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Implementation research for early childhood development programming in humanitarian contexts

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Young children living in conditions of war, disaster, and displacement are at high risk for developmental difficulties that can follow them throughout their lives. While there is robust evidence supporting the need for early childhood development (ECD) in humanitarian settings, implementation of ECD programming remains sparse, largely due to the lack of evidence of how and why these programs can improve outcomes in humanitarian settings. In order to build the evidence base for ECD in humanitarian settings, we review the current state of implementation research for ECD programming (targeting children 0–8) in humanitarian settings, through a literature review and a series of key informant interviews. Drawing from existing frameworks of implementation research and the findings from our analysis, we present a framework for ECD implementation research in humanitarian settings and propose an agenda for future research.

Keywords: early childhood development; implementation research; humanitarian; conflict; crisis; emergencies

Introduction

Disaster, war, and the chaos of forced migration threaten children's development and inhibit their ability to thrive and become healthy, happy, peaceful and productive adults.[1–4] More than 16 million children were born into situations of conflict and crisis[a] in 2015 alone—one out of every eight children born around the world.[5] Without critical early childhood development (ECD) programming[b] to protect and buffer children from the negative consequences of conflict and crisis, an entire generation is at risk of poor developmental outcomes that may follow them throughout their lives: lower academic achievement, reduced economic earnings, and lower levels of physical and mental health.[1,6] Despite the mounting evidence on effective interventions to strengthen the resilience of young children and families living in adversity, the humanitarian[c] system, which provides essential life-saving assistance to millions of people each year, has failed to prioritize ECD. Building the case for why and how early childhood programming should be a core component of the humanitarian response demands clear evidence highlighting not only which ECD programs are effective, but importantly *why*, *how*, and *in which* contexts, settings and populations these programs effectively operate. Implementation research, which explores program implementation characteristics and processes, can provide critical insights in response to these questions, and inform

[a]The term *crisis* includes natural and man-made disasters resulting in danger, instability, and insecurity affecting individuals, families, communities, and societies. In this article, *conflict* and *crisis* are used interchangeably with the term *humanitarian setting*, as defined above.

[b]For the purpose of this article, ECD Programming is an initiative that includes an explicit focus on responsive caregiving and/or early learning, as defined in the 2017 *Lancet* series on ECD.

[c]The term *humanitarian setting* draws from the definition from the Sphere standards, which describes humanitarian action as taking place in "a range of situations including natural disasters, conflict, slow- and rapid-onset events, rural and urban environments, and complex political emergencies in all countries" (The Sphere Project, 2011, p. 9).

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our understanding of both variation in program impacts and approaches to quality improvement to maximize effectiveness. We propose an agenda for implementation research for ECD programming in humanitarian settings. We begin with a brief rationale for implementation research on ECD programs in humanitarian settings, followed by an analysis of the current state of evidence and practice, gathered through a literature review and a series of key informant interviews. Finally, we present a framework for ECD implementation research in humanitarian settings followed by recommendations for research that can inform future policies and practices to improve the lives of young children and families living in crisis and conflict (see Box 1).

Box 1. Key messages

- Children living in conflict and crisis settings are at increased risk for developmental difficulties that can follow them throughout their lives.
- Lack of early childhood programming with a focus on responsive parenting and early learning in humanitarian settings can impact future generations, reinforce inequities, and threaten the peace and stability of societies around the world.
- Building the case for why and how early childhood programming should be a core component of the humanitarian response demands clear evidence highlighting not only which ECD programs are effective, but importantly *why*, *how*, and *in which* contexts, settings and populations these programs effectively operate. Yet such research is currently lacking.
- In order to accelerate the learning process for ECD service provision in humanitarian settings, implementing organizations and researchers need to systematically build mechanisms to assess implementation into monitoring and evaluation frameworks as well as impact evaluations and incorporate this critical information into research and quality improvement.

Rationale for implementation research on ECD programs in humanitarian settings

The scarcity of implementation research and high-quality evidence to inform early childhood programming in humanitarian settings relates to the current lack of political prioritization, funding, and practical actions to address the urgent needs of young children in situations of conflict and crisis. This is particularly problematic as the detrimental effects of conflict and crisis are exceptionally acute in the first years of life, when the brain undergoes the most rapid period of development and is extremely sensitive to environmental influence.[7] During this foundational stage of human development, severe and prolonged stress or psychosocial deprivation can affect brain architecture and epigenetic structures that regulate gene expression and influence the physiological response to stress and disease with lifelong implications for physical and psychosocial health.[8,9] In situations of conflict and crisis, risks to young children are compounded: stress is exacerbated through repeated exposures to violence, loss or separation from caregivers, and the damage and deterioration of support systems including government services, schools, and communities.[2,10,11] Young children are particularly dependent on parental and caregiver support as contextual sources of resilience, characterized by the capacity to withstand and recover from significant challenges and adverse experiences.[12–14] Research exploring the role of age and developmental stage at the time of traumatic exposure also suggests that young children are more vulnerable than older children to develop maladaptive responses to stress caused by separation from caregivers, disruption in routines, or violent media reports.[13,15,16]

Responsive care from a consistent, nurturing caregiver can protect and buffer children from the negative effects of conflict and crisis and support their health and development.[7,17] This is particularly critical during the very early years when the child is primarily dependent on primary caregivers, not just for protection and survival, but to help them downregulate arousal. Yet for caregivers living in war and displacement, insecurity, responses to traumatic experiences, a sense of hopelessness, and depression can prevent caregivers from attending to, and positively engaging with their children.[18,19] When caregivers, family members, and community systems are unable to provide young children with nurturing and supportive care, children can experience severe stress and psychosocial deprivation, which can have long-term effects on health, learning, and behavior.[14,20] Experiences of severe, prolonged stress and psychosocial deprivation affect not only the individual child but also can extend to subsequent generations and to the broader community

through biological, behavioral, and socioeconomic processes, leading to the intergenerational transmission of adversity, disadvantage, and violence; the reinforcement of inequities; and threatens the peace, social cohesion, and stability of societies.[3,4,13,18,21]

In addition to the broad body of scientific evidence supporting the need for early childhood programming in humanitarian settings, the international legal framework of the United Nations Convention of the Rights of the Child asserts that all children have the right to health, education, legal registration, and protection from violence, and that these rights begin at birth.[22] Furthermore, there is strong evidence to support the feasibility and high rate of returns for scaling ECD programs in low-resource and high-adversity settings within low- and middle-income countries,[23] yet with the exception of small-scale programs described below, humanitarian responses typically omit programming for ECD. For example, of the total humanitarian funding received in 2016, less than 2% was allocated to education, of which only a small fraction was dedicated to early learning.[24] Several factors inherent to humanitarian contexts contribute to the lack of attention to ECD programs that integrate an explicit focus on responsive caregiving and early learning: (1) the prioritization of survival-focused programming such as health, nutrition, and WASH; (2) high levels of insecurity and instability; (3) short-term funding cycles that restrict opportunities for longer-term programming; and (4) the dearth of evidence on how to select, adapt, implement, monitor, and evaluate cost-effective ECD programs in humanitarian settings. In nonconflict settings, emphases on implementation factors in ECD programming such as quality of caregiving and interactions; workforce training and supports; and aspects of governance and finance have been linked to greater effectiveness.[25,26] Thus, in order to influence policy and practice and ensure ECD becomes a standard feature of humanitarian programming, a robust evidence base for early childhood program implementation in conflict and crisis is urgently needed.

Existing frameworks relevant for ECD programming in humanitarian settings

Building the evidence base for ECD in humanitarian settings requires an analysis of implementation processes, or the program and broader system characteristics that influence outcomes.[27] Understanding these key characteristics is of particular importance when transferring an evidence-based program to a new setting, integrating a program within a public program or specific service delivery platform, or planning for the scale-up of an existing program.[26] A review of over 500 studies included in five meta-analyses representing programs conducted in a broad range of sectors and settings (not including humanitarian settings) found that the level of program implementation affects outcomes in prevention and promotion programs, with mean effect sizes that are two to three times greater than for programs with implementation challenges.[28] While various different frameworks are used to describe the components of implementation, Durlak and DuPre assessed the level of program implementation through an analysis of the following implementation features: fidelity (or adherence to the intended program model), dosage (duration and intensity), quality, participant responsiveness or engagement, program differentiation or uniqueness from other programs, description the nature and amount of services received by the control or comparison conditions, program reach (characteristics of intended population and percentage of intended population that participated), and adaptation of the original program, including level of sensitivity to cultural factors.[28,29]

Durlak and DuPre also examine the contextual factors that influence implementation and present an ecological framework highlighting the importance of community-level factors (including funding), the characteristics and skills of the provider, the compatibility and adaptability of the innovation, the organizational capacity of the delivery system, and the training and technical support system. These general features of implementation provide a useful starting point for understanding and analyzing implementation processes within contexts of crisis and conflict. At the same time, our analysis of the existing state of ECD research in humanitarian settings, presented in the following section, underscores the need for an ECD implementation research framework adapted to the specific factors and considerations of fragility, instability, and insecurity inherent to humanitarian settings and presented in Table 2.

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Present study: investigating existing ECD implementation research in humanitarian settings

In order to understand current practices and challenges associated with ECD implementation research in humanitarian contexts, our investigation included a literature review and a series of key informant interviews. We searched PubMed and Google Scholar using the following terms in the article title or abstract: (*children*, or *child*, or *early childhood*, or *ECD*) and (*humanitarian*, or *war*, or *conflict*, or *emergency*, or *disaster*, or *refugee*, or *displaced*, or *crisis*) and (*program*, or *intervention*, or *treatment*, or *therapy*, or *therapeutics*) and (*evaluation*, or *implementation*, or *impact*, or *effectiveness*, or *efficacy*, or *trial*). Titles and abstracts were reviewed and articles were restricted to English language peer-reviewed evaluation studies with control or comparison groups focused on parenting, caregiving, stimulation, and/or early learning programs targeting children ages 0–8 in humanitarian settings within low- and middle-income countries, published from 2000 to 2017. Descriptive quantitative or qualitative studies of children living in conflict or crisis settings that lacked specific caregiving and/or early learning interventions were excluded. Bibliographies of relevant papers were also reviewed to identify additional sources, and gray literature highlighting program models in relevant contexts was also reviewed.

To complement the literature review, key informant interviews were conducted with practitioners, researchers, and leaders with significant expertise in ECD, implementation research, and humanitarian programming. Purposive sampling was used to select participants, based on the authors' existing knowledge of prominent experts in the field. Participants were also asked to provide recommendations for additional experts. Prior to starting the interviews, participants provided informed consent, and the 45–60 min interviews were conducted by phone or Skype using a semistructured interview guide. Detailed notes were recorded during the interviews and analyzed for salient themes and trends.

Findings and discussion

Literature review

Our database search yielded only four studies that met the search criteria (see Table 1): (1) a group-based psychosocial intervention for mothers of young children (average age 5.5) in postconflict Bosnia;[30] (2) an intervention combining mother–baby groups and home visits for mothers of malnourished infants (aged 6–30 months) through an emergency feeding program for internally displaced people in Northern Uganda;[31] (3) an intervention aimed at reducing young children's stress (aged 2–7) living in a sheltered camp during the second Israel–Lebanon war through the introduction of a stuffed animal (the Huggy-Puppy);[32] and (4) a parenting program comprising group-based sessions and a home visit in postconflict Liberia targeting caregivers of children aged 3–7.[33,34] Additionally, Lloyd and Penn's systematic review of interventions focused on young children (0–8) who are victims of armed conflict conducted in 2010 identified, in addition to studies (1) and (3) listed above, a dissertation study conducted by Paardekooper in 2002 that included a randomized controlled trial of two different psychosocial group-based interventions for South Sudanese refugees (ages 5–16) living in Addis Ababa, Ethiopia.[35,36]

The review of gray literature relevant to ECD in humanitarian settings focused primarily on descriptive accounts of program models,[37] such as UNICEF's ECD kits containing play materials and facilitator guides, formal and informal preschools in refugee settings, among others. A few notable exceptions included a small-scale, qualitative evaluation of the distribution of UNICEF's ECD kits in postearthquake Haiti;[38] a study of Aga Khan Foundation's (AKF) preschools in Northern Afghanistan comparing school readiness prior to grade 1 and academic achievement scores at the end of grade 1 for children who attended AKF-supported preschools compared with children from matched villages who did not attend preschool,[d] which found significant differences between the two groups and large effect sizes;[39] and Save the Children's cross-sectional study of community-based Early Childhood Care and Development (ECCD)-preschool programs in Faryab, Saripol, Kandahar, and Kabul provinces of Afghanistan, which found significant improvements in children's developmental scores for the participants the ECCD program, compared with children

[d]The AKF report did not explicitly mention the reason that children in the matched villages did not attend preschool.

Table 1. Peer-reviewed evaluation studies of early childhood interventions in conflict and postconflict settings

	Bosnia	Northern Uganda	Israel	Liberia
Study design	Randomized controlled trial	Quasi-experimental	Study 1: Quasi-experimental Study 2: Randomized controlled trial	Randomized controlled trial
Context	Postconflict, internally displaced	Conflict-affected, internally displaced	Study 1: Conflict, sheltered camp during the second Israel–Lebanon war Study 2: Affected communities (preschools) a few months postwar	Postconflict
Sample	87 Bosnian mother–child dyads (42 treatment, 45 control) of young children, mean age 5.5	147 mothers (70 treatment, 77 control) of infants aged 6–30 months with severe to moderate malnutrition in emergency feeding centers	Study 1: 74 young children (35 treatment, 39 control) 2–7 years of age; Study 2: 292 young children (191 treatment, 101 control), mean age 4.41 years	270 caregivers of children ages 3–7 (135 treatment; 135 waitlist-control), mean age 5.2
Intervention	Psychosocial support through weekly group sessions for 5 months (facilitated discussions about topics such as child development, mother–child interaction, trauma, and coping strategies), a 1-hour home visit and standard medical care	Psychosocial support for caregivers consisting of six sessions of mother and baby groups, each lasting 1.5–2 hours (facilitated discussions on child development, practicing simple age–appropriate play activities, toy making improved caregiver–child relationships), home visits and standard medical care	The children were told a brief story and encouraged to hug and take care of Huggy-Puppy, a toy puppy and received standard care	Ten groups sessions of the Parents Make the Difference (PMD) program (facilitated discussions with role plays on topics such as nurturing and positive parenting, child development, empathetic communication, positive discipline, early learning, parent self-care, and stress management) and home visits
Control	Standard medical care	Standard medical care	Standard care	No intervention
Implementation data reported	Not found	Participation rates for group and home visiting sessions; attrition rates due to conflict-related factors; implementation challenges associated with the humanitarian context	Parental reports of the role of Huggy-Puppy in children's lives	Attrition rates and overall attendance rates were reported, but individual patterns of attendance were not tracked nor were home visits
Results	Positive effects on mothers' mental health; children's cognitive development and psychosocial functioning; and children's weight gain; no significant differences between groups on other measures	Improved maternal involvement, an increase in the availability of play materials and a decrease in sadness and worry for mothers of malnourished children; children's nutritional status or physical development was not included as an outcome	In both studies, the Huggy-Puppy intervention was associated with significant reductions in children's stress reactions	Significant reductions in caregiver-reported use of harsh punishment practices, as well as an increased the use of positive behavior management strategies and improved caregiver–child interactions.
Author	Dybdahl[30]	Morris *et al.*[31]	Sadeh *et al.*[32]	Puffer *et al.*[33]

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in the same villages not attending ECCD,[e] after controlling for relevant background differences such as child's age, gender, home learning environment, family possessions, reading materials at home, and father's literacy.[40]

In accordance with the findings of Lloyd and Penn, our literature review highlighted the dearth of impact evaluation studies, let alone implementation studies for ECD programming in humanitarian settings. Three of the four evaluation studies included a mention of implementation data, but did not include the comprehensive collection or analysis of implementation data. Additionally, three of four ECD program evaluations found in our review primarily focus on providing psychosocial support to caregivers, suggesting a conceptual model whereby caregiver stress and mental health are affected by war and conflict, and in turn influence parenting quality and thereby early developmental outcomes. For older children and youth, there has been much greater attention to mental health interventions in humanitarian settings,[41–43] with 32 relevant controlled evaluations identified in the latest comprehensive review.[44] The studies captured in Tol *et al.*[44] indicate a substantial number of interventions targeting children and adolescents, though focused on school-aged children and older. The evaluations of programs targeting adults comprise mostly individual-level therapeutic approaches. Several studies evaluate family and community strengthening interventions. However, none of the studies in Tol's review seem to explicitly focus on improving caregiver capacity to provide nurturing care to very young children. Nonetheless, drawing from the nonhumanitarian literature, the link between caregiver mental health and functioning, caregiving, and ECD is strong.[45–48] As such, mental health intervention approaches to improve caregiving may be a promising strategy for ECD in humanitarian settings.

Virtually none of the studies included in our review examine the quality of implementation of programming along the lines of the Durlak and DuPre framework, nor do they detail the specific contextual influences and adaptations related to operations within the humanitarian setting. Implementation research as a field of study is fairly new in nonhealth-focused service systems, including the field of ECD.[26] In order to accelerate the learning process around ECD service provision in humanitarian settings, implementing organizations and researchers need to systematically build mechanisms to assess implementation into monitoring and evaluation frameworks as well as impact evaluations and incorporate this critical information into analyses and publications of findings.

Key informant interviews

The findings of the key informant interviews reinforced some of the insights gathered from the literature review, while also shedding light on additional program characteristics and implementation strategies, current practices in implementation research, challenges, and priority areas for innovation and investment. Nine interviews were conducted in total, including seven experts in ECD, and two practitioners and researchers in implementation research in humanitarian settings. Five out of the seven ECD experts consulted also had significant experiences implementing or researching ECD programs in humanitarian settings.

Program characteristics. Interview participants shared accounts of relevant ECD programming in humanitarian contexts across a range of locations, programming type and delivery strategies. Twenty-two countries were explicitly mentioned as locations that had current or recent (within the past 5 years) ECD programming in situations of natural disasters, conflict, refugee or internally displaced communities, and complex political emergencies. Participants stressed the difficulty of clearly categorizing many of these contexts, as they often fluctuate between relative stability and more acute emergency situations. This includes programs in the Latin America and Caribbean Region, such as Guatemala, Haiti, and El Salvador; Ethiopia, Burundi, Ivory Coast, Mali, and Tanzania in Africa; Egypt, Iraq, Jordan, Lebanon, Palestine, Syria, and Yemen in the Middle East; Greece and Turkey in Europe; and Afghanistan, Bangladesh/Myanmar, Indonesia, Nepal, and Thailand in Asia. All of these programs were described as small-scale initiatives. Programming types and delivery strategies included informal playgroups for toddlers and young children, therapeutic playgroups facilitated by qualified psychologists, mother and child play and learning groups, support

[e] According to Save the Children report, the primary reason for children not attending ECCD was lack of availability.

groups for pregnant mothers (often combined with health or nutrition programs), home visiting programs, child care, formal and informal preschools, and the use of digital technologies to promote parent–child engagement in early learning activities. Additionally, many of the programs featured combinations of these elements, so, for example, preschool programs were often combined with some type of parenting program.

Current practices in implementation research. Only three of the nine interview participants discussed working directly with an ECD program in a humanitarian setting that includes a robust research and evaluation design. These three studies have not yet been completed so were not included in our review, but were described by interview participants as including implementation research to capture key program features such as dosage and fidelity, and include measures of the child, caregiver, and home environment.

In the absence of robust research designs, the majority of participants discussed the use of standard monitoring techniques as a type of implementation research that yields insights into the program characteristics and processes that influence observed outcomes. Commonly cited indicators within such monitoring systems include enrollment, program dosage implemented, and participant attendance. Some programs reported using observation tools to monitor the quality of childcare or preschool environments, the quality of group sessions, or the quality of home visits. When these quality indicators are collected, it seems that they are rarely used to inform program changes or improvements, but rather analyzed several months after the program ends for the primary purpose of donor reporting due to lack of resources and lack of prioritization for rapid data analysis.

As described by the participants, staff working in humanitarian organizations, including both international and local staff, are typically oriented toward data collection efforts that focus on key outputs (e.g., number of children vaccinated, number of books distributed, number of classrooms built, etc.) rather than data collection that would provide insights into how, why, and for whom a program produces outcomes. One participant cited the survival-focused culture of humanitarian staff, who do not see the value or necessity of data collection related to program features and processes. Another participant cited the emphasis that humanitarian donors have placed on measuring only outputs, rather than program quality and outcomes. While noting that this emphasis is slowly shifting more toward outcomes, the participant noted that there is still an engrained culture that focuses predominantly on outputs.

Challenges in implementation research. Key challenges cited by the interview participants generally fell into three different categories: (1) safety, security, and mobility; (2) staff capacity and interest; and (3) funding. Issues related to safety, security, and mobility were often described as logistical challenges restricting the ability of program implementers to safely and accurately collect data. In many humanitarian settings, there are strict restrictions on movement, which may inhibit the ability to physically reach participants. Such restrictions can include curfews and limitations on the locations that are accessible to humanitarian actors, which can render impossible traditional face-to-face data collection efforts, or can result in the need for additional time and resources in order to collect data. High levels of mobility among populations affected by crisis and conflict can also result in significant challenges for data collection.

Second, all of the participants interviewed highlighted the need for increasing the capacity and motivation of local staff in order to improve implementation research. The urgency of humanitarian relief often leaves staff with little to no capacity for additional data collection, let alone rapid turnaround in analyzing said data. Combined with current common reporting requirements, this is likely to undermine motivation of the staff.

The third key challenge highlighted by participants is the lack of funding for program evaluations and for implementation research in humanitarian settings. Participants emphasized that donors and funders have traditionally prioritized program reach (e.g., numbers of program recipients) and do not tend to invest in the high-quality monitoring, evaluation, and research that is needed to understand implementation processes and program impact. When funding opportunities do become available for research, they are often limited and do not provide sufficient resources to account for the challenges related to data collection in

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contexts of insecurity and mobility, nor do they provide sufficient resources for capacity building and professional development of local staff.

The insights gathered through the key informant interviews underscore that there are examples of ECD programming in humanitarian contexts, yet they remain small scale and do not typically include robust monitoring, implementation research, or evaluations of program effects or impact. Important opportunities for learning are often missed, such as in locations where there are combinations of preschool and parenting support, where implementation data could provide key insights the feasibility and scalability of such combinations. The vast majority of the programs described in interviews did not appear in the literature review, suggesting the need for improved mechanisms for sharing program implementation experiences among practitioners and researchers. Additionally, the challenges highlighted reveal significant barriers to the practice of implementation research, yet also suggest opportunities for ways to address these challenges, which will be further discussed in the following sections.

Conceptual framework for ECD implementation research in humanitarian settings

Our analysis of existing ECD implementation research in humanitarian settings emphasizes the characteristics and conditions of conflict and crisis that present unique challenges to implementation processes. These characteristics and conditions warrant further investigation in order to better understand how programs function and how they may be transferred or scaled within humanitarian settings. Our conceptual framework for ECD implementation research in humanitarian settings, presented below (Table 2), draws from the work of Durlak and DuPre and highlights key considerations for implementation research design for conflict and crisis setting. The key considerations do not cover all possible areas of inquiry, but intended to guide the development of comprehensive implementation research designs and to serve as a complement to the paper by Yousafzai *et al.*[49]

The development of the conceptual framework was informed by the analysis of the gaps in implementation research specific to early childhood programming in humanitarian contexts highlighted in the literature review and the key informant interviews. It draws from socioecological systems theories of human development to describe the dynamic, nested systems that affect developmental outcomes[50] and has been adapted for humanitarian settings. The individual level focuses on experiences of stress and insecurity associated with conflict and crisis that influence participant engagement with the program, and that will likely vary by individual characteristics (e.g., age, socioeconomic status, disability, and ethnicity). The family and community levels focus on the crisis-affected assets and adversities within the home and within the community that can influence program implementation and outcomes. The provider or workforce level takes into account the strengths and stressors affecting the program implementers, who are often affected by the same situations of conflict and crisis as the program participants, and may influence the quality of service provision.[51,52] The program level focuses on questions that would arise during the design phase of a program, which also deserve close attention during the implementation to understand how the program functions and contributes to outcomes. This includes the contextualization of programs for situations of migration, insecurity, multiethnic or multilingual populations, and variations in settings (such as refugee camps, urban areas, informal settlements), among others. The organizational level considers intra- and interorganizational factors that influence program implementation. The systems and macrolevels assess the policy environment, as well as the financial and geopolitical context that have important implications for scaling and sustainability.

Recommendations for implementation research

Implementation research frameworks for child and youth programming have focused on program and contextual factors in nonhumanitarian settings.[28] We have reviewed how such factors may be expanded and made more specific to the challenges of ECD programming in humanitarian contexts. ECD services in general are challenging in implementation in that the developing child requires attention to health, nutrition, learning, and protection. These call for coordination of multiple types of services, of which we have argued the humanitarian sector tends to emphasize some (basic health, safety, and nutrition) over others

Table 2. Key considerations and questions for ECD implementation research in humanitarian settings

Factors	Key considerations and questions for humanitarian settings
Individual participant level	
• Participant characteristics	How do individual experiences and responses associated with the crisis situation affect participation and engagement? (including variations by age, socioeconomic status, disability, ethnicity, education level)
Family and community levels	
• Home environment	How does the home environment, including family members' exposure to trauma and adversity, well-being, economic and work conditions, and mobility influence program implementation?
• Community	How has the crisis affected intragroup and intergroup relations within the community, relevant to program implementation? Have these dynamics influenced community-level demand for particular types of ECD services?
• Community-based funding	Are there community-based mechanisms to support program implementation costs? If so, are there threats to the stability of these mechanisms related to the humanitarian setting?
Provider and workforce levels	
• Provider characteristics	How do providers' own experiences of the conflict or crisis affect their ability to deliver the program?
• Workforce	What are the skills of the available service providers? What incentives and motivations are in-place to encourage high performance in the midst of conflict or crisis? What are the rates of staff turnover or migration?
Program level	
• Fidelity	How do the conditions of conflict and crisis affect adherence, compliance, integrity?
• Dosage	What are the contextual challenges that affect dosage (such as migration and insecurity)?
• Quality	What level of quality is necessary and achievable in the context? And how is this defined and measured?
• Program differentiation and compatibility	What are the unique features of this program that differentiates it from the existing services offered within the humanitarian response? In what ways is the program compatible with existing services?
• Program reach/equity	What are the characteristics of the intended target group(s), including ethnicity, gender, socioeconomic status, age, refugee status, living situation (e.g., camp, urban, informal settlement), religion, primary language/dialect, and other relevant factors?
• Cultural and programmatic adaptations	What specific cultural and programmatic adaptations are required for humanitarian settings and for the various target groups? Are there programmatic tweaks or changes in messaging that can improve fidelity, dosage, quality, responsiveness, etc.?
Organizational level	
• Leadership	What features of local leadership, as well as organizational leadership within a humanitarian program, are associated with better program implementation?
• Training, supervision, and technical support	Is the organization's training and supervision approach bringing about higher levels of program-level implementation?
• Consensus building	How does the organization work with local, regional, and national governance structures and leaders to build support for the program?
• Coordination with other agencies	How does the implementing organization partner with and coordinate with other service providers (including humanitarian actors, government, and the private sector)?
• Logistical and administrative support	How well do logistical supports address the specific challenges of humanitarian contexts?
Systems and macrolevel	
• Policies	What are the existing policies relevant to the ECD program, both within the humanitarian sphere of UN agencies, NGOs, and other service providers, and within the national government systems? How is the program influenced by these policies and how do programs influence these policies?
• Funding	Depending on context, what are funding levels and finance mechanisms that allow for greater sustainability, growth, and improvement of programming?
• Geopolitical context	How is the program influenced by major shifts in political power, migration, disaster, and war?

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(e.g., learning). Moreover, ECD services require quite substantial changes in types and modalities of service from prenatal to primary-school entry, a period of rapid development. In order to meet these challenges, we believe a research agenda must build practices and methods that incorporate unprecedented flexibility and adaptation, while retaining emphases of implementation research on cultural appropriateness and rigor. We outline several of the directions for such a research agenda emerging from the analysis of our review below.

Specificity of program models and implementation to humanitarian contexts

The stresses experienced by young children in humanitarian contexts are often more specific than those addressed in most of the ECD field, such as general poverty-related stress or disadvantage (e.g., consider the differences between natural disaster–related stressors and those related to war.[18,53] Program models and implementation research that are matched to the levels and sources of stress in families' lives must be developed, so that the emerging field of ECD in humanitarian settings produces context-specific interventions and research. Our review and informant interviews revealed a dearth of evaluation studies and among those, almost none that measured any aspects of implementation quality. As studies begin to capture these dimensions of programming, they should consider the specific aspects of the interventions that respond to disaster, conflict, and migration-related adversity.

The research workforce

Staff capacity and interest was identified as a major challenge to implementation research throughout the interviews. Capacities of researchers are key to good implementation research. These include flexibility and expertise across a range of qualitative and quantitative methods; measurement expertise in the assessment of contexts such as service take-up, quality, and a range of community contexts across formal camps and less formal settlements; as well as experience with both formative and impact evaluations. However, in humanitarian settings, traditional models of research such as purely university-based research teams are often not feasible. Thus, the expansion of NGO and government monitoring and evaluation functions to include better and more rigorous implementation measures is key. Feasible modes of data collection and associated assessments that can be implemented in the daily work schedules of staff in these settings must be developed. Phone-based data collection in real time, for example, may be feasible in many (but certainly not all) humanitarian contexts.

Ensuring effective use of implementation research in rapidly changing humanitarian contexts

Implementation research aims to inform changes in day-to-day practices of program staff, yet as highlighted in the key informant interviews, this rarely occurs. To ensure that such use is possible, implementation methods must be feasible; provide actionable evidence; and be communicated in a way and on a time frame that is appropriate for program improvement. The integration of such research into practice requires close communication between those collecting the data, those analyzing it, and the platforms to enable use in as close to real time as possible. The challenges are formidable given the rapidly changing geopolitical, local government, NGO, and funding contexts.

Local community members as resources for culturally anchored implementation research

Populations served in humanitarian contexts often (though not always) experience displacement, disaster- or conflict-driven migration across borders, and the challenges of adaptation to new contexts. In these contexts, the cultural appropriateness of services is critical. Involvement of community members in the design and evaluation of services, including local researchers when possible, is critical to the quality of implementation research.

In summary, the nascent field of implementation research for ECD programming in humanitarian settings holds great promise for improving our understanding of *how*, *why*, and *under which conditions and settings* programs have effects. Yet, in order to produce insights that will enable humanitarian actors to adapt, transfer, and scale successful ECD program models, this research must take into account and capture essential findings that speak to the unique considerations of the humanitarian settings. The conceptual framework presented in this paper highlights key considerations for implementation research that can respond to these questions, and advance our understanding of the program characteristics and processes that are most essential for improving children's outcomes in humanitarian

settings. By building the evidence base for ECD in humanitarian settings, practitioners, researchers, and donor institutions have the opportunity to change the trajectory and significantly enhance the lives of young children and families living in situations of conflict and crisis.

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Competing interests

The authors declare no competing interests.

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