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Sparking Lifelong Learning Through Play

Learning Through Play

A review of evidence related to play for children's education and development in humanitarian and low-resource contexts.

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December, 2021

In partnership with

International Rescue Committee · ipa INNOVATIONS FOR POVERTY ACTION · WAR child · THE BEHAVIOURAL INSIGHTS TEAM · PLAN INTERNATIONAL · The LEGO Foundation

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1   Overview

The focus of this review is on play-based learning, which is a methodology for improving children's social, creative, cognitive, emotional and physical skills through the integration of play and child-centered interactions into homes, communities, early childhood development (ECD) centers, primary schools and education systems. (14) There is evidence that supports the use of 'learning through play' to improve holistic outcomes for children, but it is largely from stable or developed country contexts, as compared to from humanitarian or resource-limited contexts. The purpose of this review is to identify evidence from the latter. More specifically, this review aims to answer the question:

What are promising and/or effective "Learning through Play" approaches in humanitarian and/or low resource contexts, delivered through educators, caregivers, communities (in pre-primary, primary school, community and/or home settings), and those integrated within wider education systems?

Evidence Base

Overall, 30 resources in English (28), French (1), and Spanish (1) were included in the final literature selection for this review. This includes 8 briefs, 8 impact evaluations (6 RCTs and 2 difference-in-difference methods), 7 case studies, 4 observational studies (pre-test/post-test method), 1 participatory action research study, 1 systematic review (meta-analysis), and 1 handbook.

Outcomes

This review focuses on interventions that make a lasting and strong impact on holistic learning outcomes (academic/cognitive, social, emotional, physical, creative) for refugee, displaced, and host children ages 3-12+. These include early literacy, early numeracy, reading and math skills, cognitive development, physical growth, creative skills, socio-emotional (SEL), well-being and resilience.

Highlighted Findings

Setting the Stage

- Play can help improve social, emotional, cognitive, and physical development in early childhood - one of the key periods for human development.

- Crisis contexts can lead to major instability and disruption in a child's development, making play methodologies for educational programming a key tool in such contexts.

- Play can be free (child-led), guided, instructional (usually adult-led, clearly defined rules) or a mix.

- Primary caregivers, teachers, and communities play key roles in encouraging learning through play.

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Home-based delivery

- As primary caregivers are often a child's first teachers, encouraging home-based play is critical for child development in crisis contexts.

- Giving children a sense of responsibility in individual play, through guiding play-practices directly with them, can help reduce stress and improve coping mechanisms for responding to fearful or stressful situations.

- Improving parenting skills as part of home-based play interventions can improve positive family interactions and increase support for children as well as their self-esteem, positive emotions, attention, and social skills, among other areas.

- Home-based ECD centers that incorporate daily play activities can improve student attendance, interpersonal relationships, numeracy, and literacy skills, among others. They are also often more cost effective than building new educational centers.

Community-based delivery

- Play-based interventions with a strong community engagement component can improve children's psychosocial, behavioral, and learning outcomes. These include after school educational activities, cultural and recreational activities, radio programs delivered through community based recreation/ play spaces, and through safe outdoor playgrounds. These programs often engage caregivers, local NGO staff, teachers, and community leaders/experts.

- Child Friendly Spaces (CFS) are frequently used in refugee or crisis contexts to help provide non-formal education and improve psychosocial, life skills, and learning outcomes. They are recommended to be creative, imaginative, physical, and communicative, among other areas. They often include activities such as singing, sports, dancing, and other creative activities, along with life skills programming. They have been found to help improve life, behavioral, and cognitive skills as well as psychosocial well-being.

Pre-primary/primary education setting

- Play has often been incorporated into formal pre-primary/primary educational settings through teachers, and sometimes involve a parental engagement component. Interventions are often focused on helping children heal and overcome trauma.

- Teacher and parental engagement programming in a pre-primary/ primary formal education setting can improve psychosocial well-being (PTSD symptoms, social-emotional learning), and learning outcomes (literacy and numeracy, motor skills, executive function). They often involve activities such as capacity building for instructors on grief/trauma, and how to implement structured play activities. Activities include role plays, written narratives,

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dances, cooperative play, among other play strategies.

- Group-focused play and peer discussion can be particularly effective for healing from trauma and improving psychosocial and learning outcomes. These tend to focus more on therapy through play, art therapy, physical and mental coping mechanisms, and sharing experiences/emotions with peers through interactive play and discussion.

- Professional development initiatives for teachers and educational personnel in pre- and early-primary educational settings to improve knowledge of playful learning are key, including spaces and discussion groups/meetings for mutual sharing and experiences and prioritizing skill development that enables learning, such as physical energy, creative skills, and willingness to try new practices, let children shape their own learning, and prepare playful activities.

Educational policy and curriculum

- Many national governments and international NGOs do not recognize the importance of incorporating play into curricula, programming, and policies. Moreover, there is a lack of robust evidence for how to most effectively incorporate play as part of national policies and systems.

- Some of the obstacles mentioned in the available literature include a lack of understanding and parental misconceptions around play, lack of teacher development focused on playful learning, lack of resources for play materials, and large class sizes.

- Recommendations include developing curriculums that incorporate and reinforce play activities into the home-setting with parents and/or caregivers, incorporating play into early learning standards, stating play as a key method for achieving literacy/numeracy goals, and developing a shared vision on the value of play across different government ministries.

II   Background and Theory

a. What *is* the theory beh*i*nd "Lear*n*ing through Pl*a*y"?

'Learning through Play' (LtP) is based on the premise that play is not purposeless, but instead can improve brain structure, function and can facilitate the process of learning. One of the most key periods for human development is early childhood, or pre-primary to primary education years.

Play is an essential component for children to gain knowledge and important social, emotional, cognitive, and physical skills during ECD. It also teaches leadership, resilience, socialization, self-advocacy, and group skills (26). Conflict and disaster can significantly impact the socio-emotional well-being of a child, and lead to a loss of identity - creating long term consequences for a child's fulfillment, balance, and development.

Under crisis contexts, employing interactive and play methodologies thus becomes even more

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important for young children. It not only offers a pathway toward the development of holistic skills (cognitive, social, creative, emotional and physical) and facilitates academic growth, but also counteracts toxic stress, can promote self-regulation and impulse/emotion control, provide coping mechanisms for stress and promote healing from trauma. (7; 28) It can further encourage children to problem-solve through play and take other perspectives into account to build empathy (28). This can occur within the bounds of organized pre-primary or primary education settings, community settings, at home or home-based centers, and through wider educational policy that encourages its use. Incorporating play into learning is particularly important during the first 3-4 weeks after the acute onset of an emergency when life-saving operations and interventions are being implemented (26).

b. Types of play and key definitions

Play interventions, as a whole, should be iterative, meaningful, joyful, socially interactive, and actively engaging for the child to ensure effective outcomes for positive ECD. Key ingredients of 'learning through play' include; i) children being actively engaged, ii) relating new experiences to what they already know (i.e., play being meaningful), iii) children enjoying a task for its own sake and the thrill of surprise, insight, or success after overcoming challenging experiences, iv) iteration—trying out possibilities, revising hypotheses and discovering new questions, and v) social interactiveness—so that children are able to communicate thoughts, share ideas, understand others and enjoy being with them and build stronger relationships. (5)[1]

Play can be free, guided, or instructional. Free play is child-led and instructional play incorporates defined rules. In guided-structured play, adults define end goals and provide the relevant resources to reach them. Most interventions that have closed achievement gaps focus on the intersection of these three forms, creating a balance of structure and autonomy for the child (11). This can be implemented through creative arts, objects and games, pretend and symbolic play, physical play, and group play. In the home environment, children spend a majority of their early lives with their primary caregivers. Therefore, it is important for them to play active roles in children's daily experiences. In organized settings (e.g. primary schools, Child Friendly Spaces, etc.), it is important for trained caregivers and/or teachers to enable and scaffold playful experiences through deliberate planning so that children are able to engage independently and with peers (23). Evidence from 26 case studies finds that most interventions that help close achievement gaps are free play or play that is adult-guided but children-led, as it allows them to make their own choices and test their own ideas. (11)

III   Intervention Types

a. Pre-primary or primary education settings

Pre-primary or primary educational settings can have a wide variety of structured and unstructured play activities incorporated into their curriculum. Play is sometimes used as a tool in such contexts to help psychosocial healing and improve socio-emotional, numeracy, and literacy skills. They are often delivered through teachers, may have a parental engagement component, and also include the involvement of nurses, clinicians, and other community members. The interventions featured in this report primarily take place in school settings inside refugee and IDP camps, with a few in more formal settlements.

Whether teacher, parent, or clinician led, the classroom based activities included a wide range of

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[1] *According to LEGO Foundation and UNICEF*

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both capacity-building activities for key stakeholders as well as individual and group play. Some had components to train teachers on basic ECD, traumatic stress, and how to engage in structured play, while others focused on improving teacher-student and teacher-parent interactions. Example literacy and numeracy activities include reading stories, phonics, writing, spelling, mini libraries and engaging parents for story-telling at home. Creative/artistic activities include puppet-making, various forms of art therapy and drawing experiences, role plays, presentations, dramas, singing, dancing, and musical instruments. Certain interventions focused more on cooperative play and group games, as well as establishing peer discussion groups to process traumatic events. Managing emotions and stress were sometimes taught through meditative and calming practices, such as stretches, muscle tension, learning communication methods, and creating safe environments to share experiences. Physical activities include jump rope, volleyball, football, ball tossing, and other athletics. In general, many of the interventions combined several of these types of activities and helped to improve overall child learning and psychosocial outcomes.

Teacher and parental engagement in play

A program targeting children 8-18 years old in IDP camps in Sierra Leone focused on training camp teachers on basic child development, traumatic stress theory, loss and grief reactions, and how to implement structured activities. Activities promoting trauma healing were implemented over four weeks, including safe environments to share war experiences, provide accurate information on war, and normalize children's reactions. Children shared war-related stories in small groups, wrote experience-related essays, participated in role plays, sang and performed traditional dances, and played musical instruments. The unstructured activities consisted of jump rope, volleyball, football, athletics, and ball tossing for 20 minutes, 4 days a week. An observational pre/post study found that the program was associated with a significant decrease in intrusion and arousal symptoms ($p < 0.0001$), an increase in avoidance reactions ($p < 0.0001$), and decreased PTSD symptoms in 96% of participants (concentration issues, sleep disturbances, bad dreams, and intrusive images ($p < 0.001$). ([12])

In Colombia, playrooms were created for displaced children 4-8 who had experienced conflict and included toys, objects, drawing materials, and provided space for free play (role playing). Activities focused on physical and social development and routines, with talent shows and "museum of my life" ideas to be presented to parents. The museum of my life allowed children to designate toys and photos for their own families and look at that of other children. Children also made drawings about their neighborhoods and engaged in puppet playing, role playing and team games. Joint strategies were created with parents, caregivers, supervisors, and NGOs. Qualitative interviews showed that the Museum of My life activity helped children improve their recognition and understanding processes and children's awareness of the space around them and desire to engage with it, parents got to know children and each other better and improved participation. ([29])

A "Reading to Learn" intervention in Uganda and Kenya focused on capacity building for teachers and improving teacher-student interaction through activities such as students reading stories with teachers, sentence making, spelling, phonics, and puppet-making. The "core model plus" included parental engagement to increase storytelling/reading at home, support school attendance, and create mini libraries. An RCT of the program found it significantly improved oral and written literacy skills by 5% ($p = 0.05$). ([23])

Interactive group-focused healing

A Psychosocial Structured Activities program in Uganda targeted IDP children aged 7-12 years attending camp schools. It was carried out by regular school teachers trained in the methodology in a residential workshop beforehand and took place in one hour sessions over

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5 weeks. Activities included drama, play therapy, art and movement, cooperative games, reflective exercises and didactic presentations on safety and control, self-esteem, thoughts and reactions from danger, coping skills, and resource identification. There were community engagement (helping the sick and elderly, digging boreheads, and planting trees) and parental engagement components (periodic discussion meetings with parents facilitated by NGO staff who made regular supervisory visits to schools). An RCT of the program found that it helped to improve well-being measures for students (p = 0.001) and parents (p = 0.01) but not teachers. (2)

An observational study in Israel focused on children aged 8-12 years who had been in the Second Lebanon War (2006). The intervention was teacher-delivered with weekly modules focusing on psychoeducational material, bioenergy exercises, meditative exercises, cognitive-behavior skills, and reprocessing of traumatic experiences through art therapy and narrative techniques. The intervention was associated with significant decreases in PTSD symptoms (p<0.001). However, the study was not randomized so the results are less conclusive. (30) A program in Nigeria targeting children aged 8-13 years vulnerable to conflict trained nurses on psychosocial support and health problems in children and how to recognize them, use psychosocial tools and build resilience. Nurses helped teachers to identify children in need of support. Children in the intervention groups were assigned to peer support groups to share feelings and coping techniques, as well as resilience training in self-reliance, existential aloneness, maintaining balance and harmony with one's self, sense of purpose, perseverance, through various activities (songs, brainstorm, craftwork, lectures and discussions). An RCT found that the intervention increased the resilience scores of children (p=0.03), decreased depression scores, increased self-esteem (p=0.03), and increased social connection (p=0.002) when compared to the control group. (24)

A program in Palestine focused on children aged 9-15 years in refugee camps who suffered from PTSD. Intervention groups were moderated by clinicians for weekly sessions and spoke about their traumatic experiences, events, told stories, played games, and role-played the conflicts. An observational study found no significant impacts. (1) A case study of the 'Better Learning' program in Afghanistan focused on children in refugee camps in which sessions helped students identify their reactions to stress, be active in personal recoveries, learn calming techniques (deep breathing, stretches, muscle tensing and relaxation, safe spaces, visualizing a real/imagined place to feel safe), talk to teachers/families about their problems, and building school resilience by strengthening parent-teacher collaboration. Children drew maps of their communities and games were used for when difficult memories and emotions arised. A case study found that the program helped increase teacher-student bonds and 78% of children said they felt less scared because of the sessions. (9)

In Mozambique, preschool classrooms were constructed in rural areas to improve educational attainment with the assistance of community members. Classrooms followed a structured, daily routine with learning and playing activities, mixed by age and gender to promote peer-to-peer interaction. The program ran for three hours and 15 minutes and offered play for about 50% of the time on a school day. The remaining time incorporated learning activities, such as rhymes, songs, sharing stories, alphabet activities, toys, and the use of materials to count, sort, compare, match, add, and subtract. Results from an RCT of the program showed that children attending preschool were 24% more likely to be enrolled in primary school and were more interested in writing tools, mathematics, and games involving numbers. Cognitive capabilities also improved. Students were able to remember things more easily, sort objects by common characteristics, use one-to-one correspondence, identify which numbers were higher, and recognize geometric shapes. (20)

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b. Home-based

Home-based learning is an important component of a child's early development, as primary caregivers are often a child's first teachers (5). In refugee settings, acute shortages of resources and the disruption of communal structures during displacement can lead to poor health and trauma, causing adults to focus on survival tasks with little time to focus on other elements related to child development (10). Thus focusing on effective interventions to help deliver interactive and playful learning within the home and by caregivers is an important step in ensuring child well-being and healing in their early years. This section will focus on LtP interventions within the home environment, child, parent, and care-giver focused play and group and play through home-based centers.

Home-based child, parent, and caregiver-focused play

Some interventions focus on guiding play-practices with children directly that they can engage in on their own at home. An RCT focusing on war-exposed children aged 3-7 years in a refugee camp in Israel focused on the effect of using a "Huggy Puppy" doll. Children were told about how the puppy is sad because it is far from home and were told how to take care of them at home, with the idea that taking on the "caretaker" role allows children to shift attention outward and provides a coping mechanism. The study found that a stronger attachment to the doll was associated with lower values on the Stress Reaction checklist score and the number of severe psychological symptoms (r=-0.44; P<0.05). In follow-up, 71% of the intervention group children were without severe symptoms compared to 39% of the control group, with stress-related scores significantly lower (P<0.0001), and some children were able to effectively use attachment to the doll as a coping mechanism for sleeping on their own and responding to fearful stimuli. (8)

Other interventions go a step further to focus on engaging parents and caregivers in play. An RCT with displaced Burmese children and their caregivers in Thailand focused on the effectiveness of a parenting skills intervention. The "Happy Family" program was composed of weekly sessions with caregivers learning parenting skills and children learning social skills partly in separate, partly together in groups with structured and unstructured play to encourage positive family interaction. The program significantly reduced participants' externalizing behavior (that which violates social norms and order; p = 0.019) and attention issues (p = 0.027), as well as an increase in prosocial protective factors (sources of support, self-esteem, positive emotional outlook, positive social skills; p = 0.006) reported by children. (3)

Group play through home based centers

The following two interventions focus on using the home as a way to create group play and learning through establishing home-based ECD and child-care centers run by trained community volunteers (CVs), including refugee women. Both interventions trained local community members within camp to engage children in near-daily free and structured group play activities within the home, with positive impact (through surveys) reported on student attendance, interpersonal relationships, numeracy, visual, literacy skills, and improved WASH practices. Using individual home spaces in refugee camps can help to significantly decrease the upfront time and costs of establishing centers, and in some cases may be a more effective solution than building new schools. (10)

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Refugee-led home-based ECD centers (10)
Eastern Chad

Target group: refugee children living in refugee camps, 3-5 years of age.

Context/Barriers: Eastern Chad is home to more than 300,000 refugees from Sudan (Darfur) who fled ongoing violence.

The intervention:
- "Little Ripples" (with iACT) is a refugee-led ECD education program that helps build the capacity of refugee women to manage in-home preschools.

- Trained and employed 91 refugees across 2 camps to implement, monitor and oversee programs to promote community participation.

- Teachings and pre-schools are based inside refugee's home spaces, each class has 45 students.

- Female household heads offered financial stipend and food incentives to encourage participation; safe spaces established to encourage women in leadership and participation.

- Neighbors volunteered to clean/maintain safe spaces.

- Daily activities: *songs, relay games, local musical instruments, integrated WASH practices.*

A case study and survey found:
- Teachers reported improved relationships with students, increased student attendance (average attendance= 80%) and improved positive feelings/ excitement for pre-primary schools.

- Number of students able to name colors was associated with an increase from 27% to 51%.

- Number of students able to count to five or higher was associated with an increase from 43% to 73%.

- Number of students able to identify four or more animals in pictures was associated with an increase from 21 to 63%.

- Number of students able to recite at least first ten letters of alphabet with no mistake was associated with an increase from 45% to 83%.

- WASH practices was positively associated with improved hygiene behaviors and attitudes among children.

> **The students are much more peaceful and calm. At first, many children would fight over toys and hit each other and not pay attention to the teachers. Now, they sit, listen, play and share with each other.**

Education Director, Little Ripples, Eastern Chad (10)

> **I like so much of what I have learned from Little Ripples, including the mindfulness, the learning by playing, the asking about feelings to students, and the positive behavior management, that I take all this and do it with my Level 1 class. The impact has been remarkable.**

Parent and Teacher, Little Ripples, Eastern Chad (10)

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Promoting playful home learning through community volunteers ([18])
Cox's Bazar refugee camp, Bangladesh

Target group: children 3-5 years.

Context/Barriers: play-based learning for Rohingya refugee children in the camp is limited due to density, lack of resources, and safe spaces.

The intervention:
- A training and pedagogical guide on ECD and play for volunteers.

- A School Mobile application with play activities designed with the community, low-cost and no Wi-Fi connection needed.

- National VSO volunteers help lead training for CVs who work with local children home-based spaces to promote playful learning.

- CVs use their own homes as ECD centers.

- Activities six days a week.

- Key activities: *songs/rhymes; health and education practices (hand-washing, washing clothes); safety and security awareness (stranger danger/road safety); thinking skills games (e.g. puzzles, sequencing), story-telling videos.*

A case study and survey found:
- According to the study, the key part of the project was collaboration with VSO who made sure the MESH Guide research was translated and contextualized to work with refugees in the camp.

- The translational research model and VSO relational volunteering model were complementary and helped VSO lead change while gaining support/knowledge of early-year education from MESH.

- 60% of CVs surveyed found the tablets to be useful in understanding how to use many types of materials (from fabric dolls to bottle tops) to help children learn.

- 20% of CVs felt the application helped them learn to teach.

- 98% of parents were satisfied with the cleanliness, location and safety of the home-based centers.

- 90% of parents said the CVs have the suitable qualifications to teach the children.

- 90% of CVs and 98% of parents reported that children could recite a poem due to the intervention.

- Overall, the CVs felt that children made progress in their social, emotional, language, physical, and intellectual development.

> **" Initially, the children were fearful or anxious when we interacted with them... Our home visits were characterised by screams... Now, these children have the chance to sing joyfully, recite poems, and take part in other activities... Above all, these children feel a sense of belonging.**

Community volunteer, Cox's Bazar refugee camp, Bangladesh ([18])

c. Community Setting

According to the Social Learning Theory of Lev Vygotsky, a child's social environment has a significant influence on learning outcomes ([21]). Mixed play interventions, or a combination of free-play and structured interventions, in community crisis contexts generally have positive effects on children's cognitive, social, emotional, and physical developmental outcomes. These are attributable to peer interaction, multi-stakeholder engagement, trauma therapy, and a

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variety of play interventions, i.e., creative arts, pretend play, skills training, and storytelling. (19; 16; 7; 17; 13; 21)

Community Engagement

Community engagement practices can be an effective approach to improve social and behavioral outcomes in ECD. An intervention in the West Bank and Gaza worked with children, parents, and facilitators in recreational, cultural, and non-formal activities meant to support resilience. Community volunteers and local NGOs worked together to build local recreational centers with after school educational activities (i.e., traditional dancing, art work, sports, drama and puppetry). To involve influential community members, parents with participating children attended classes in first aid and parenting skills, with lessons aided by local community experts. Caregivers were also able to join children in applicable activities and act as participants or observers. An observational study with pre-test, post-test design sought to understand the impact of the intervention on children's social and emotional well-being, relationships with parents, and future orientation. Children were assessed according to The Child Behavior Checklist (CBCL) which has items describing specific behavioral and emotional problems of children. Externalizing Problems in the CBCL summarizes Delinquent and Aggressive Behavior scales, and the Internalizing Problems sums Anxious-depressed and Withdrawn-depressed scales. Total Behavior Scale sums the scores of all problem items. Results showed that the intervention decreased children's total behavioral problems ($p < 0.5$), internalizing problems ($p < 0.5$), and externalizing problems ($p < 0.1$). In addition, parental support towards ECD increased due to participating in the intervention, facilitating sustainable outcomes for children. (19)

According to a qualitative case study by BRAC Institute of Educational Development in Bangladesh, refugee mothers collaborated with the NGO, BRAC, and built CFSs for displaced Rohingya children (ages 4-12) using multi-stake holder decision processes within the camps. Community leaders and members decorated spaces and chose designs for the interior. Interactive workshops were made for children to create art from past experiences and design the CFS walls. Children recited kabbya (rhymes), narrated kissa (stories), played unique local games, and prepared visual art projects. Children felt as though the spaces were made to be comfortable and trauma levels reduced by partaking in activities. (4) In Somalia, teachers were engaged in the process of child learning. An interactive radio intervention involved non-governmental, formal Koranic and community school teachers in active-learning pedagogy. Children (ages 1-5) also received radio broadcasting (3 hours/day, 5 days/week) of numeracy and literacy skills, life skills, health, conflict prevention and trauma mediation. As a result, grade one learners scored 15% higher than non-radio learners on standardized literacy tests and 20% higher in math. (16)

The International Play Association (IPA) lead play interventions in various crisis contexts. According to IPA's brief of qualitative case studies, policymakers, local non-profit organizations, teachers, and caregivers were involved in implementation processes. In Syria, displaced children reported their desire to have tools and materials (i.e., ropes, footballs, basketballs, puzzles, swings, toys, crayons, and colouring paper) to enhance their play environments. The NGO BEYOND set up a safe space for children to engage in free and guided play, leading to decreased levels of trauma. Similarly, community development practices were implemented in Thailand to build protected spaces for children through building playgrounds alongside community members. Parents were encouraged to help design spaces and local volunteers brought toys and sports equipment. As a result, children used the space to practice dance, play games, cook local food, and practice speaking different languages as free play. Thai children engaged in child labor stated that the playground helped them stay happy and relaxed. Pre-intervention, young children typically played in unsafe spaces, but when they played freely in outdoor playgrounds where they had permission from teachers and open access, pretend play and social play were frequently observed. For example, in the community-built sandpits in urban areas, displaced Burmese children had fun throwing water bags with peers and filling plastic bottles with water, sand or rocks and pretending they were racing cars or tow trucks. (7)

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> " **When we play, we are happy and we enjoy ourselves.**

Children, aged 6-10, Thailand (7)

> " **Children in this Learning Centre are able to play more than when they are in Myanmar because they can play soccer. We provide trainers and equipment for them. In Myanmar, they can only play somewhere in nature. Good play means playing soccer or volleyball in teams.**

Teacher, Parami Secondary Learning Centre, Mae Sot, Thailand (7)

Child Friendly Spaces (CFS)

Child Friendly Spaces (CFSs) are interventions used by humanitarian agencies to support children in protected environments. CFSs enable children to make significant leaps in how they process, store, and use information, facilitating their cognitive skill development (21). They are widely used in war zones and displacement camps in order to provide non-formal education and assist with psychosocial needs (17). According to Save the Children's qualitative handbook (2008), play resources in emergency settings should have multiple components, such as (26):

- **Creative:** helps children express feelings/ideas, externalize emotions, promotes understanding, self-esteem, empathy, experimentation and creativity.
- **Imaginative:** develops creative, social, coping skills, self-esteem, experiential understanding, promotes relaxation, and team spirit.
- **Physical:** facilitates self-confidence, team work skills, motor skills, muscles, and coordination.
- **Communicative:** helps children express without personalizing, develops imagination, and discuss important issues.
- **Manipulative:** improves problem-solving abilities and self esteem/cooperation.
- **Cultural:** builds self esteem, self respect, and respect towards others.
- **Leisure:** empowers participation, resilience, and relaxation.
- **Public awareness:** promotes and facilitates relevant initiatives.

In Uganda, Child Centered Spaces (CCSs) targeted displaced children exposed to armed conflict. CCSs are typically used to assist child development in war zones, as children are left at home or under the care of siblings/caregivers, unsupervised. From the morning to afternoon of each weekday, program activities were implemented to include singing, counting, alphabet reciting, listening to stories, organized games, hygiene skill lessons, free play, and helping pick up litter. Children (ages 3-5) were also taught literacy and non-violent conflict resolutions with their peers. Difference-in-difference results showed that attenders scored higher in well-being indicators compared to non-attending children (95.4% vs. 80.5%), had improved appetites (78.2% vs. 58.5%), communicated their needs (54.8% vs. 26.9%), shared with others (89.2% vs. 61.9%), were helpful to other children (86.9% vs. 62.7%), were well-mannered (68.6% vs. 41.9%), and had improved life skills, i.e., hygiene (93.7% vs. 57.6%). (17)

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> **Children know how to be *in* a group. Before they didn't know how to *sit still*. They used to fight among themselves and throw stones. Now they have friendships with each other.**

Child Well-Being Committee, Unyama Camp (17)

A systematic review evaluated the effects of CFS in children (ages 8-11) in multiple crisis settings. In the context of Ethiopia, displaced children had fled from Somalia's drought and conflict. Two camp CFSs focused on literacy and numeracy facilitated through psychosocial exercises. In Uganda, eight camp CFSs were built to facilitate child engagement in traditional song, dance, story telling, drama, and dance. In displacement camps, war-escaped Syrian children in Jordan participated in drawing, handcrafting, puzzles, games, storytelling, singing, and drama. After a major earthquake in Nepal, children participated in 11 CFSs with games, outdoor sports, creative activities, traditional song and dance, and life skills training. All studies compared attenders with non-attenders. CFS attendance was associated with reports of improved psychosocial well-being and developmental assets amongst children aged 6–11 in four out of the five sites. This was statistically significant in Ethiopia (Cohen's d= 0.51, 95% CI 0.10–0.91) and Uganda (Cohen's d= 0.21, 95% CI 0.02–0.40). Positive impacts on developmental assets were statistically significant in Uganda (Cohen's d= 0.37,95% CI 0.15–0.59) and Iraq (Cohen's d= 0.86, 95% CI 0.18–1.54 (13).

CFSs aimed to address the growing needs of Somali refugees who migrated due to drought and on-going conflict. Difference-in-differences results showed that routinely on-site counselling, feeding programs, and psychosocial activities (drawing, singing, and recreational play) had positive effects on literacy scores, math scores, psychosocial well-being, developmental assets, and decrease extreme psychosocial difficulties for younger children (ages 6-11). Decreases in difficult scores were greater for male intervention and control groups compared to female groups (14.40 to 10.47 vs 12.25 to 9.14). (22)

A mixed methods case study in Uganda observed the effects of CFSs on the cognitive, social, and physical development of 50 refugee children. Activities included ball games, music, dance, drama, arts and craft, early childhood education, puzzles, sliders, sandpits, swings, storytelling, and beam balancing. CFSs also acted as spaces that can help to promote trauma recovery. Qualitative assessments were conducted with facilitators, parents, and caregivers; children enjoyed indoor and outdoor activities and peer interactions became normal to routine. Inclusion of knowledge and skill activities made the sessions cognitively, socially, emotionally, and physically uplifting. Factors positively affected by activities were creative thinking (82%), attention and concentration (75%), memory and recollection (74%), and cognitive development (20%). Cognitive development was promoted through acquired listening skills, reasoning, memory and recollection among children. Self-esteem and empathy were cited as major contributions on socio-emotional development of refugee children by 20% and 18%, respectively. Sharing (17%), healing (14%), taking turns (10%) and resilience (13%) were promoted, and emotional resilience was strengthened. Improved gross motor and fine motor skills (body control and balance, muscle strengthening, and hand eye coordination) were mentioned: 79% and 74%, respectively. (21)

d. Education system or policy

Sustainable Development Goal 4 seeks to ensure that *"all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education."* (5) While play is an important part of early brain development, many international organizations do not recognize its importance in statements of education quality. (11) Unfortunately, evidence and studies in this area are sparse, with many resources providing

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more general recommendations or obstacles at the national or curriculum level. At the national level, it is important to incorporate play into curricula, educational programming, educator/facilitator training, and creating policies clearly stating that play is an essential feature for effective learning. This might include directing funding for LtP into Education Annual Planning, running public awareness campaigns, and coordinating with other sectors (health, social, etc.) to include LtP into community, parent, and school-based programming. (8) Current obstacles for integrating play into pre-primary curriculums include a lack of understanding of the value of play (memorization and recall remain the norm), parental misconceptions of play (not considered true learning), curriculums not addressing play and lack of teacher development focusing on playful learning, and large class sizes which can limit the freedom to play. (5) Specific recommendations related to incorporating play into national policy and curriculum development can be found in section V.

IV *Highlighted Case Studies*

a. *H*uggy puppy
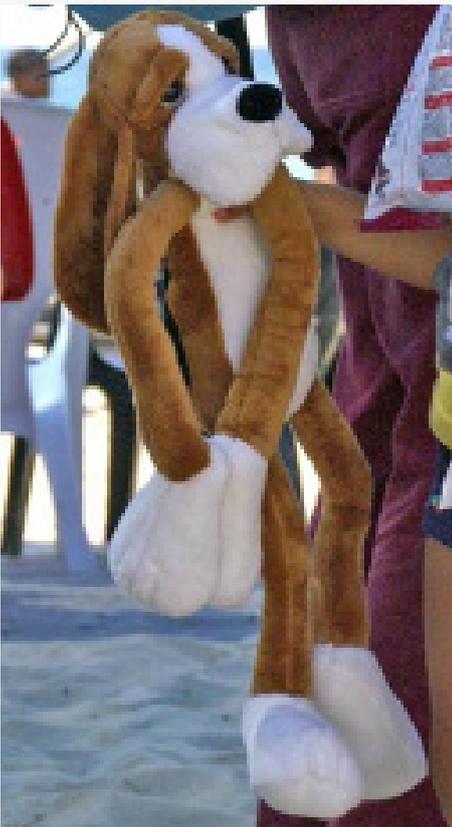
During the summer of 2006, a war took place between Israel Defense Forces and Hezbollah in Northern Israel. Children in attack areas were exposed to sirens, explosions, and associated stress reactions. A RCT was conducted in the Nitzanim camp two days before the war ended in order to assess the impacts of home-based trauma therapy, the "Huggy-Puppy" intervention (HPI), on stress reactions for displaced children (3-7 years old).

A baseline interview was conducted to uncover child war experiences and stress reactions. A standard intervention was implemented that focused on providing parents with information on how to return to routine life after the war and how to address children's anxieties and fears (for example, parents were told and given a written summary of guidelines to avoid over-exposing children to scary information and to engage in soothing interactions).

The HPI was designed as a cocker spaniel dog toy with velcro to allow different hugging positions. Children were told the following story, followed by demonstrations on how to hug and be hugged by the doll:

" This is my friend Huggy. Huggy is usually a very happy puppy. Right now, he looks a little sad and scared. Can you guess why he might be sad? … He is sad because he is very far away from his home and he does not have any good friends. He likes to be hugged a lot but he has no one to take care of him. Do you think you can be his good buddy, take care of him, hug him a lot, and take him to bed with you when you go to sleep?

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Children (n=74) in Study 1 received standard care and the HPI. Children received instructions to take care of the Huggy Puppy at home. In Study 2, psychologists administered group-based information sessions with children on how they (n=191) could take care of the dolls. Parents and teachers received instructions to remind the children to take care of the doll. Results were compared with the control group (n=101) who did not receive any intervention.

According to the initial assessment, most of the children had experienced 3 (33.78%) or 4 (47.30%) specific war experiences; 83.78% presented 1 symptom of stress at a severe level, and 55.41% of the children presented 3 symptoms at a severe level. In the follow-up period for Study 1, 4 children (15.3%) in the HPI group did not develop any signs of attachment to the puppy. Stronger attachment to the Huggy-Puppy was associated with lower values for the SRCL (stress reaction checklist) summary score (r= -0.46; P< .05) and the number of severe symptoms (r= -0.44; P<.05).

In the follow-up period for Study 2, 71% of the intervention group children were symptom-free (not presenting any severe symptoms) compared to 39% of the control group children. SRCL scores were significantly lower in the intervention group compared with the control group (P<.0001) and for severe symptoms (P<.0001). According to qualitative feedback, some children stopped sleeping with their guardians at night and slept with the Huggy-Puppy in their own beds. Other children responded positively to fearful stimuli (e.g. explosion noises) by searching for their Huggy-Puppy and hugging the doll. (25)

b. Child Friendly Spaces

In Ethiopia, Child Friendly Spaces (CFS) were built within the Buramino Displacement Camp to address the growing needs of Somali refugee children (aged 6-11 years-old). Two refugee CFS centres focused on functional numeracy and literacy skills and included on-site counseling, on-site feeding programs, and psychosocial free-play activities (singing, drawing, and recreational play). Each center provided 2 three-hour sessions: morning sessions for younger children (ages 6-11) and afternoon sessions for older children (12-17). (22)

Results from a difference-in-difference impact evaluation (reported for p < 0.05) revealed that literacy scores increased from 0.07 to 0.36 for younger children, and 20% of children who could not read at all were able to read letters or words at follow-up. Numeracy scores increased from 0.11 to 0.86, and the proportion of children who could recognize the numbers 1 to 10 increased from 4 to 30%. Psychosocial well-being improved for all children, including increases in prosocial behavior and developmental assets. For younger male children, psychosocial difficulties decreased from 15 to 7.67 and were greater than that of non-attenders (13.71 to 9.97). Decreases in female scores were similar between attendees and non-attenders (14.40 to 10.47 vs 12.25 to 9.14, respectively). Girls with greater developmental assets were more likely to attend CFS, and younger girls had the most development assets[2]. This included positive values and identity, familial community sources of support, commitment to learning, etc. Girls with fewer assets may have been discouraged from attending CFS. Therefore, it was recommended that

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[2] The Developmental Assets Profile (DAP) is a social-emotional assessment which measures the internal strengths, external supports, and other non-cognitive factors of young people, and their growth in these key areas over time.

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more gender-sensitive CFS enrollment (i.e., door-to-door canvassing, community sensitisation campaigns on the importance of female education, etc) could help improve enrollment for girls with fewer developmental assets. (22)

> " Previously... there was a *little girl*. She used to ur*inate in* the class because of stress and psychosocial problems. Because of the ways she was treated, she laughs, plays, *is* confident and academically she *is* active now compared to others.

Parent of CFS attendee.

There were observable secondary effects from the study. Parents with CFS attending children had attitudinal shifts, increased knowledge, and exhibited less violence towards their children. They also reported unmet basic needs as a source of stress less at follow-up than non-participating parents, potentially attributable to the additional CFS feeding program at a time when increasing hardship conditions in the camp created greater strains on caregivers to conduct normally routine tasks, including cooking.

According to participatory discussions, CFS supported greater feelings of protection for children of both groups due to increased knowledge and awareness of protection risks. There were increases in protection concerns for parents with non-attending children. (22)

Mary (Center) playing a "tossing rock game" with her peers,
BidiBidi Refugee Settlement, Uganda, March 2021

V   Obstacles and Lessons Learned

Obstacles and lessons learned (Included interventions with play-based components)

Home-based

● Local language translations of mobile applications or materials can take some time. The use of translators is important to ensure ease of training and learning for community volunteers. (18)

● For home-based play centers in camps, getting the community to focus on the quality of the program (e.g. focusing on play-based literacy/numeracy, positive behavior management, and SEL) instead of the number of children reached and enrollment limits in intervention pilots, when so many children lack educational access, can be difficult. To help solve this, conducting outreach with the community that shows long-term plans to reach more children, the program structure and expected impact can be helpful. (10)

● Partnering with refugee women and mothers as community volunteers, who use their own homes for home-based ECD sessions and are often trusted and familiar figures, can be an effective way to encourage families to send their children to learning sessions (18). Employing community participants for program delivery can also help to ensure culturally-relevant pedagogical programming. (10)

● Home spaces can reduce barriers to education of distance and safety; and can reach more children and employ more refugee women than building new schools. (10) However, the home-based setting was reported to be too noisy in one intervention for a mobile application of children's educational activities. Thus the setting should thus be taken into account in the design/delivery of educational materials. (18)

Community-based

● LtP intervention research should emphasize community mapping in earthquake safe zones and peace-building activities in conflict-affected zones. (13) To overcome data collection problems, creating monitoring tools that guide community members step-by-step through basic and structured question-response options can be effective. (10)

● Community play interventions should try to include activities located in safe outdoor environments (such as playgrounds) to improve physical development and stimulate imagination. (21)

● CFS programming should consider holistic, integrated needs, such as the connection between nutrition, WASH, protection and education for children's cognitive and psychosocial needs. (21)

● Gender-sensitive approaches should be incorporated into community-based play and ECD interventions, such as door-to-door canvassing and community sensitisation campaigns on the importance of female education. (24)

Pre-primary/primary setting

● For pre-primary/primary settings, avoid implementing play interventions during exam periods as they can influence student and teacher commitment. (24)

● Build ECD and play programming into pre-existing institutions (schools, health centers, etc.) and ensure integration of protection, education, health, mental health, and nutritional support. (6)

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🍃 Teachers should avoid speaking for too long to make space for children to speak/participate. Games can help with this. (9)

🍃 Create quality and ongoing professional development initiatives for teachers, administrators, principals, and other educational personnel to improve their knowledge and skills to implement playful learning activities. Many teachers may not be prepared to implement play-based learning in their classroom and may think of learning materials only as workbooks instead of objects that children can interact and learn from. There also may be inadequate resources to create play materials or lack of training for teachers to create low-cost locally available play materials. Moreover, many teachers may lack confidence in implementing LtP activities as they have not seen it in practice. Such factors should be taken into account when designing teacher training and professional development programming. (5)

🍃 Teachers should be encouraged to learn from one another's practices. Ongoing monthly professional development meetings can be a tool to bring teachers together to share reflections, ideas for learning toys and solve classroom management problems. WhatsApp, particularly in remote areas, can also help create sharing pathways. (5)

🍃 Teacher professional development goals and selection criteria for pre- and early- primary play-based education should be based on attitudes and skills that enable learning, such as physical energy, curiosity, creative skills, willingness to let children shape their own learning and try new practices, and willingness to prepare playful activities and materials. (5)

🍃 Ensure capacity-building opportunities for parent-teacher associations and school management committees on LTP who will, in turn, promote awareness and support among the broader community (31).

Education policy and curriculum

🍃 For curriculum development, it is important for play to be shaped as a core value. For example, the national curriculum could state play as a method to achieve literacy and numeracy goals. There should be guidance and supply of indoor and outdoor games that are culturally appropriate. Early learning standards should incorporate play. (5; 27)

🍃 Parents should be made aware of the important role they play in providing meaningful play experiences in the home and encouraged to do so through the curriculum. The pre-primary curriculum should include reinforcement activities at home and focus on building parents competencies/skills. These may include take-home activities parents can engage with and school meetings or conferences that focus on improving caregivers' capacity to support home-based LtP. (5)

🍃 Quality personnel (teachers, quality specialists, etc.) should have their needs considered and maintained in national, regional, and local contexts for things such as teacher-child ratios, class sizes, etc.) (5) It is important to understand and facilitate the well-being of adults facilitating children's play (caregivers, teachers, professionals) as they play a key role in child development. (28)

🍃 Consider the roles and responsibilities of different stakeholders across existing governance structures and ministry branches and ensure that there is a shared vision around the value of play, which can help ease implementation and coordination activities. (5) Generate buy-in about play-based learning to all LTP collaborators, improve coordination and funding opportunities for stakeholders, and facilitate capacity building for collaborators (31).

🍃 NGOs can engage with diverse stakeholders working at the technical level to build capacity and advocacy efforts to inform curriculum. This can include collaboration with community members (parents/guardians, religious leaders), local nongovernmental organizations (NGOs), faith-based organizations (FBOs), and private organizations (engaged in ECD/pre-primary education).

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VI   Evidence Ranking

These ratings pertain to the body of evidence related to a finding and confidence we ascribe in the findings based on rigor. They do not speak to the direction of the finding.

Note: The methodology of the rankings are written below, to the right of the symbols.

● ● ●   **= Strong**   [2 or more systematic reviews demonstrates impact: whether positive, negative, uncertain, or null]

● ●   **= Moderate**   [At least 1 systematic review, at least 1 literature review with predominantly IE-based evidence, or 2 or more IEs demonstrates impact: whether positive, negative, uncertain, or null]

●   **= Promising**   [At least 1 IE demonstrates impact: whether positive, negative, uncertain, or null]

●   **= Limited**   [Only observational or qualitative evidence demonstrates impact including literature reviews of only observational or qualitative data: whether positive, negative, uncertain, or null]

Stable: Contexts not experiencing conflicts, disasters, or crisis.

Fragile: Contexts that are very impoverished or rendered vulnerable due to past crises. Will also include contexts that frequently experience a crisis.

Humanitarian: Contexts facing conflicts, disasters, or crisis.

Intervention Type	Strength of the Evidence (based on evidence type and rigor)	Context	
		Stable	**Fragile or Humanitarian**
Home-based Moderate evidence (RCTs) of positive impact of interventions encouraging children and caregivers to engage in both structured and unstructured play in the home setting. Interventions reduce child stress, improve emotional coping, behavior, and improve prosocial protective factors.	● ●		✔
Limited but positive evidence based largely on case studies of home-based ECD centers, often with direct refugee involvement, encouraging free and structured group play within refugee camps. Positive effects found on student attendance, literacy, numeracy, WASH practices, and psychosocial development.	●		✔

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Intervention Type	Strength of the Evidence (based on evidence type and rigor)	Context	
		Stable	**Fragile or Humanitarian**
Community-based			
Limited evidence (case study and observational) suggests positive effects of community engagement in ECD activities with play components on child psychosocial, behavioral, literacy, and numeracy outcomes.	🟠		✔
Moderate evidence indicates a positive effect of Child Friendly Spaces (CFS) with play components on psychosocial, life skills, literacy and numeracy skills.	🟢 🟢	✔	✔
Pre-primary/primary educational setting			
Promising evidence indicates a positive effect of parent and teacher engagement with play approaches in pre-primary/primary educational settings on improving psychosocial outcomes (including decreasing PTSD symptoms), and literacy/ numeracy skills.	🟢	✔	✔
Moderate evidence indicates positive results of interactive group-focused healing and learning through play in pre-primary/ primary educational settings on improving psychosocial outcomes and numeracy skills.	🟢 🟢		✔

Summary:
The number of impact evaluations were evaluated for each section of the review: home-based, community-based and pre-primary/primary educational setting interventions. Sections with a higher number of impact evaluations were determined as more rigorous.

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VII Summary of key stakeholders and activities

What stakeholders are engaged in "play" and how?

Stakeholders	Activities
Community volunteers, mostly women refugees (e.g. mothers, older sisters) (1; 2; 6; 7; 26; 20)	*Carry out play activities in home-based centers (usually their own) in camp settings; monitor and oversee programs; help and engage in structured and unstructured play activities; participate in leadership circles; help construct and decorate play spaces; interactive art workshops; public awareness activities (radio, forums, etc.).*
Community leaders, refugee welfare council leaders, center management and child committees (6; 7; 21)	*Help decorate and design play spaces; reduce protection risks for children; facilitate community meetings to discuss children's rights; help oversee Child Friendly Spaces (CFS).*
International volunteers and NGO staff (e.g. VSOs) (1; 2; 4; 21)	*Train community volunteers on play guidance and tools; conduct play activities.*
Parents/guardians/caregivers (4; 5; 8; 2; 21; 6; 5; 3; 27; 24; 28; 9; 29; 26)	*Attend classes in parenting skills, first aid; join children in play activities; help run home-based centers; storytelling/play/ reading at home; given guidance to check on children's play/ care-taking behavior at home; involved in periodic discussion groups; participate in social media and play campaigns to spread awareness; help design community playgrounds; improve collaboration with teachers.*
Teachers, educational personnel (including volunteer and government teachers) (5; 8; 2; 11; 12; 30; 6; 5; 21; 4; 9; 29; 20)	*Participate in teacher capacity building and training on psychosocial issues, how to implement play activities, trauma, etc. ; prepare play and course material; run psychosocial healing activities, including interactive play, drama, art therapy, etc.; facilitate small group discussions with children, share problems, etc.; lead trauma healing activities through 'healing classrooms'; lead physical play activities.*
Psychologists, clinicians, nurses (8; 12; 13; 26)	*Help to administer toys to children and tell them how to take care of them; lead child group discussions; participate in capacity building on psychosocial services and recognition; help lead therapeutic play activities (songs, craftwork, etc.); help lead peer support groups.*

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Example play activities and time allotments

Stakeholders	Time	Activities
Home-based play centers	6 days/week, 2 hours 3x day	*Mobile application play activities, including songs/rhymes; health and hygiene practices (handwashing and washing clothes); safety and security awareness (stranger danger and road safety); thinking skills games (shape puzzles, sequencing), story-telling videos.*
	14 weekly sessions	*Caregivers learned parenting skills and children learn social skills in separate groups for the first hour and join together in the second hour for practice and feedback from facilitators; positive family interaction was conducted through structured and unstructured play.*
Child-friendly or child centered spaces	Two three hour sessions (morning/ afternoon)	*Drawing, singing, recreational play.*
	All day, Monday-Friday	*Singing, counting, alphabet reciting, listening to stories, organized games, hygiene skill lessons, free play, and helping pick up litter.*
Predominantly psychosocial/ healing through play programs	15 structured, 1 hour sessions over 5 weeks	*Dramas, cooperative games, play therapy, art activities, reflective exercises and didactic presentations on safety and control, self-esteem, thoughts and reactions from danger, resource identification, and coping skills; helping the sick and elderly, digging boreheads, and planting trees.*
	8, 60-min trauma healing activities were implemented 2x a week for 4 weeks	*Children shared war-related stories in small groups, drew pictures of their worst memories, shared drawings in small groups, wrote experience-related essays, participated in role-plays, sang or performed traditional dances, and played musical instruments.*
	20 minutes per sessions, 4 days/ week	*Unstructured, recreational activities consisted of jump rope, volleyball, football, athletics, ball tossing, etc.*
	Six sessions, once per week or combo of 4 hour sessions 2x/week for 6 weeks	*Singing local resilience songs, brainstorming, craftwork, assignments, and lectures/discussions, share feelings, ideas, and coping techniques; cover topics on self-awareness, critical thinking, decision-making, feelings, empathy, etc.*

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	7 weekly sessions	*Crisis intervention groups were moderated by clinicians (psychiatrist/principal investigator, 2 psychologists and physician), children talked about their traumatic experiences, wrote about the events, told stories, played games, and role-played the conflicts.*
	45-minute modules delivered weekly over 15 weeks	*Psychoeducational material, bioenergy exercises, meditative exercises, cognitive-behavior skills, and reprocessing of traumatic experiences through art therapy and narrative techniques.*
	5 days a week for 33 weeks	*Healing' classroom environment with activities encouraging pre-literacy and numeracy skills, as well as socio-emotional skills, i.e., managing feelings, cooperative play, expressing needs, and focus. These were accompanied by nurturing interactions with caregivers.*
Pre-primary/primary settings	3 hour sessions/ daily	*Preschool program that includes play 50% of the time, with rhymes, songs, sharing stories, alphabet activities, toys, and the use of materials to count, sort, compare, match, add, subtract.*

Children playing games from the PlayMatters at Home Learning Packets, BidiBidi Refugee Settlement, Uganda, March, 2021

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Children playing rope skipping game during an organised Play Session,
Palabek Refugee Settlement, Uganda, October, 2021

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