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# Integrating social protection and early childhood development: open trial of a family home-visiting intervention, *Sugira Muryango*

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## ABSTRACT

A pre-post design with 6–13-month follow-up assessed the feasibility and acceptability of a home-visiting intervention to promote early childhood development, improve parenting and shared decision-making, and reduce violence in impoverished Rwandan households. Twenty vulnerable families with a child 36-months or younger enrolled in *Sugira Muryango*. Measures of parenting, home environment, family-violence, decision-making, and health-status were administered at pre/post and follow-up. Families reported high satisfaction post-intervention. OMCI scores improved for 4.8% of mother-child dyads at post-intervention and 19.0% at follow-up, while 9.5% of dyads showed declines at both times. HOME Inventory scores improved for 9.5% and 14.3% of dyads at post-intervention and follow-up respectively and declined for 4.8% and 0.0%. Indicators for equal decision-making and child dietary-diversity improved at post-intervention and follow-up. Fewer mothers believed physical punishment was necessary at follow-up. *Sugira Muryango* shows promise for improving parenting, beliefs about harsh punishment, child nutritional status, and shared decision-making among vulnerable families.

## ARTICLE HISTORY

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## KEYWORDS

Africa; child development; violence; child health; parenting

## Introduction

To advance the development of children living in poverty globally, robust and feasible interventions that can be deployed in diverse cultural contexts are needed (Engle et al., 2011). Children living in poverty are at risk for poor health and development in addition to exposure to family stress and violence, which often perpetuates intergenerational cycles of limited human capital formation and poverty (Richter et al., 2017; Shonkoff & Fisher, 2013). Worldwide, this population has been the focus of a growing early childhood development (ECD) agenda, with emphasis on low- and middle-income countries (LMICs) (Black et al., 2017; Britto et al., 2017; Richter et al., 2017). Additionally, the development community is increasingly recognizing links between advancing social protection<sup>1</sup> and ECD promotion. Given that poverty is associated with poor ECD outcomes (Grantham-McGregor et al., 2007) and that many disparities in health and wellbeing begin in early life (Shonkoff et al., 2012), pairing social protection services, such as cash transfers and public works programmes, with ECD promotion may be advantageous for several reasons. First, providing families with additional financial resources can release resources for caregivers to invest in the home environment

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and materials benefitting children (Bastagli et al., 2016). Research on social protection interventions such as cash transfers to vulnerable families indicates that they may reduce stress related to financial strain with implications for improving psychological wellbeing of the family and benefits on ECD (Fernald & Hidrobo, 2011). Linking ECD interventions with social safety net programmes may also enable ECD interventions to reach vulnerable populations and combat early development of disparities (Britto et al., 2017). Research in several LMICs indicates that ECD interventions combined with social protection efforts can advance child development, school readiness, and health outcomes (Bastagli et al., 2016; Britto et al., 2017; Engle et al., 2011). In Colombia, a family home-visiting intervention led by community ‘mother leaders’ contributed to significant improvements in cognition and language for children from families enrolled in a conditional cash transfer programme (Attanasio et al., 2014). Despite growing evidence for combined social protection/ECD interventions in LMICs, few have been evaluated in Sub-Saharan Africa (SSA) or have explicitly linked social protection and ECD interventions (Britto et al., 2017).

In Rwanda, 39% of households live in poverty with 16% in extreme poverty (National Institute of Statistics of Rwanda (NISR), 2015). Rwanda has made significant strides in improving child and family health through innovative policies and programmes (Farmer et al., 2013; Rich et al., 2012; UNAIDS, 2012), but continues to struggle – particularly among the poor – with high rates of stunting and other adverse child development outcomes (NISR, MOH, & ICF International, 2015). Several new initiatives in Rwanda aim to transform the lives of vulnerable families with young children. The recently revised and approved ECD policy (Republic of Rwanda Ministry of Gender and Family Promotion (MIGEPROF), 2016) establishes ECD as a priority, with a key pillar being increased cross-sectoral coordination, including with the social protection sector. The Rwandan government has prioritized national expansion of its flagship social protection programme Vision 2020 Umurenge Programme (VUP) to include gender- and child-sensitive social safety net components. The *Sugira Muryango* (Strong Family) ECD programme was developed within this context. Interventions focusing on the home environment could complement Rwanda’s broader ECD agenda, which has prioritized opening model ECD centres at the administrative sector- and cell-levels, supported by additional ECD services delivered through centre-, community-, and home-based programmes, and nutrition and ECD-awareness campaigns. *Sugira Muryango* was designed to provide additional support to families living in poverty to enrich caregiver and child interactions, reduce family conflict and violence and promote cognitive development, health, nutritional status and school readiness, all of which are critical to breaking intergenerational cycles of poverty (Ascend at The Aspen Institute, & Bernard van Leer Foundation, 2016). Cash injection provided by VUP public works could further improve child and family outcomes through increased material wellbeing.

Family-based preventive interventions have the potential to promote good parenting (*uburere bwiza*) and reduce violence in families facing multiple stressors. The *Sugira Muryango* programme offers coaching to caregivers of young children to promote early stimulation and responsive parenting. The programme seeks to help families navigate community resources and conflict resolution channels, while providing information on healthy child development. Since the programme is delivered via active coaching in the home, timing of the intervention delivery can be flexible, respond to individual family needs, and engage all caregivers, including fathers.

This paper describes an open trial to assess feasibility, acceptability, and potential of the *Sugira Muryango* programme to improve ECD and parenting outcomes and its impact on violence within families and resource navigation. This trial was developed as a first stage to test delivery of the *Sugira Muryango* intervention and performance of the measurement instruments prior to implementing *Sugira Muryango* as part of a larger randomized controlled design powered to detect statistically significant differences between treatment and intervention groups. *Sugira Muryango* is designed to engage families eligible for the VUP public works programme, though not all participant families were yet receiving VUP support during the open trial. The upcoming randomized controlled trial will assess *Sugira Muryango*’s potential as a combination social protection/ECD intervention for families receiving VUP public works.

## Methods

### *Sugira Muryango development and adaptation*

*Sugira Muryango* was adapted from a parenting and family home-visiting intervention originally developed and tested in Rwanda for HIV- and AIDS-affected families (The Family Strengthening Intervention for HIV (FSI-HIV)) (Betancourt et al., 2014; Betancourt et al., 2017). The original FSI-HIV was based on the Family-Based Preventive Intervention (Beardslee, 1998), a strengths-based intervention to prevent depression in families living with caregiver depression, which has demonstrated efficacy in improving family functioning across a range of low-resource and culturally diverse settings (Beardslee et al., 1997, 2011; Beardslee, Gladstone, Wright, & Cooper, 2003; D'Angelo et al., 2009; Podorefsky, McDonald-Dowdell, & Beardslee, 2001; Sparrow et al., 2011). *Sugira Muryango* was developed for targeted use among the most vulnerable families in Rwanda as a complement to centre-based ECD programmes, which have historically struggled to provide access to families facing multiple stressors and have shown only limited ability to break cycles of poverty in LMICs (Biersteker, 2012; Garner, 2013; Howard & Brooks-Gunn, 2009). *Sugira Muryango* uses active coaching to enhance responsive parent-child interactions, conflict resolution and resource navigation, including links to centre-based ECD programmes and other services (Britto et al., 2017; Shonkoff & Fisher, 2013; UNICEF & Imbuto Foundation, 2015). Standardized *Sugira Muryango* training materials were developed for the Rwandan context with input from local and international ECD experts, Rwandan government ministry partners, and Community Advisory Boards (CABs). ECD content on early stimulation, health promotion, nutrition and hygiene was also drawn from UNICEF and WHO Care for Child Development materials (UNICEF & World Health Organization, 2012). Content on promoting improved family functioning, reducing caregiver conflict and family violence and promoting resilience and enriched parent-child interactions was adapted from the FSI-HIV materials.

### *Core components of the Sugira Muryango programme*

*Sugira Muryango* is a structured intervention with five core components (see Figure 1): (1) providing education on children's development, nutrition, health, and hygiene; (2) coaching caregivers in

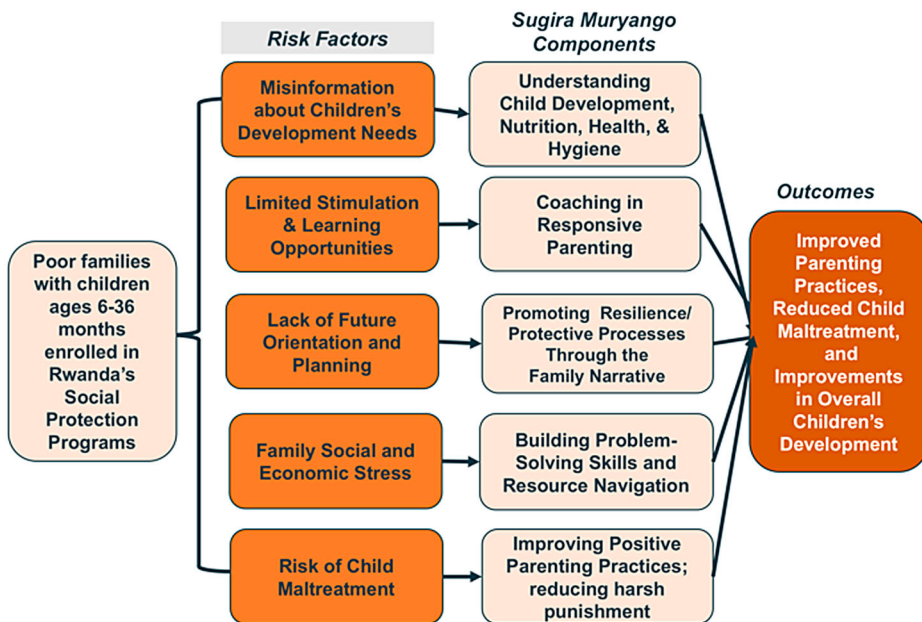


Figure 1. *Sugira Muryango* conceptual model.

responsive parenting to promote ‘serve and return’ interactions (Center on the Developing Child at Harvard University, 2017); (3) violence reduction: reducing conflict via emotional regulation and coping skills to promote family resilience in the face of adversity; providing information on the importance of positive parenting, alternatives to harsh discipline, and the need for violence-free environments to support a child’s cognitive, physical and emotional development; (4) strengthening parental problem solving (executive function) skills and social support through improved navigation of available informal and formal resources; and (5) promoting early language learning and school readiness. *Sugira Muryango* delivers these components via structured modules based on active coaching through a home-visiting approach (see Table 1). During this open trial, intervention materials were refined to enhance future feasibility for government-led scale-up. The initial curriculum comprised 22 modules and was delivered to the first 10 participant families in the rural Rwinkwavu, Kayonza District. Based on those experiences, the intervention content was condensed into a 15-module version, maintaining the same core content, and was delivered to the remaining 10 families in the peri-urban Mageragere, Nyarugenge District. To ensure affordability and scalability, *Sugira Muryango* is designed to be delivered by community volunteer ‘coaches’ organized by local government and linked to ECD centres. However, for purposes of testing safety, feasibility and acceptability, coaches in this open trial were bachelor-level interventionists with previous experience delivering the FSI-HIV intervention. The number of sessions required to complete the programme followed the core module content but could be spread out over multiple sessions according to each family’s needs and challenges. Particular effort was made to engage fathers in dual-caregiver households to take a whole-family approach to violence reduction.

**Table 1.** *Sugira Muryango* intervention modules.

Core Component	Original 22 Module Version	Condensed 15 Module Version
<b>Introductions</b>	<b>Module 1:</b> Nothing Can Defeat Combined Hands	<b>Module 1:</b> Children are the Future of Rwanda
<b>Misinformation about Children’s Development Needs</b>	<b>Module 3:</b> Children are the future of Rwanda <b>Module 4:</b> Learning About Your Baby’s Developing Brain <b>Modules 13–15:</b> Good Nutrition for Developing Babies <b>Module 16:</b> Good Household Hygiene <b>Module 17:</b> Good Health	<b>Module 4:</b> Parenting is More than Giving Birth <b>Module 11:</b> Good Health and Hygiene <b>Module 12:</b> Good Nutrition for Developing Babies
<b>Limited Stimulation and Learning Opportunities</b>	<b>Module 5:</b> Making the Home a Place Where a Baby’s Brain Can Grow <b>Module 6:</b> The Importance of Play <b>Module 7:</b> Playtime <b>Module 8:</b> Building Early Communication Skills <b>Module 9:</b> Helping Kids Learn Language <b>Module 10:</b> Good Parenting is Better than Being Born Well <b>Module 11:</b> Responsive Parenting	<b>Module 5:</b> Making the Home a Place Where a Baby’s Brain Can Grow <b>Module 6:</b> The Importance of Play <b>Module 7:</b> Building Early Communication Skills <b>Module 8:</b> Helping Children Learn Language <b>Module 9:</b> Good Parenting is Better Than Being Born Well
<b>Lack of Future Orientation and Planning Family Social and Economic Stress</b>	<b>Module 2:</b> Parenting is More than Giving Birth <b>Module 12:</b> The Important Role That Everyone Plays in Raising a Baby Well <b>Module 18:</b> The Future Development of the Child Depends upon Good Parenting in the First Months of Life	<b>Module 2:</b> Nothing Can Defeat Combined Hands <b>Module 10:</b> The Important Role That Everyone Plays in Raising a Baby Well <b>Module 3:</b> Managing the Stress of Parenting and Family Life
<b>Risk of Maltreatment</b>	<b>Module 19:</b> Solving Conflicts Well in the Home <b>Module 20:</b> Avoiding Violence in the Home	<b>Module 13:</b> Resolving Conflicts in the Home <b>Module 14:</b> Keeping the Home Safe for Everyone
<b>Wrap-up</b>	<b>Module 21:</b> With a United Family Anything is Possible <b>Module 22:</b> A Child Who is Well Taken Care of Becomes the King of Tomorrow	<b>Module 15:</b> With a United Family, Anything is Possible

*Sugira Muryango* modules use activities drawn from Rwandan culture (e.g. songs, proverbs) to help families internalize core skills and incorporate active coaching, including in-home parent-child interactions to impart knowledge and skills. The *Sugira Muryango* curriculum focuses on core elements of child development – physical, cognitive, linguistic and socio-emotional – and builds on the WHO/UNICEF Care for Child Development Package (UNICEF & World Health Organization, 2012) which has been delivered successfully across LMICs. The final *Sugira Muryango* curricular materials were reviewed by counterparts at the Ministry of Gender and Family Promotion, the National Commission for Children, UNICEF and Imbuto Foundation, the lead nongovernmental organization involved in the scale-up of ECD centres nationally.

### **Counsellor selection, training, and supervision**

Coaches were three males and one female Rwandan bachelor-level home visitors, all fluent in English and Kinyarwanda. Coaches underwent a two-week training in the delivery of the *Sugira Muryango* programme by the intervention developers and a graduate-level expert trainer with a background in ECD. Training included role-play-based learning and active coaching practice using a comprehensive intervention manual. Coaches were also trained on techniques for ensuring parent engagement and strategies for providing feedback to caregivers on early stimulation, conflict resolution and problem solving/resource navigation to overcome family challenges.

After initial training, investigators and ECD expert supervisors, including a graduate-level ECD expert and a PhD-level psychologist, provided weekly phone supervision that included case presentation, group discussion, problem solving and support. Coaches met with the Rwanda-based Programme Manager regularly to review feedback on *Sugira Muryango* delivery. CABs comprising parents of young children and stakeholders working in ECD also provided suggestions for improving materials.

### **Open trial**

#### **Participants**

The inclusion criteria for families were: (1) families ranked as vulnerable by the Rwandan government's community-based household-ranking system known as *Ubudehe* level one or two<sup>2</sup> (Ministry of Finance and Economic Planning of Rwanda, 2002) and therefore eligible for VUP public works, (2) having at least one child 36 months or younger, and (3) caregivers' willingness to participate in a home-visiting intervention to promote ECD and family functioning. The exclusion criterion was severe and active crisis in the family, including divorce proceedings, or an active mental health crisis, such as psychosis or suicide attempts by a caregiver. Participants received modest compensation, in the form of a children's book written in the local language and foodstuffs after final assessments. Twenty households ( $n = 35$  caregivers) were enrolled in the open trial (10 households in Rwinkwavu and 10 households in Mageragere – roughly one year apart), of which 15 were dual-caregiver. Of the 20 households that were enrolled, 19 completed the programme. One single-caregiver household withdrew after the mother reported not having enough time to participate.

#### **Procedures**

**Recruitment:** Families were recommended by local government staff in Mageragere, Nyarugenge District and Rwinkwavu in Kayonza District. Local government staff identified families that met the *Ubudehe* criteria and *Sugira Muryango* coaches described the study to caregivers, confirmed eligibility and asked if the family was interested in participating. Families were enrolled between November 2014 and June 2015. Caregivers were first invited to give informed consent for their own participation and then for their eligible children (all children age 36 months and younger). All caregivers gave written consent for themselves and their children. Once enrolled, families were assigned to one of four coaches. All interviews and home-visiting sessions were conducted in families' homes. Study procedures were approved by the Rwandan National Ethics Committee and the Harvard T.H. Chan

School of Public Health's Institutional Review Board, where the principal investigator was based at the time of this study.

*Quantitative data collection:* Comprehensive quantitative batteries assessing main study outcomes were administered immediately before (baseline), immediately after (post-assessment), and six to thirteen months (depending on family availability) after the intervention (follow-up). The caregiver who stated that he or she knew the child best, which for this study was always the biological mother, provided reports on: (1) child development and health, and (2) the quality of the home environment and caregiver-child relationship. Caregivers provided self-reports on: (1) his or her own social support, parenting and mental health, (2) household reports on economic status of the family and family demographics, and (3) use and navigation of both formal and information resources such as accessing nutrition supplementation programmes or health services. Quantitative batteries were administered orally by the local research team in Kinyarwanda using Android tablets. Although a coach could deliver the baseline assessment to get to know a family, a different team member would administer the post- and follow-up assessments. The post-assessment battery included a measure of satisfaction.

Primary caregivers (mothers) completed all assessments. Assessments were not administered to secondary caregivers in Rwinkwavu families at baseline but were collected from secondary caregivers at subsequent time points. Secondary caregivers in Mageragere completed assessments at all time points, except one father who was unavailable at follow-up due to relocation for a temporary job (see Figure 2).

## Measures

### Process measures

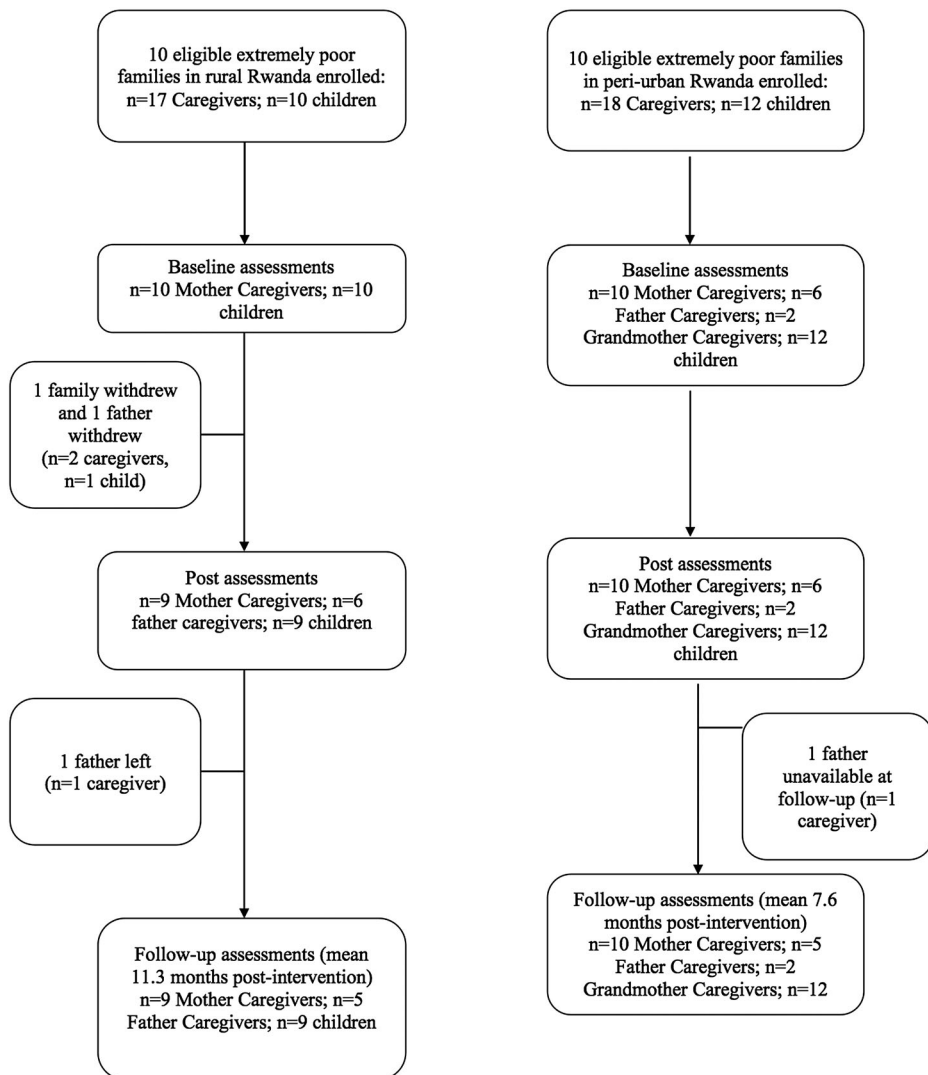
*Participant satisfaction:* A 10-item questionnaire was administered post-intervention. Caregivers were asked whether they were satisfied with various intervention components and whether they would recommend the intervention to others.

*Outcome measures:* Measures of ECD, the home environment, child-caregiver interactions, ECD knowledge and attitudes, and child health were drawn from other trials focusing on ECD that had been conducted in Rwanda or adapted for this study. Measures followed a rigorous translation protocol, including back translation, from English to Kinyarwanda (Biddlecom, Awusabo-Asare, & Bankole, 2009; Messam, McKay, Kalogerogiannis, & Alicea, 2010).

Harsh punishment was assessed using an adapted 13-item version of the Multiple Indicator Cluster Survey-Round 4 (MICS4) Child Discipline Household Survey (UNICEF, 2009). Items were scored 0 = No, 1 = Yes.

The level of stimulation and support provided by caregivers in the home environment was measured using a locally-adapted 43-item version of the infant/toddler Home Observation for Measurement of the Environment (HOME) Inventory (Caldwell & Bradley, 2003; Singla, Kumbakumba, & Aboud, 2015) (Cronbach's  $\alpha = .78$ ). All items receive a binary score based on the presence (score = 1) or absence (score = 0) of self-reported and direct observation of parenting behaviours and household conditions. Item scores are summed to derive scores for the total scale and the six subscales, which include: (i) Variety: indicates the variety of people and events children are exposed to daily (max. 5 points; Cronbach's  $\alpha = 0.53$ ); (ii) Organization: measures the regularity in a child's routine and safety of their environment (max. 6 points; Cronbach's  $\alpha = 0.28$ ); (iii) Acceptance: assesses the caregiver's response to the child's misbehaviour (max. 7 points; Cronbach's  $\alpha = 0.58$ ); (iv) Involvement: indicates caregiver engagement of the child in play and learning (max. 5 points; Cronbach's  $\alpha = 0.66$ ); (v) Learning Materials: assesses caregiver provision of appropriate learning and play materials (max. 9 points; Cronbach's  $\alpha = 0.62$ ); and (vi) Responsivity: measures caregiver responsiveness to the child (max. 11 points; Cronbach's  $\alpha = 0.66$ ).

The Observation of Mother-Child Interaction (OMCI) (Rasheed & Yousafzai, 2015) was used to assess the responsiveness of caregiver-child interactions (Cronbach's  $\alpha = .85$ ). A five-minute prompted play interaction was live scored by trained local staff by summing 19 items (scored



**Figure 2.** Flow chart of participants in the *Sugira Muryango* open trial.

from 0 for ‘never’ to 3 for ‘often’) for a maximum possible score of 57, representing highly responsive and positive interactions. The OMCI contains two subscales: a score for behaviours exhibited by the caregiver (12 items, max. 36 points; Cronbach’s  $\alpha = 0.77$ ) and a score for behaviours displayed by the child (7 items, max. 21 points; Cronbach’s  $\alpha = 0.78$ ).

To assess nutrition intake caregivers completed a 24-hour dietary recall from the UNICEF Multiple Indicator Cluster Survey (MICS5) (UNICEF, 2013a) for the target child. Health status was measured using standard Demographic and Health Survey (DHS) modules reporting the prevalence of diarrhoea, fever, and cough in the seven days preceding the survey. Water, sanitation, and hygiene practices were examined using items from WASH modules in the MICS5 Household Questionnaire (UNICEF, 2013b) and DHS (NISR, 2006).

Practices surrounding household decision-making were assessed using items from the UNICEF Rwanda and Imbuto Foundation 2015 Early Childhood Development and Family Services Baseline Evaluation (UNICEF & Imbuto Foundation, 2015).



## Quantitative data analysis

Summary statistics for participant children and caregivers were examined at baseline in the total sample ( $n = 22$  children,  $n = 35$  caregivers) and in the analytic sample ( $n = 21$  children,  $n = 19$  caregivers). The analytic sample was restricted to reports from primary caregivers who completed the programme ( $n = 19$ ) and the targeted children ( $n = 21$ ).

Because of the small sample and to avoid bias related to missing data, multiple imputation by chained equations was applied to correct for data missing at random for the HOME and OMCI total scores and subscales, adapting a method for imputation of multi-item scales (Plumpton, Morris, Hughes, & White, 2016). Statistical significance of changes in mean OMCI and HOME scores from baseline to post-assessment and baseline to follow-up were assessed through univariate regression of change scores. Differences in HOME and OMCI scores across time points were further examined at the individual-level using Reliable Change Indices (RCIs) (Jacobson & Truax, 1991; Newnham et al., 2015). RCIs were calculated by taking (a) the difference in post-assessment and baseline scores and the difference in follow-up and baseline scores, (b) dividing the differences by the respective standard error of the difference and (c) comparing the resulting RCI against the critical value of  $T$  ( $T = 2.08$  for 95% confidence level for sample size of  $n = 21$ ). An RCI greater than 2.08 indicated reliable improvement, and an RCI less than  $-2.08$  indicated a reliable decline.

Summary statistics for indicators for harsh punishment and child discipline, shared decision-making, knowledge and attitudes about ECD, child nutrition and health, and WASH practices were analysed at each time point, and change over time was assessed using Wilcoxon Signed-Rank tests.

RCIs were calculated using Excel version 15.16 and all other analyses were conducted using Stata version 14.1.

## Results

### Participant & sample characteristics

Twenty-two children aged 7–36 months ( $n = 13$  female) and 35 caregivers from 20 different households were enrolled in the study. Fifteen of the 20 households were dual caregiver, defined as two caregivers living in the home. Caregivers ranged from 19 to 62 years in age and included biological mothers ( $n = 20$ ), biological fathers ( $n = 13$ ), and grandmothers ( $n = 2$ ). Twenty-five percent ( $n = 5$ ) of households were female-headed-single-caregiver. Sixty-five percent of households ( $n = 13$ ) had both a male and female caregiver. Family structures were diverse with 10% ( $n = 2$ ) intergenerational families (i.e. grandmother in the home). Of the 20 families, 19 (95%) completed the *Sugira Muryango* programme. One male caregiver withdrew from the programme, although the female caregiver and child in this family completed the programme and all assessments.

The analytic sample for all statistical analysis included the 19 mothers and 21 children from the 19 families who completed the programme. Table 2 presents the demographic characteristics of the analytic sample.

### Participant satisfaction

All 33 caregivers who finished the programme completed participant satisfaction assessments post-intervention; 97% of participant caregivers reported being satisfied with the sessions. All caregivers reported being satisfied with facilitators and length and content of sessions; 97% were satisfied with the information gained during sessions. Eighty percent said *Sugira Muryango* met their needs; poverty was cited as a primary reason for remaining unmet needs.

### Parenting outcomes for mother-child dyads

The mean OMCI total score declined by 0.97 points from baseline to post-assessment and increased by 2.32 points from baseline to follow-up (though not significant at  $\alpha = 0.05$ ). Reliable Change Indices

**Table 2.** Household, caregiver, and child characteristics of analytic sample at baseline.

Characteristics	
<b>Households (n = 19)</b>	
Single Caregiver Households, n (%)	4 (21.05)
Intergenerational Households, n (%)	2 (10.50)
Household Size, M (SD)	5.74 (1.52)
Households with >1 child enrolled, n (%)	2 (10.50)
<b>Primary Caregivers (n = 19)</b>	
Maternal Age, M (SD)	32.57 (6.35)
Years of Education Completed, M (SD)	2.94 (1.34)
<b>Children (n = 21)</b>	
Female, n (%)	13 (61.90)
Age in Months, M (SD)	20.40 (11.28)

(RCIs) indicated that from baseline to follow-up, 23.8% of dyads showed reliable improvements in the OMCI caregiver domain score, 9.5% in the OMCI child domain score, and 19.0% of dyads in the OMCI total score. Nine-point-five percent of mother-child dyads had reliable declines in caregiver and total OMCI scores, and 4.8% had reliable declines in the child domain score.

The mean HOME Inventory total score increased from 23.73 (SD = 5.29) points at baseline to 26.02 (SD = 3.59) at post-assessment and 27.34 (SD = 4.48) at follow-up (significant at  $\alpha = 0.05$ ). Mean scores for the HOME Involvement and Learning Materials subscales were also significantly higher at post-assessment ( $p < .01$ ) and follow-up ( $p < .05$ ) relative to baseline. The mean HOME Acceptance domain score was significantly lower at post-assessment (4.75 points, SD = 1.39) compared to baseline (5.85 points, SD = 0.47), although this difference was no longer apparent at follow-up. Mean scores, results from univariate regression of change scores, and RCIs are outlined in Table 3.

### **Harsh punishment & child discipline practices and beliefs**

Indicators for parental use of harsh punishment showed mixed results (see Table 4). The number of caregivers reporting use of psychological aggression toward the child by any household member within the past month increased. Caregivers reporting use of physical punishment initially declined from baseline to post-assessment but increased at follow-up. However, when caregivers were asked to report on their beliefs about whether physical punishment is necessary to raise a child well, the number of caregivers endorsing the statement declined from baseline to post-assessment and follow-up (significant baseline-follow-up decline, Wilcoxon signed rank:  $z = -2.333$ ,  $p = 0.020$ ).

### **Equal decision-making among dual caregivers**

The number of mothers who reported engaging in equal decision-making with male caregivers about enrolling the child in ECD programming increased from baseline to follow-up (although not statistically significant). The number of mothers reporting engaging in equal decision-making with fathers around actions to take when the child is sick significantly increased from baseline to post-assessment (Wilcoxon signed rank:  $z = 2.121$ ;  $p = 0.034$ ). Decisions surrounding the child's diet remained largely a female caregiver decision (presented in Table 4).

### **Knowledge and attitudes about ECD**

Caregiver knowledge and attitudes about ECD and perceptions of caregiver roles also changed over time (although not significant at  $\alpha = 0.05$ ). The number of mothers open to gentler forms of discipline increased (33.3–42.9%), and the number of mothers who perceived fathers' roles as restricted to traditional 'protector and breadwinner' responsibilities decreased (52.4–38.1%). Mothers'

**Table 3.** Main outcomes and rates of reliable improvement for mother-child dyads ( $n = 21$ ).

Scale	Baseline Score, M (SD)	Post-assessment Score <sup>a</sup> , M (SD)	6–13-month Follow-up Score <sup>b</sup> , M (SD)	Percent Reliable Improvement <sup>c</sup>		Percent Reliable Decline <sup>c</sup>	
				Baseline to Post	Baseline to Follow-up	Baseline to Post	Baseline to Follow-up
<b>Observation of Mother-Child Interaction<sup>d</sup></b>							
Caregiver Score	24.57 (5.63)	24.66 (4.76)	27.00 (4.74)	14.3%	23.8%	9.5%	9.5%
Child Score	13.14 (4.74)	12.24 (4.72)	13.49 (3.23)	4.8%	9.5%	9.5%	4.8%
Total Score	38.08 (9.07)	37.11 (8.40)	40.40 (7.22)	4.8%	19.0%	9.5%	9.5%
<b>Home Observation for the Measurement of the Environment<sup>e</sup></b>							
Involvement Score	1.88 (1.30)	3.08 (1.25)**	3.10 (1.54)*	23.8%	23.8%	0.0%	0.0%
Learning Materials Score	2.27 (1.69)	4.00 (1.78)**	3.88 (1.64)*	23.8%	19.0%	0.0%	0.0%
Responsivity Score	7.90 (1.98)	8.16 (2.10)	8.33 (1.78)	9.5%	14.3%	4.8%	4.8%
Variety Score	3.06 (1.26)	3.07 (0.94)	3.38 (0.77)	4.8%	19.0%	0.0%	0.0%
Organization Score	2.76 (1.36)	2.96 (1.13)	2.84 (0.88)	0.0%	0.0%	0.0%	4.8%
Acceptance Score	5.85 (0.47)	4.75 (1.39)**	5.81 (0.59)	9.5%	19.05%	62.0%	19.05%
Total Score	23.73 (5.29)	26.02 (3.59)	27.34 (4.48)*	9.5%	14.3%	4.8%	0.0%

<sup>a</sup>Post-assessments were administered upon completion of *Sugira Muryango*, 5–11 months after baseline. <sup>b</sup>Follow-up assessments were administered 6–13 months after post-assessment (significant change at \* $p < .05$ , \*\* $p < .01$ ,  $t$ -statistic from univariate regression on change score). <sup>c</sup>Indicates the percentage of mother-child dyads who demonstrated either reliable improvement or decline in scores between time points, with a Reliable Change Index above 2.08 or below  $-2.08$  (Jacobson & Truax, 1991). <sup>d</sup>Total score out of 57 points (36 for Caregiver Score, 21 for Child Score) (Rasheed & Yousafzai, 2015). <sup>e</sup>Total score out of 43 points (Variety Score: 5 points, Organization: 6 points, Acceptance: 7 points, Involvement: 5 points, Learning Materials: 9 points, Responsivity: 11 points).

conceptualization of their own role shifted slightly, with five women (23.8%) agreeing that the mother's role is to safely care for the child's health and nutrition at follow-up, compared to eight (38.1%) at baseline (see Table 4).

### Child nutrition and health

Caregiver reports indicated improvement in child dietary diversity. The reported number of children receiving at least four food groups the day before the survey increased significantly from baseline to follow-up (Wilcoxon signed-rank:  $z = 2.000$ ;  $p = 0.046$ ). There was no change in household food insecurity ( $n = 17$ , 85%) or in the number of children receiving the minimum meal frequency. Child health improved along indicators for incidence and treatment for diarrhoea, though trends were not significant (see Table 4).

### Household water, sanitation, and hygiene practices

The number of households treating their drinking water appropriately increased at baseline and follow-up, although changes were not statistically significant. The number of households storing water in closed containers significantly increased from baseline to follow-up (Wilcoxon signed rank:  $z = 2.236$ ,  $p = 0.025$ ) (Table 4).

## Discussion

This open trial demonstrates initial feasibility and acceptability of *Sugira Muryango* for promoting responsive parenting, dual-caregiver decision-making, child health and nutrition status, caregiver knowledge and attitudes toward ECD, and violence among families living in poverty in Rwanda. Results indicate that improvements in stimulation and support provided by maternal caregivers as

**Table 4.** Comparison of baseline and post-assessment/follow-up indicators for harsh punishment, equal decision-making, knowledge and attitudes about ECD, child nutrition and health, and water, sanitation, and hygiene practices.

Indicators	Base-line	Post	6–13-month Follow-up	Baseline to Post-assessment		Baseline to Follow-up	
				$z^a$	$p^a$	$z^b$	$p^b$
<b>Harsh Punishment &amp; Child Discipline Practices and Beliefs (n = 21 Mother-Child dyads)</b>							
Mother/another household member used psychological aggression within past 30 days, n (%)	5 (23.8)	8 (38.1)	8 (38.1)	1.000	0.317	1.342	0.180
Mother/another household member used physical punishment within past 30 days, n (%)	10 (47.6)	7 (33.3)	10 (47.6)	-1.134	0.257	0.000	1.000
Mother/another household member used severe physical punishment within past 30 days, n (%)	1 (4.8)	0 (0.0)	0 (0.0)	-1.000	0.317	-1.000	0.317
Mother/another household member used any form of violent discipline within past 30 days, n (%)	11 (52.4)	10 (47.6)	14 (66.7)	-0.378	0.706	1.134	0.257
Mother/another household member used only nonviolent forms of discipline within past 30 days, n (%)	2 (16.7)	2 (16.7)	4 (22.2)	1.000	0.317	-1.000	0.317
Mother believes physical punishment is necessary to raise a child well, n (%)	10 (47.6)	8 (38.1)	3 (14.3)	-0.707	0.480	<b>-2.333</b>	<b>0.020*</b>
<b>Shared Decision-making (n = 17 Mother-Child dyads from 15 dual caregiver households)</b>							
Mother reports equal decision-making between dual caregivers regarding whether child attends ECD programme, n (%)	8 (47.1)	9 (52.9)	13 (76.5)	0.812	0.417	1.824	0.068
Mother reports equal decision-making between dual caregivers regarding what action to take when child is sick, n (%)	3 (17.7)	8 (47.1)	7 (41.1)	<b>2.121</b>	<b>0.034*</b>	1.414	0.157
Mother reports equal decision-making between dual caregivers regarding what the child eats, n (%)	2 (11.8)	3 (17.7)	1 (5.9)	0.000	1.000	-1.000	0.317
<b>Knowledge and Attitudes about ECD (n = 21 Mother-child dyads)</b>							
Mothers disagree that if parents are too gentle, kids will not listen when they try to discipline, n (%)	7 (33.3)	9 (42.9)	12 (57.14)	-0.447	0.655	-1.265	0.206
Mothers agree that a father's role is to discipline, pay school fees, and provide at home, n (%)	11 (52.4)	8 (38.1)	7 (33.3)	-1.134	0.257	-1.414	0.157
Mothers agree that a mother's role is to care for the child's health and nutrition, n (%)	8 (38.1)	9 (42.9)	5 (23.8)	0.333	0.739	-1.134	0.257
<b>Child Nutrition &amp; Health (n = 21 Children)</b>							
Children met the criteria for minimum dietary diversity, receiving at least 4 food groups in the 24 h preceding the survey, n (%)	2 (9.5)	4 (19.0)	6 (28.6)	0.816	0.414	<b>2.000</b>	<b>0.046*</b>
Child had diarrhoea in two weeks preceding the survey, n (%)	9 (42.9)	5 (23.8)	5 (23.8)	-1.265	0.206	-1.414	0.157
Among children with diarrhoea, sought treatment, n (%)	6 (66.7)	3 (60.0)	5 (100.0)	-	-	1.000	0.317
<b>Household Water, Sanitation, and Hygiene Practices (n = 19 households)</b>							
Household appropriately treats water before drinking, n (%)	6 (31.6)	9 (47.4)	10 (52.6)	1.732	0.083	1.633	0.103
Household stores water in closed containers, n (%)	1 (5.3)	5 (26.3)	6 (33.3)	1.633	0.103	<b>2.236</b>	<b>0.025*</b>

<sup>a</sup>Wilcoxon Signed-Rank Test assessing significant differences from baseline to post-assessment; \* $p < .05$ . <sup>b</sup>Wilcoxon Signed-Rank Test assessing significant differences from baseline to follow-up; \* $p < .05$ .

measured by the HOME Inventory were strengthened and sustained from post-assessment to follow-up. Significant improvement in the HOME Involvement and Learning Materials domains suggests that *Sugira Muryango* is appropriate for targeting caregiver capacities to engage children in their daily routines and provide suitable play and learning materials. Declines in caregiver scores in the HOME Acceptance domain indicate that the *Sugira Muryango* curriculum could be strengthened to limit caregivers' use of punishment.

Limited effects on reducing family violence are noteworthy and merit attention in further intervention research. It is possible that behaviour change could eventually follow given a longer follow-up period. Differences in reported behaviour change between baseline and follow-up may also reflect caregiver comfort in reporting such stigmatized topics, such as harsh treatment of children. Recent iterations of the curriculum have focused on strengthening content around harsh punishment to more effectively address child discipline attitudes and practices.

Our results resonate with those of other home-visiting ECD interventions which have shown promise in LMIC settings, including South Africa, Pakistan, and Colombia (Richter et al., 2017; Rotheram-Borus et al., 2014; Yousafzai, Rasheed, Rizvi, Armstrong, & Bhutta, 2014). *Sugira Muryango* expands upon these interventions by demonstrating the opportunities inherent in linking ECD and social protection programmes. Though not all participant families received social protection services during the open trial, *Sugira Muryango* is designed to address the needs of Rwanda's most vulnerable, VUP-eligible families. Its home-visiting approach allows coaches to involve a range of family members, including fathers, and to decrease barriers related to transportation and distance that can hamper purely centre-based ECD approaches. Complementing centre-based approaches with ECD home-visiting and group work interventions can provide a continuum of services, strengthening the impact of ECD investment, especially for reaching the most vulnerable and addressing complex family issues. Active coaching and strengths-based models also help families draw on their own resources to better navigate formal and informal support structures. The value of the programme to vulnerable families is evident in the high satisfaction ratings they gave as well as their willingness to recommend it to others.

The upcoming larger trial will further examine the *Sugira Muryango's* impact in combination with VUP social protection services to explore the effects of both classic and expanded VUP public works programmes on child and family outcomes. This pilot study has also illuminated barriers and facilitators to ensuring fidelity in delivery of the intervention. We have learned that beyond the initial training, emphasis must be placed on fidelity monitoring and quality improvement. In subsequent research with the intervention, expert coaches have been reviewing audiotapes of home-visiting coaching sessions done by new workers. This approach then gives them a platform for offering targeted problem solving, role-play and practice to prepare for their next home visit.

In future research, *Sugira Muryango* could be further adapted to make explicit links to ECD centres and include a mix of both group- and family-based sessions, creating opportunities for social support among participants. Of the improvements observed, significant changes in hygiene and shared decision-making show tremendous promise. Should such patterns continue in the larger, fully-powered trial, there is potential to layer in other nutritional interventions, such as food or micronutrient supplementation, to bolster the effects observed with coaching alone.

Of additional importance, this open trial served to refine *Sugira Muryango* based on the experiences of participants and coaches, which strengthened the quality of *Sugira Muryango* materials and intervention tools for future implementation, evaluation, and diffusion. To improve the feasibility of the modularized content, the *Sugira Muryango* intervention was condensed from 22 to 15 modules between the phase of delivering to the first 10 households and the last 10 households. Because the first 10 households lived in a more rural area, the challenges and nature of referral resources were more robust than the peri-urban region in which the remaining 10 households lived.

While results of this open trial are promising, study limitations must be noted. Although coaches reported that participation rates were strong, we do not have fidelity ratings that capture quality of intervention delivery. Such data collection and quality improvement mechanisms will be essential in the larger trial. Furthermore, as a feasibility trial, this research did not involve a control group and was not adequately powered to detect small changes over time or comparisons between rural and urban subsamples. However, even with limited statistical power, our analyses detected significant changes both immediately post-treatment and at a modest follow-up period of at least six months, and more broadly the nonsignificant trends tended to show positive effects of *Sugira Muryango*. While initial results demonstrate the acceptability and feasibility of *Sugira Muryango*, future research

should investigate intervention effectiveness, costs, quality, fidelity issues, and maintenance of effects longitudinally.

## Conclusion

Integrating the ECD and social protection agenda is a promising area for helping children and families break intergenerational cycles of poverty and violence. Family home-visiting interventions have an important role to play in promoting ECD globally. Interventions like *Sugira Muryango* should be investigated further through fully-powered effectiveness trials in combination with social protections intervention and implementation research.

## Notes

1. 'Social protection is a set of policies and programmes aimed at preventing or protecting all people against poverty, vulnerability, and social exclusion throughout their lifecycles, with a particular emphasis towards vulnerable groups' (Inter Agency Social Protection Assessments (ISPA), 2017).
2. In Rwanda, Ubudehe categorization is a household-based categorization used since 2002 as the basis for targeting access to social benefits and services. Ubudehe categorization is based on community-based social-economic mapping. Initially, six categories were identified to stratify the population according to social and economic well-being. Ubudehe categories 1 and 2 were considered the most vulnerable. In 2014, Ubudehe categories were reviewed and the 2015 Ubudehe categorization re-ranked Rwandan households into 4 categories, with 1 being the most socially and economically vulnerable households.

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## Disclosure statement

No potential conflict of interest was reported by the authors.

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## References

- Ascend at The Aspen Institute, & Bernard van Leer Foundation. (2016, September 12). Breaking the cycle of poverty: Whole family approach. Retrieved from <https://bernardvanleer.org/publications-reports/breaking-the-cycle-of-poverty/>
- Attanasio, O. P., Fernández, C., Fitzsimons, E. O., Grantham-McGregor, S. M., Meghir, C., & Rubio-Codina, M. (2014). Using the infrastructure of a conditional cash transfer program to deliver a scalable integrated early child development program in Colombia: Cluster randomized controlled trial. *British Medical Journal*, *349*, g5785.
- Bastagli, F., Hagen-Zanker, J., Harman, L., Barca, V., Sturge, G., Schmidt, T., & Pellerano, L. (2016). *Cash transfers: What does the evidence say? A rigorous review of programme impact and of the role of design and implementation features*. London, UK: Overseas Development Institute.
- Bearslee, W. R. (1998). Prevention and the clinical encounter. *American Journal of Orthopsychiatry*, *68*(4), 521–533.
- Bearslee, W. R., Gladstone, T. R., Wright, E. J., & Cooper, A. B. (2003). A family-based approach to the prevention of depressive symptoms in children at risk: Evidence of parental and child change. *Pediatrics*, *112*(2), e119–e131.
- Bearslee, W. R., Paez-Soto, A., Herrera-Amighetti, L. D., Montero, F., Herrera, H. C., Llerena-Quinn, R., ... Alvarado, M. D. (2011). Adaptation of a preventative intervention approach to strengthen families facing adversities, especially depression. Costa Rica: Initial systems approaches and a case example. *International Journal of Mental Health Promotion*, *13*(2), 5–13.



- Beardslee, W. R., Salt, P., Versage, E. M., Gladstone, T. R., Wright, E. J., & Rothberg, P. C. (1997). Sustained change in parents receiving preventive interventions for families with depression. *American Journal of Psychiatry*, *154*(4), 510–515.
- Betancourt, T., Ng, L. C., Kirk, C. M., Brennan, R. T., Beardslee, W. R., Stulac, S., ... Sezibera, V. (2017). Family-based promotion of mental health in children affected by HIV: A pilot randomized controlled trial. *Journal of Child Psychology and Psychiatry*, *58*(8), 922–930.
- Betancourt, T., Ng, L. C., Kirk, C. M., Munyanah, M., Mushashi, C., Ingabire, C., ... Sezibera, V. (2014). Family-based prevention of mental health problems in children affected by HIV and AIDS: An open trial. *AIDS*, *28*(Suppl 3), S359–S368.
- Biddlecom, A., Awusabo-Asare, K., & Bankole, A. (2009). Role of parents in adolescent sexual activity and contraceptive use in four African countries. *International Perspectives on Sexual and Reproductive Health*, *35*(2), 72–81.
- Biersteker, L. (2012). Early childhood development services: Increasing access to benefit the most vulnerable children. In K. Hall, I. Woolard, L. Lake, & C. Smith (Eds.), *South African child gauge 2012* (pp. 52–57). Cape Town: Children's Institute, University of Cape Town.
- Black, M. M., Walker, S. P., Fernald, L. C. H., Andersen, C. T., DiGirolamo, A. M., Lu, C., ... Grantham-McGregor, S. (2017). Early childhood development coming of age: Science through the life course. *Lancet*, *389*(10064), 77–90.
- Britto, P. R., Lye, S. J., Proulx, K., Yousafzai, A. K., Matthews, S. G., Vaivada, T., ... Bhutta, Z. A. (2017). Nurturing care: Promoting early childhood development. *The Lancet*, *389*(10064), 91–102.
- Caldwell, B. M., & Bradley, R. H. (2003). *Home observation for measurement of the environment: Administration manual*. Little Rock, AR: Authors.
- Center on the Developing Child. (2017). *Key concepts: Serve and return*. Harvard University. Retrieved from <https://developingchild.harvard.edu/science/key-concepts/serve-and-return/>
- D'Angelo, E. J., Llerena-Quinn, R., Shapiro, R., Colon, F., Rodriguez, P., Gallagher, K., & Beardslee, W. R. (2009). Adaptation of the preventive intervention program for depression for use with predominantly low-income Latino families. *Family Process*, *48*(2), 269–291.
- Engle, P. L., Fernald, L. C., Alderman, H., Behrman, J., O'Gara, C., Yousafzai, A., ... Iltus, S. (2011). Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *The Lancet*, *378*, 1339–1353.
- Farmer, P. E., Nutt, C., Wagner, C. M., Sekabaraga, C., Nuthulaganti, T., Weigel, J. L., ... Drobac, P. C. (2013). Reduced premature mortality in Rwanda: Lessons from success. *BMJ*, *346*, f65.
- Fernald, L., & Hidrobo, M. (2011). Effect of Ecuador's cash transfer program (Bono de Desarrollo Humano) on child development in infants and toddlers: A randomized effectiveness trial. *Social Science & Medicine*, *72*(9), 1437–1446.
- Gamer, A. S. (2013). Home visiting and the biology of toxic stress: Opportunities to address early childhood adversity. *Pediatrics*, *132*(Suppl 2), S65–S73.
- Grantham-McGregor, S., Cheung, Y. B., Cueto, S., Glewwe, P., Richter, L., & Strupp, B. (2007). Developmental potential in the first 5 years for children in developing countries. *The Lancet*, *369*(9555), 60–70.
- Howard, K. S., & Brooks-Gunn, J. (2009). The role of home-visiting programs in preventing child abuse and neglect. *The Future of Children*, *19*(2), 119–146.
- Inter Agency Social Protection Assessments (ISPA). (2017). *Core diagnostic instrument, "what matters" guidance note*. Retrieved from <http://ispatools.org/core-diagnostic-instrument/>
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*(1), 12–19.
- Messam, T., McKay, M.M., Kalogerogiannis, K., & Alicea, S. (2010). Adapting a family-based HIV prevention program for homeless youth and their families: The HOPE (HIV prevention Outreach for Parents and Early adolescents) family program. *Journal of Human Behavior in the Social Environment*, *20*(2), 303–318.
- Ministry of Finance and Economic Planning of Rwanda. (2002). *Poverty reduction strategy paper*. Kigali, Rwanda: Government of Rwanda.
- National Institute of Statistics of Rwanda (NISR). (2006). *Rwanda demographic and health survey 2005*. Calverton, MD: NISR, ORC Macro.
- National Institute of Statistics of Rwanda (NISR). (2015). *Main indicators report: Rwanda integrated household living conditions survey (EICV) 2013/14*. Kigali, Rwanda: Republic of Rwanda.
- National Institute of Statistics of Rwanda (NISR) [Rwanda], Ministry of Health (MOH) [Rwanda], and ICF International. (2015). *Rwanda demographic and health survey 2014–15*. Rockville, MD: NISR, MOH, and ICF International.
- Newnham, E. A., McBain, R. K., Hann, K., Akinsulure-Smith, A. M., Weisz, J., Lilienthal, G. M., ... Betancourt, T. S. (2015). The youth readiness intervention for war-affected youth. *Journal of Adolescent Health*, *56*(6), 606–611.
- Plumpton, C. O., Morris, T., Hughes, D. A., & White, I. R. (2016). Multiple imputation of multiple multi-item scales when a full imputation model is infeasible. *BMC Research Notes*, *9*, 45.
- Podorefsky, D. L., McDonald-Dowdell, M., & Beardslee, W. R. (2001). Adaptation of preventive interventions for a low-income, culturally diverse community. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(8), 879–886.
- Rasheed, M. A., & Yousafzai, A. K. (2015). The development and reliability testing of an observational tool for assessing mother-child interactions in field studies- experience from Pakistan. *Child: Care, Health and Development*, *41*(6), 1161–1171.

- Republic of Rwanda Ministry of Gender and Family Promotion. (2016). *Early childhood development policy, Uburere Buruta Ubuvuke, 2016*. Kigali, Rwanda: Government of Rwanda.
- Rich, M. L., Miller, A. C., Niyigena, P., Franke, M. F., Niyonzima, J. B., Socci, A., ... Binagwaho, A. (2012). Excellent clinical outcomes and high retention in care among adults in a community-based HIV treatment program in rural Rwanda. *Journal of Acquired Immune Deficiency Syndromes*, 59(3), e35–e42.
- Richter, L. M., Daelmans, B., Lombardi, J., Heymann, J., Boo, F. L., Behrman, J. R., ... Darmstadt, G. L. (2017). Investing in the foundation of sustainable development: Pathways to scale up for early childhood development. *The Lancet*, 389(10064), 103–118.
- Rotheram-Borus, M. J., Tomlinson, M., le Roux, I. M., Harwood, J. M., Comulada, S., O'Connor, M. J., ... Worthman, C. M. (2014). A cluster randomised controlled effectiveness trial evaluating perinatal home visiting among South African mothers/infants. *PLoS ONE*, 9(10), e105934. Retrieved from <http://doi.org.ezp-prod1.hul.harvard.edu/10.1371/journal.pone.0105934>
- Shonkoff, J. P., & Fisher, P. A. (2013, November). Rethinking evidence-based practice and two-generation programmes to create the future of early childhood policy. *Development and Psychopathology*, 25(4 Pt 2), 1635–1653.
- Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., Garner, A. S., ... Wood, D. L. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129(1), e232–e246.
- Singla, D. R., Kumbakumba, E., & Aboud, F. E. (2015). Effects of a parenting intervention to address maternal psychological wellbeing and child development and growth in rural Uganda: A community-based, cluster-randomised trial. *Lancet Global Health*, 3(8), e458–e469.
- Sparrow, J., Armstrong, M. I., Bird, C., Grant, E., Hilleboe, S., Olson-Bird, B., ... Beardslee, W. R. (2011). Community-based interventions for depression in parents and other caregivers on a northern plains native american reservation. In M. C. Sarche, P. Spicer, P. Farrell, & H. E. Fitzgerald (Eds.), *American Indian and Alaska native children and mental health: Development, context, prevention, and treatment* (pp. 205–232). Denver, CO: Praeger.
- UNAIDS. (2012). Country progress report: Rwanda. Geneva, Switzerland.
- UNICEF. (2009). Multiple indicator cluster surveys - Round 4. Retrieved from [www.childinfo.org/mics4\\_background.html](http://www.childinfo.org/mics4_background.html). Accessed September 30, 2017
- UNICEF. (2013a). Multiple indicator cluster surveys / MICS5: Questionnaire for children under five (MICS.U5). Retrieved from <http://mics.unicef.org/tools?round=mics5>
- UNICEF. (2013b). Multiple indicator cluster surveys / MICS5: Household questionnaire. Retrieved from <http://mics.unicef.org/tools?round=mics5>
- UNICEF & Imbuto Foundation. (2015). Early childhood development and family services: Baseline evaluation in 20 sites in Rwanda. Retrieved from [https://www.unicef.org/evaldatabase/files/ECD\\_and\\_F\\_Baseline\\_Evaluation\\_Rwanda.pdf](https://www.unicef.org/evaldatabase/files/ECD_and_F_Baseline_Evaluation_Rwanda.pdf)
- UNICEF & World Health Organization. (2012). *Care for child development: Improving the care of young children*. Geneva: World Health Organization.
- Yousafzai, A. K., Rasheed, M. A., Rizvi, A., Armstrong, R., & Bhutta, Z. A. (2014). Effect of integrated responsive stimulation and nutrition interventions in the Lady Health Worker programme in Pakistan on child development, growth, and health outcomes: a cluster-randomised factorial effectiveness trial. *The Lancet*, 384(9950), 1282–1293.