs, despite their difference in modality. Taking into account that it is not always clear what studies include/exclude in their program cost breakdown and the differences in sample size, program resources, education policies, and program length, the Mozambique study⁴ serves as an example of an in-person preschool program that yielded similar impacts to RELP, with lower impacts on emergent literacy, higher impacts on emergent numeracy and motor skill development, and no impact on social-emotional skills.

RELP and ASF costs can vary substantially across different contexts, despite how similar program components may remain.

All costs are specific to the Lebanese context. Even if the 'ingredients' required to run an effective remote early learning intervention stay the same across different contexts, the cost of inputs will differ, leading to varied cost results. A separate comparative analysis of 11 implemented iterations of ASF, across the MENA region, resulted in a variation of \$6-\$600 in the cost per client. As a result, program teams must be guided by the ingredients required and input costs in their context (see Ingredients List in annex) when planning future programs. Transparent and detailed cost data, in addition to the publication of final cost-effectiveness results, is critical to make such detailed reflection possible.

⁴ Bonilla, J., Spier, E., Carson, K., Ring, H., Belyakova, Y., Brodziak, I., & Adelman-Sil, E. (2019). *Evaluation of the UNICEF Mozambique Accelerated School Readiness Pilot Programme: Final Report*. Washington, DC: American Institutes for Research.

Analysis Method: Cost-Effectiveness at the IRC

The IRC is committed to maximizing the impact of each dollar spent to improve our clients' lives. Cost-effectiveness analysis compares the costs of a program to the outcomes it achieved (e.g., cost per diarrheal incident avoided, cost per reduction in intra-family violence). Conducting cost effectiveness requires two types of information:

- 1) An impact evaluation on what a specific program achieved, in terms of outcomes.
- 2) Data on how much it cost to produce that outcome.

Teams across the IRC produce a wide range of outcomes, but cost-effectiveness analysis requires that we know - based on impact research - exactly which outcomes were achieved and how much they changed, for a given program. For example, an impact evaluation might show a village that received IRC latrines and hygiene promotion had a 50 percent lower incidence of diarrhea than a village next to it which did not receive the IRC intervention. If so, we know the impact of our program: a 50 percent decrease in diarrhea incidence. Cost-effectiveness analysis is possible only when there is an impact study that quantifies the change in outcomes as a result of IRC intervention.

As such, IRC gathers data on how much the evaluated program costs when implementing impact evaluations. First, IRC staff build a list of inputs that were necessary to implement the evaluated program. If one thinks of a program as a recipe, the inputs are all the 'ingredients' necessary to make that dish. Budgets contain a great deal of information about the ingredients used and in what quantities, so reviewing the program budget is the first place to start. However, many of the line items in grant budgets are shared costs, such as finance staff or office rent, which contribute to multiple programs, not just the one included in the impact evaluation. When costs are shared across multiple programs, it is necessary to further specify what proportion of the input was used for the particular program. Specifying such costs in detail, while time-consuming, is important because it provides lessons about the structure of a program's inputs. We can divide costs into categories and determine whether resources are being allocated to the most important functions of program management, enabling us to model alternative program structures and quantify the cost implications of different decisions.

A full explanation of the IRC's cost analysis methodology can be found here: www.rescue.org/report/cost-analysis-methodology-irc

More on IRC's costing work can be found at rescue.org/cost-analysis



The cost to the implementing organization was led by the Best Use of Resources team at the IRC. The University of Pennsylvania team led the cost to client analysis. For questions or more information please contact us at costanalysis@rescue.org.

Preferred Citation

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Impact evaluation, led by Global TIES for Children at New York University, in collaboration with the IRC and Sesame Workshop research teams:

Schwartz, K, Michael, D, Torossian, L, Hajal, D, Yoshikawa, H, Razzak, S, Youssef, J, Sloane, P, Hashwe, S, Foulds, K, Bowden, AB, Hoyer, K, Lee, S, Haywood, A, & Behrman, J. Leveraging caregivers to provide remote early childhood education in hard-to-access settings in Lebanon: Impacts from a randomized controlled trial. (Under review)

Other citations:

Berkes, J., Bouguen, A., Filmer, D., & Fukao, T. (2019). Combining supply- and demand-side interventions: Evidence from a large preschool program in Cambodia. World Bank.

Bonilla, J., Spier, E., Carson, K., Ring, H., Belyakova, Y., Brodziak, I. & Adelman-Sil, E. (2019). Evaluation of the UNICEF Mozambique Accelerated School Readiness pilot programme: Final report. Washington, DC: American Institutes for Research.



GENEROUS SUPPORT FROM



The LEGO Foundation

Annex: Ingredients List**Lebanon | 2022 USD**

Program Costs	RELP (Treatment)	RELP+ASF (Treatment "Plus")	Total
National Staff	\$23,205	\$117,252	\$140,457
ECD Coordinator	1,177	3,471	4,648
ECD Senior Program Implementation Manager	803	4,484	5,287
ECD Senior Quality Manager	724	3,567	4,291
ECD Program Officer	377	739	1,116
ECD Program Assistant	275	540	815
ECD Drivers (Beirut, Bekaa, Akkar, Tripoli)	630	11,407	12,037
ECD Senior Quality Officer (4)	1,343	8,823	10,166
ECD Assistants- Beirut, Bekaa, Akkar, Tripoli	1,077	13,812	14,889
ECD Facilitator -WPE Center Arsal and Akkar	-	8,439	8,439
ECD Field Manager- Beirut, Bekaa, Akkar, Tripoli	1,464	7,785	9,248
RMEL Senior Manager	2,335	6,886	9,221
Senior Research Officer	2,513	3,442	5,955
MER Officer-Bekaa, Akkar, Tripoli	3,076	9,073	12,149
IM Assistant-Bekaa	903	2,664	3,568
Accountability Manager	258	762	1,021
Feedback and Complaints Officer	125	368	493
Insurance, Training & Capacity Building	6,124	30,991	37,114
Non-Personnel & Contractual	\$29,323	\$37,359	\$66,681
Lebanese Teachers (Research-Child)	25,744	25,093	50,838
Facilitators (Research-Caregivers)	3,578	12,266	15,844
Travel	\$587	\$572	\$1,159
Airfare	587	572	1,159
Office Rent & Expenses	\$8,124	\$7,918	\$16,042
Office Rent/Utilities/Maintenance	6,361	6,200	12,561
Software	822	801	1,624
Warehouse Rent	940	917	1,857
Supplies & Materials	\$34,590	\$33,715	\$68,305
ECD Kits, Materials, Printing and Recharge Cards	34,590	33,715	68,305
Shared Costs	\$36,842	\$75,671	\$112,513
TOTAL	\$132,670	\$272,487	\$405,157
Cost per child (RELP n=514, RELP+ASF n=501)	\$260	\$550	
Cost per Child (Including cost to caregiver)	\$310	\$610	