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Family centered early childhood development: a case of Rongo Subcounty, Migori Kenya

Abstract

The early childhood period from conception to three years is critical in a child's health, well-being and brain development. Proper care and stimulation therefore, contributes to a child's productivity that lasts throughout childhood and adulthood. Studies have shown that globally, 43% of children under five years are at risk of failing to achieve their developmental potential. In Sub-Saharan Africa (SSA), this portion is approximately 66%. The Kenya Demographic Health Survey (KDHS) 2022 revealed that 21% of children in Kenya aged 24-59 months are not developmentally on track. A higher percentage of children in urban (87%) than rural (73%) areas are developmentally on track. The percentage of children developmentally on track increases with increasing mothers' education from 51% among children whose mothers have no education to 91% among those whose mothers have more than secondary education. The percentage of children developmentally on track also increases with increasing household wealth from 61% among children in the lowest wealth quantile to 93% among those in the highest quantile. This therefore calls for parenting/caregiving programmes that targets parents/caregivers from the lowest household wealth index as well as those with mothers having lowest education levels. Lwala Community Alliance with funding from Comic Relief piloted a Family Centered early childhood development (ECD) program in North Kamagambo ward, Rongo Subcounty, Migori County Kenya in 2021. The long-term goal of the program was to ensure children under the age of five years reach their developmental potential in a nurturing care environment supported by responsive and sensitive men and women caregivers. The community health volunteers (CHW) through household visitation, group parenting sessions, and facility-based education sessions implemented the program. This was meant to improve outcomes across child health, caregiver support, health worker capacity, and the enabling environment. Building on the success of the pilot, an evaluation and baseline study was conducted to explore the outcome of the pilot intervention and to upscale the program into three new wards in Rongo Subcounty. To achieve this, baseline data was collected in three areas (East Kamagambo, Central Kamagambo and South Kamagambo) where scaling up of the program will happen before commencement of intervention activities. Findings revealed that the primary caregivers play an important role in caring for young children during the day by providing care for children's basic needs. It was noted that households in North Kamagambo introduced complementary foods after the recommended six months as compared to the other three wards where other foods were introduced to babies before six months are over. Findings further revealed that there was a significant increase in knowledge especially on child rights and abuse from baseline, midline and end line in North Kamagambo with 86%, 90% and 91%, respectively. Caregivers' ability to identify signs of a child who has been abused seemed good across the four locations. Caregivers in North Kamagambo provided higher levels of nurturing care to their children compared to caregivers in other wards.

Keywords: caregiving, community health volunteers, family centered program, group parenting, home visits, male caregivers, parenting

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Introduction

The first three years of a child's development are critical in enhancing a child's health, well-being and brain development. Providing a conducive and stimulation environment for the child, contributes to a child's growth, development and productivity that lasts throughout childhood and adulthood.[1–4] Studies have shown that globally, 43% of children under five years are at risk of failing to achieve their developmental potential. In Sub-Saharan Africa (SSA), this portion is approximately 66%.[4–6]

Increasing evidence has further shown that the earliest years of life, from conception to age five, are a sensitive period for growth and development influenced by a child's immediate caregiving environment. The Kenya Violence against Children (VAC) study[7] revealed that 66 percent of females and 73 percent of males experienced physical violence at childhood. Protection issues for the youngest children also remain hidden. There is a gap in identifying and responding to the specific protection needs for this age group in a timely manner.[8]

Ensuring that children are provided with a healthy and stimulating environment is important in enhancing children's growth and development that will have impressive returns on investment to the public. Masse[9] maintain that there is a range of returns between $4 and $9 for every dollar invested in early learning opportunities for children from low-income areas leading to increased earnings.

The Kenya Demographic Health Survey[10] revealed that 21% of children in Kenya aged 24-59 months are not developmentally on

track. The percentage of children developmentally on track increases with increasing mothers' education from 51% among children whose mothers have no education to 91% among those whose mothers have more than secondary education. The percentage of children developmentally on track also increases with increasing household wealth from 61% among children in the lowest wealth quantile to 93% among those in the highest quantile (KDHS, 2022).

Eighteen percent of children under five are stunted, a decrease from 26% in 2014. Stunting is higher among children in rural areas 20% than children in urban areas 12%. Stunting decreases with increasing wealth index from 28% in the lowest quantile to 9% in the highest quantile. Twenty two percent of children born to mothers with no education are stunted as compared with 9% of children born to mothers with more than secondary education. Under five mortality declined from 52/1000 live births in 2014 to 41/1000 live births in 2022. Infant mortality declined from 39/1000 live births in 2014 to 32/1000 live births in 2022. Under five mortality rates are higher for males than females 45 deaths versus 35 deaths per 1000 live births respectively (KDHS, 2022). Mothers' education, household wealth as well as whether children are from rural or urban are important indicators in children's development in Kenya. Article 53 of the constitution of Kenya 2010 provides for every young child a right to basic nutrition, healthcare, free basic education as well as protection from abuse and all forms of violence (Republic of Kenya, 2010). It further provides for a child's right to parental care and protection. Providing nurturing care and these rights therefore, is foundational to building the human capital needed for achieving Kenya's Vision 2030 and the Sustainable Development Goals (SDGs). Thus, every young child must receive nurturing care across all five domains in age-appropriate combinations to ensure they develop physically, cognitively, socially and emotionally.

Barth et al.,[11] argue that significant adversity impairs development in the first three years of life and the more adversity a child faces, the greater the odds of developmental delay. Risk factors such as poverty, caregiver mental illness, child maltreatment, single parent, and low maternal education have a cumulative negative impact on a child's development. Maltreated children exposed to as many as six additional risks face a 90-100% likelihood of having one or more delays in their cognitive, language, or emotional development.[11] The three additional wards in Rongo Sub County present these characteristics in two scenarios. There exist families with high and low education and income respectively, and adversities. Majority of the children face barriers to educational achievement due to low literacy levels among caregivers which has been evidenced by household surveys conducted by Lwala. Moreover, adversities such as poverty, caregiver mental illness and child maltreatment further exacerbate the situation.

Building on the successes of the pilot project, Lwala sought to expand the project to three new locations and increase the population served from 20000 in the pilot to 125000 by 2025. The baseline survey sought to establish the status of implementation of nurturing care in Kamagambo, Central, South and East. The outcome evaluation sought to establish whether there was improvement in caregiving practices in North Kamagambo where piloting of the Lwala project was implemented in 2021.

Review of literature

The infant's brain require a nurturing care environment and depends on it for healthy growth and development. Nurturing care refers to conditions created by public policies, programmes and services that enable communities and caregivers to ensure children's good health and nutrition, and protect them from threats. Nurturing care also involves providing young children opportunities for early learning, through interactions that are responsive and emotionally supportive. Scientific findings from a range of disciplines have converged revealing that, during pregnancy and the first three years after birth, critical elements of a child's health, well-being and productivity are laid.[12] This will last throughout childhood, adolescence and adulthood. A new-born baby's brain contains almost all the neurons it will ever have at birth. By age 2, massive numbers of neuronal connections have been made in response to interactions with the environment, and especially interactions with caregivers.[12]

Conel[13] maintains that the early years matter because, in the first few years of life, seven hundred new neural connections are formed every second. Neural connections are formed through the interaction of genes and a baby's environment and experiences, especially "serve and return" interaction with adults, or what developmental researchers call contingent reciprocity. These are the connections that build brain architecture, the foundation upon which all later learning, behavior, and health depends. Thus, providing a nurturing care environment is critical in enhancing a child's development.

Neurological and behavioral research reveals that early childhood exposure to violence can affect brain development thereby increasing the child's susceptibility to a range of mental and physical health problems. The health problems can span into adulthood including anxiety or depressive disorders, cardiovascular health problems and diabetes.[14–17]

To mitigate the above challenges, there is need to integrate nurturing care into existing services which requires strengthening the existing skills of people who work with families that have young children. The opportunities include child health and nutrition, preconception care, antenatal care, postnatal care, immunization, growth monitoring, sick child care, nutrition counseling, management of acute malnutrition and rehabilitation, and services for children with developmental difficulties or disabilities among others. Not only the practices themselves, but also the way they are performed in relation to affection and responsiveness to the child's survival, growth and development.[18]

Research questions

The study sought to establish answers to the following questions:

1. What is the status of children accessing integrated ECD service in East, South and Central Kamagambo?
2. What is the status of CHWs', CHAs and Lwala staff knowledge & capacity for effective delivery of ECD services?
3. What is the status of ECD multi sectoral coordination between subnational government partners, partner organizations and Lwala in ensuring provision of nurturing care for infants and young children aged 0-5 in the targeted communities?

Methodology

A mixed-methods approach involving both qualitative and quantitative data collection was employed for this study.

Population of the study

Caregivers with children under 3 years children were sampled from East, Central and South Kamagambo respectively while Caregivers with under 5 Years children were sampled in North Kamagambo. This is because in North Kamagambo, a pilot project had been implemented in 2021 and therefore evaluating the project impact.

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Sampling technique and sample size

Stratified random sampling was used to draw representative samples from the population. To get the number to be surveyed from the caregivers' population, a formula adopted by Cochran 1963 was used to determine the sample size as 196 at 7% level of significance.

n = N/ [1 + N (e) 2]

Where; n – sample size

N – Population size

e – Level of significance

Using this sample size determination technique, the sample in table 1 was arrived at for caregivers to be interviewed in the various locations and accounting for 10% non-response rate.

Stratified sampling was utilized in each ward with the strata being the community units. All community units in a given ward were given equal allocation. A list of all supported caregivers was generated from the Lwala Commcare System and employed systematic sampling and selected the 3rd caregiver to be sampled from each community unit. Table 1 presents the population and sample size for the study.

Table 1 shows that a sample size of 808 caregivers was sampled from a population of 7030 caregivers drawn from the four regions targeted for this study.

Sample for Focus group discussions

Purposive sampling was utilized to identify focus group discussion participants. There were four focus group discussions; one in each ward for community health workers (CHWs), the same was applied for caregivers (male and females). As for the community health assistant (CHAs) there was one focus group discussion for the whole of Rongo sub county.

In total, there were 20 focus-group discussions (FDGs) comprising of 129 participants as indicated in Table 2. In total 27 male caregivers, 36 female caregivers, 31 CHWs and 35 LAACs participated in FGDs.

Table 1 Caregivers population and sample size

Region	Caregivers Population	Sample size
North Kamagambo	1924	205
East Kamagambo	1845	203
Central Kamagambo	1851	203
South Kamagambo	1410	197
Total	**7030**	**808**

Table 2 Focus groups discussion participants per region

Region	Male caregivers	Female Caregivers	CHWs	LAACs	Total
North Kamagambo	5	9	7	9	30
East Kamagambo	8	12	6	7	33
Central Kamagambo	8	7	11	8	34
South Kamagambo	6	8	7	11	32
Total	**27**	**36**	**31**	**35**	**129**

Sample for key informant interviews

In addition to the FGDs, in-depth interviews with 10 participants purposively selected based on their expertise, knowledge and practice in early childhood care and development were conducted. Those interviewed at the national level were drawn from the National Council of Children Services; the Ministry of Education; Ministry of Health in the Division of Neonatal Child Health as well as a partner organization. At the county/sub-county level officers drawn nutrition, education and children's services as well as from ministry of health were interviewed.

Data collection

Mixed methods approach involving quantitative and qualitative data collection tools was utilized to collect data for this study. To establish the status of children with access to integrated early childhood development services, the research team used the Lwala existing digital data collection platform (Commcare) inbuilt in android phones used by community health workers.

To investigate the status in caregiver capacity to provide a nurturing care environment for all children under the age of 5 years, the RISE tool was utilized to document caregivers' capacity to provide a nurturing care environment in relation to children', safety and security and early learning opportunities.

Caregiver assessment at baseline was administered to caregivers of children aged 0-5 in target communities in Rongo Sub-County. Enumerators completed household observation items during baseline survey administration. Items on the caregiver assessment were derived from the RISE Tools for Caregivers. Questions on the household survey/observation tool fall in the domains of general demographic information/household composition; birth registration; child health and nutrition; caregiver access to ECD-related services; knowledge and practices on child development; play and communication; child protection; children's rights; caregiver wellbeing; and water, sanitation, and health.

Selected caregivers participated in focus group discussions as well as, informal child protection actors, and CHWs at baseline. Caregivers' questions focused on obtaining a more in-depth look at what caregivers believe about various aspects of nurturing care and what their access to ECD-related services is like.

To determine the status in multi sector collaboration for ECD service delivery the study at baseline sought to document whether quarterly meetings are held. Key informant interviews and focus group discussions were utilized to capture this information. Key informant interviews with national and subnational multi-sectoral government partners; development partners; those in mentoring positions (CHAs). Questions were focusing on obtaining a more in-depth look of informants' current knowledge of nurturing care as well as what the current situation in their respective organizations looks like regarding ECD-related services and nurturing care as well as child protection.

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Data management and quality assurance during the survey

The interviewers entered participant data on tablet-based questionnaires using the Kobo Collect mobile application. Electronic data entering at the point of contact with participants greatly reduced the risk of error. Data was kept password protected and stored on a secure server.

Data processing and analysis

Quantitative data was exported to Stata, a statistical software for management and analysis. Error check syntax was used to identify outliers and any errors and miscalculation in the dataset. Tables and figures were generated per thematic area for reporting and narration provided to expound on the results. Qualitative data was transcribed and organized into Dedoose software, a platform for analyzing qualitative and mixed methods research.

Ethical considerations

Ethical clearance was sought from Kenyatta University's Ethics Review Committee. The research license was sought from the National Commission for Science Technology and Innovation (NACOSTI). This was to allow the research team to conduct research in the four study sites.

Before beginning data collection, the interviewers obtained informed consent from participants. The interviewers read and provided a standardized script explaining the purpose of the study and the policy of confidentiality. Participants were informed that they may skip any question or stop the interview entirely should they wish to do so. Participants were also informed that their participation in the study and their survey answers would not affect their position as beneficiaries of Lwala programs or staff members of any of the involved workplaces. All questions from the participants were answered before the consent form was signed. No minors were approached for this study. The signed consent forms were collected and kept in a secure, locked location.

Study limitations and risks

A major assumption in this study was that the family ECD model works as it should where the research team assume that training stakeholders at the sub county level, like Ministry of Health Officials, CHW supervisors and members of the Multisectoral Coordination Team will develop a cadre of TOTs who will transfer the knowledge to CHWs and community groups. The CHWs and community groups would train caregivers and empower them to deliver nurturing care and that overall, these activities would develop an enabling environment for children to survive and thrive.

Study findings

Response rate

Findings from the study revealed that eight hundred and eight caregivers participated in the study providing a 100% response rate for quantitative data sample. On the other hand, one hundred and twenty nine respondents participated in focus group discussions, while ten respondents participated in key informant interviews.

Findings on access to early childhood development services

The first research question sought to establish the status of access to integrated early childhood development services to act as a benchmark of gauging whether implementation of the intervention would facilitate increase of those numbers. Findings from quantitative data on services provided to children in relation to enrollment to the National Health Insurance Fund (NHIF), possession of birth certificates for children and place of delivery are presented in this section.

Enrolment in the National Health Insurance (NHIF): NHIF is the oldest government insurance scheme in Africa. As the primary provider of health insurance in Kenya, its mandate is to provide access to quality and affordable health care for all Kenyans. NHIF membership is compulsory for all salaried employees. However, enrolment remains low at 24% in South Kamagambo, 25% in East Kamagambo, 35% in Central Kamagambo and 32% in North Kamagambo, giving an average of 29%, out of which 64.2% had their status active as seen in figures 1 and 2 and in table 3. The low enrolment could be attributed to the fact that majority 40.3 % of participants revealed that they do not earn income or were engaging in manual work, 16.3% on agricultural activities 21.4% which do not provide consistent income that could enable them contribute regularly to NHIF. Hence, this is likely to affect their ability to access healthcare services for their children.

Central Kamagambo had the highest NHIF enrolment at 35.4%, probably due to its cosmopolitan nature followed by North Kamagambo at 32.7% as seen in Table 3.

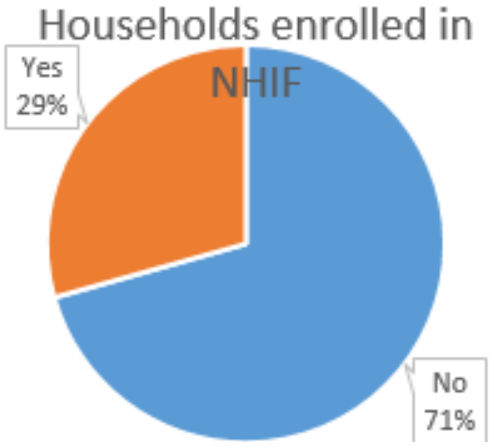

Figure 1 Percentage of households enrolled into NHIF in Rongo Subcounty.

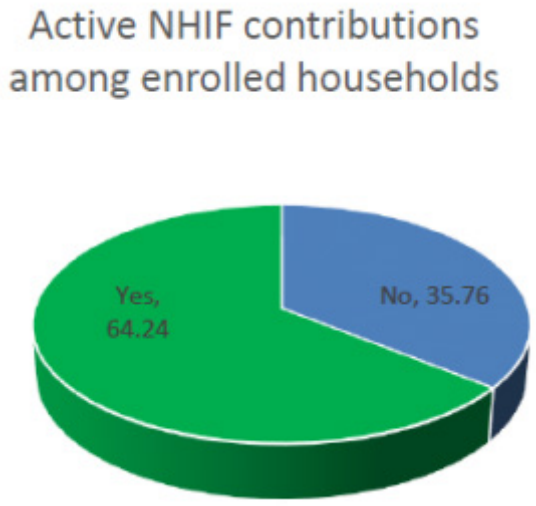

Figure 2 Percentage of Active NHIF contributors among enrolled households.

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Table 3 Distribution of NHIF enrolment by ward

	Catchment				
Household enrolled in health insurance (NHIF)	**Central Kamagambo**	**East Kamagambo**	**North Kamagambo**	**South Kamagambo**	**Total**
No	655(64.6%)	810(74.4%)	802(67.3%)	870(76%)	3137(70.7%)
Yes	359(35.4%)	279(25.6%)	390(32.7%)	275(24%)	1303(29.3%)
Total	1014(100%)	1089(100%)	1192(100%)	1145(100%)	4440(100%)

Caregivers in response to the challenges they experience in providing care for their children's health, revealed that when children fall ill, they are not able to meet the cost of treatment. Hence, with 71% not enrolled in NHIF, means their children are at risk of not getting health care services. NHIF is therefore, an important service that caregivers could be encouraged to enroll to support in paying for children's healthcare costs. It is also one of the issues mentioned by caregivers that they would have liked to know about before becoming caregivers. Male caregivers reported this by saying:

*"A child might fall sick when you don't have anything, you'll end up taking a loan that you don't know how you will pay so it is hard to take care of the children especially their health" (*R2, Male caregiver in East Kamagambo). *"Things like medical cover are very important and I wish I had known about them earlier. It could [would] have been very helpful" (*R3, Male Caregiver, East Kamagambo). *"When the child is sick and you have used the money to take care of the medication. You have to look for other ways to provide food hence little time to be with the child. Yes, Level of living standard changes like ability to balance the diet for our children becomes hard" (R8*, Male caregiver, East Kamagambo).

Possession of birth certificate

Lwala Community Alliance through their ECD program had an elaborate plan to ensure all children within North Kamagambo in their intervention site possess birth certificates. This program aimed to expand to the other three wards within Rongo Subcounty. From the study, only 27% of children below the age of 5 years had a birth certificate across the entire Rongo sub-county as seen in figure 3. Majority (73%) did not have. This implies that either parents are not sensitized on the importance of children getting birth certificates or, that the process of acquiring birth certificate could be lengthy hence parents are not able to follow through until they get the certificate. It is also possible that some parents are not keen in following up to ensure their babies are registered to acquire birth certificate.

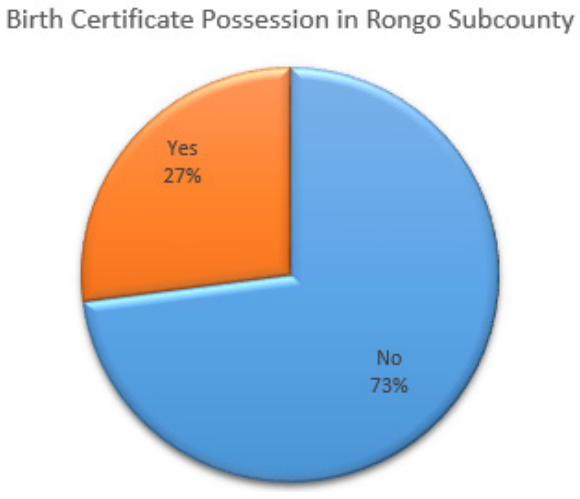

Figure 3 Birth Certificate possession in Rongo Subcounty.

East Kamagambo ward had the lowest birth certificate possession at 14.6% as shown on Table 4. In comparison to the midline conducted in North Kamagambo, there was an increase from 35% to 41% in birth certificate possession. This implies that having programmes that sensitize families on the importance of birth registration has positive results, as more parents and caregivers will see the importance of registering their babies at birth. However with 73% of children without birth certificate is worrying and require attention with programmes aimed at sensitizing the community leaders (especially, chiefs, village elders and nyumba kumi) to ensure that children within their jurisdiction are registered at birth and that their birth certificates are acquired in good time.

Majority of the caregivers with children who did not possess birth certificates (57%) indicated that their certificates were being processed by the registrar of persons. East Kamagambo had the least number of birth certificates being processed, majority of respondents from this ward also pointed out that the registration centre is too far from them as shown on table 5. Complaint on registration center being far is an indication that parents are not sensitized on the importance of having all children registered at birth to enable them pursue acquiring birth certificates.

Place of delivery

The government of Kenya supported by Non-governmental organizations has put in place a number of interventions to promote delivery under skilled attendance. One such intervention is the implementation of the Linda mama cover and the training of CHWs to promote skilled delivery by providing a referral structure. This has been cascaded down as Lwala Community Alliance has also integrated the traditional birth attendants in their CHW structure to eliminate the menace within their intervention areas. From the study conducted, 98.5% of the respondents indicated delivering their children under a skilled birth attendant with only 1.5% reporting to have either had a home delivery with some not knowing and refusing to respond to the question within the entire sub-county as seen in Tables 5a,5b. This shows the strides the government and non-governmental organization implementing partners like Lwala have made to encourage skilled delivery.

What informed the place of delivery

Lwala Community Alliance uses CHWs as the first point of service to communities with regard to health seeking advice. This has been realized from the survey as 93% of the respondents in North Kamagambo indicated having received advise from CHWs compared to baseline wards like East Kamagambo where this stands at 43%, Central Kamagambo 58% and South Kamagambo 84% as shown on Table 6.

Findings on nurturing care practices for children

To establish whether caregivers had capacity to provide a nurturing care environment for their children, findings on nurturing care practices are presented in this section with a focus on primary caregiving, and complementary feeding.

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Table 4 Birth Certificate possession distribution by ward

Household Catchment:	Does Child have Birth Certificate? (Age<=5)			
	No	Yes	% with Birth Certificate	Total
Central Kamagambo	180	63	25.9%	243
East Kamagambo	193	33	14.6%	226
North Kamagambo	173	120	41.0%	293
South Kamagambo	171	50	22.6%	221
Total	**717**	**266**	**27.1%**	**983**

Table 5a Reasons why children do not possess birth certificates

	Household Catchment:				
Why is the child not Registered?	Central Kamagambo	East Kamagambo	North Kamagambo	South Kamagambo	Total
Born at Home	1(0.6%)	2(1%)	1(0.6%)	0(0%)	4(0.6%)
Don't find it necessary	5(2.8%)	3(1.6%)	0(0%)	5(2.9%)	13(1.8%)
Don't know	3(1.7%)	37(19.2%)	25(14.5%)	14(8.2%)	79(11%)
Don't know where or how to register	5(2.8%)	19(9.8%)	7(4%)	13(7.6%)	44(6.1%)
In the process	142(78.9%)	49(25.4%)	117(67.6%)	100(58.5%)	408(56.9%)
Process too complicated or expensive	17(9.4%)	36(18.7%)	21(12.1%)	23(13.5%)	97(13.5%)
Registration centre too far	7(3.9%)	47(24.4%)	2(1.2%)	16(9.4%)	72(10%)
Total	180(100%)	193(100%)	173(100%)	171(100%)	717(100%)

Table 5b Skilled Birth Attendance

	Catchment				
Where was the child born? (Age<=5)	Central Kamagambo	East Kamagambo	North Kamagambo	South Kamagambo	Total
At Health Facility	241(99.2%)	221(97.8%)	290(99%)	216(97.7%)	968(98.5%)
At Home	2(0.8%)	4(1.8%)	2(0.7%)	4(1.8%)	12(1.2%)
Don't know	0(0%)	0(0%)	1(0.3%)	1(0.5%)	2(0.2%)
NA (adopted/foster)	0(0%)	1(0.4%)	0(0%)	0(0%)	1(0.1%)
Total	243(100%)	226(100%)	293(100%)	221(100%)	983(100%)

Table 6 What informed the place of delivery?

	Household Catchment:				
If your child was delivered in a health facility or hospital, what informed this decision	Central Kamagambo	East Kamagambo	North Kamagambo	South Kamagambo	Total
A fellow mother recommended it to me	7(2.9%)	7(3.2%)	1(0.4%)	6(2.8%)	21(2.2%)
Community Health Worker/Volunteer referred me	142(58.9%)	96(43.4%)	249(93.3%)	182(84.3%)	669(70.8%)
I have attended ANC services	87(36.1%)	115(52%)	5(1.9%)	21(9.7%)	228(24.1%)
Other, please specify	5(2.1%)	3(1.4%)	12(4.5%)	7(3.2%)	27(2.9%)
Total	241(100%)	221(100%)	267(100%)	216(100%)	945(100%)

Primary Caregiving: In trying to understand who takes care of children during the day in Rongo sub-county, findings indicated that 98.1% of the children are taken care of by their primary caregivers during the day as shown in Figure 4 and Table 7.This is in line with the Midline report which also indicated 93% of the caregivers caring for their children during the day in North Kamagambo.

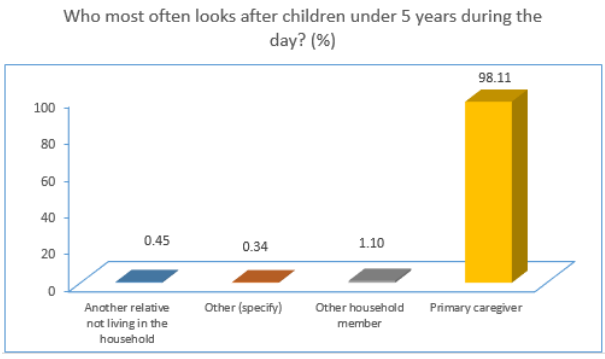

Figure 4 Percentage on who takes care of children during the day.

Provision of the child's caregiving needs

Findings from qualitative data revealed that, the top five caregiving needs of children as identified by participants include: provision of basic needs (good nutrition, clothes, shelter and sleep), protection from diseases (through immunizations, proper hygiene, sleeping under mosquito nets, deworming and frequent clinic visits). Other needs identified include, good parental care (which includes responsive care, love, attention, happiness, consoling, gifting), safety and protection from harm as well as play. Participants further revealed that, most caregivers in the community show love and/or comfort to their children in the following ways: being close to the child, playing, singing, dancing, and laughing with the child, meeting their basic needs (food, good health), providing them with toys/play materials as well as bringing themselves to their children's level.

A male caregiver from North Kamagambo revealed this by saying, "*For children under the age of five, it's in order to bring them close by telling stories. This encourages them to open up in case they have a problem or when they are sick. When you do not do this and become*

distant to them they cannot share what's happening in their lives because they fear you".

Complementary feeding

Findings on practice of complementary feeding revealed that 83.7% of the participants introduced their children to complementary foods at the age of 6 months. North Kamagambo indicated best performance at 91.1% followed by South Kamagambo 83.7% while Central and East Kamagambo had 79% each in that category as indicated in table 8.

Table 8 further shows that majority of the households in NK introduced additional foods after six months as compared to the other three wards, a positive indicator that could be attributed to the pilot of the programme that was implemented in 2021. However, the three baseline counties CK, EK and SK had 13.2%, 12.2% and 10% of caregivers introducing other foods to the child before the age of 6 months respectively. This is likely to compromise the health status of the child as the child's system is not ready to digest complementary foods.

Table 7 Percentage of who takes care of children during the day disaggregated by ward in Rongo Subcounty

	Catchment				
Who most often looks after children under 4 years during the day?	**Central Kamagambo**	**East Kamagambo**	**North Kamagambo**	**South Kamagambo**	**Total**
Another relative not living in the household	0(0%)	5(0.5%)	4(0.3%)	11(1%)	20(0.5%)
Other (specify)	0(0%)	0(0%)	15(1.3%)	0(0%)	15(0.3%)
Other household member	0(0%)	10(0.9%)	34(2.9%)	5(0.4%)	49(1.1%)
Primary caregiver	1014(100%)	1074(98.6%)	1139(95.6%)	1129(98.6%)	4356(98.1%)
Total	1014(100%)	1089(100%)	1192(100%)	1145(100%)	4440(100%)

Table 8 Introduction of Complementary foods

At what month did you start giving your child-additional food in addition to breast milk	**Central Kamagambo**	**East Kamagambo**	**North Kamagambo**	**South Kamagambo**	**Total**
After 6 months	192(79%)	179(79.2%)	267(91.1%)	185(83.7%)	823(83.7%)
Don't Know	2(0.8%)	1(0.4%)	6(2%)	5(2.3%)	14(1.4%)
No answer/refused	17(7%)	18(8%)	4(1.4%)	9(4.1%)	48(4.9%)
before 6moths	32(13.2%)	28(12.4%)	16(5.5%)	22(10%)	98(10%)
Total	243(100%)	226(100%)	293(100%)	221(100%)	983(100%)

Early childhood development services

Findings from qualitative data revealed that services offered at the community level include; routine immunizations, supply of free treated mosquito nets, free medical care and treatments, and caregivers counseling. Other services offered include; education to caregivers on various topics such as nutrition and exclusive breastfeeding, the importance of attending clinics and infection prevention, health checks by CHWs, deworming, and vitamin A supplementations. Additionally, CHWs provide health education to the households focusing on kitchen gardens, and feeding practices, as well as integrated community case management (iCCM), and referral services. Two CHWs from North Kamagambo mentioned advocacy for male involvement at the household level and establishment of play corners as services they offer. Other services to children aged 0-5 years by CHWs include; health checks, on malaria, malnutrition, and diarrhea, vitamin A supplementation, and deworming. In North Kamagambo, some CHWs mentioned making toys with locally available materials for children.

Findings from quantitative data revealed that play and communication stood out as the most important services received by caregivers at 21.1% closely followed by Immunization and ANC visits at 15.4% and 11.4% respectively as shown in Figure 5. These services were validated from the CHWs focus group discussions as they reported that at the household level, they provided health checks, iCCM (malaria, malnutrition, and diarrhea), Vitamin A supplementation, and deworming. However, only participants from North Kamagambo, where the Lwala Family-Centered ECD pilot program was implemented, mentioned an additional service offered focusing on ECD education services.

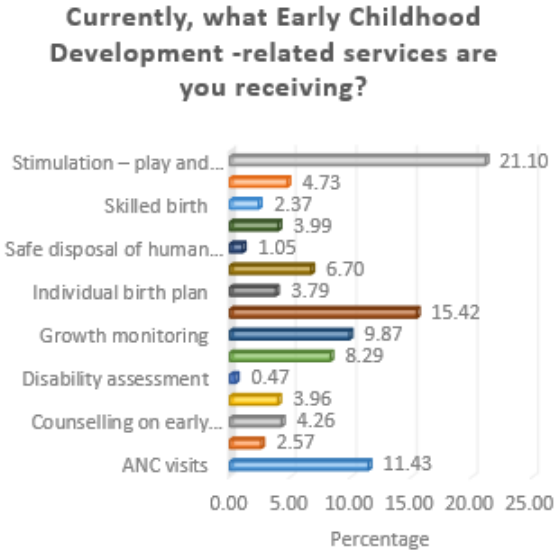

Figure 5 Services received by caregivers.

The study also sought to establish whether there was additional information caregivers require. Health checks and access to birth registration and NHIF were the most requested information at 28.6% and 27.1% respectively. Lack of information on birth registration and NHIF explains why majority of participants are not enrolled in NHIF and why many children do not have birth registration. There is need therefore for programmes aimed at providing information on the importance of birth registration and having NHIF as seen in Table 9.

Citation: Mwoma T, Omondi P, Mudhune S, et al. Family centered early childhood development: a case of Rongo Subcounty, Migori Kenya. *Pregnancy & Child Birth.* 2023;9(3):86–96. DOI: 10.15406/ipcb.2023.09.00284

Table 9 Services caregivers would like to receive

Which kind of ECD services would you like to receive that you do not have currently	Freq.	Percent
Accessing birth registration and NHIF cards	390	27.08
Don't know	8	0.56
Health checks	412	28.61
Information on feeding children	257	17.85
Information on keeping children safe	202	14.03
None	136	9.44
Other (Specify	35	2.43
Total	1440	100.00

Qualitative data revealed that, some of the difficulties caregivers encountered were related to accessing healthcare services for their children and thus the need for interventions to address the healthcare challenges as seen in the excepts below.

*When they [children] are sick and cannot communicate, I can give them some herbal medicine that was [given] by my grandmother before taking them to hospital-(*Male caregiver in Central Kamagambo) in response to dealing with sick infants who are young <1 year and cannot talk. *The difficulty I get is that the child gets sick frequently over the night so you may be stressed and tempted to seek herbal drugs which sometimes is not available. I may have Panadol syrup to help in case of emergency like body heat [temperatures]* – (R12, Female Caregiver, East Kamagambo). Another caregiver stated that saving for medical care is one of the things they wished they knew before becoming a care giver, *"Financial knowledge, I would save for medical cover*"- (Female Caregiver in Central Kamagambo)

Play and communication

In comparing whether there was improvement in provision of play materials for children in North Kamagambo between baseline and endline, findings revealed that there was an improvement from 69% in baseline to 86% in endline in the number of caregivers who responded that children under four have play materials as seen in Figures 6 and 7. However, there was a slight drop in endline in NK.

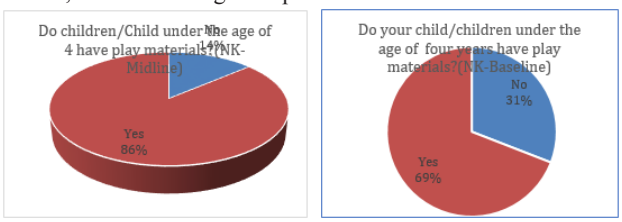

Figure 6 Possession of child play materials at baseline and midline in North Kamagambo.

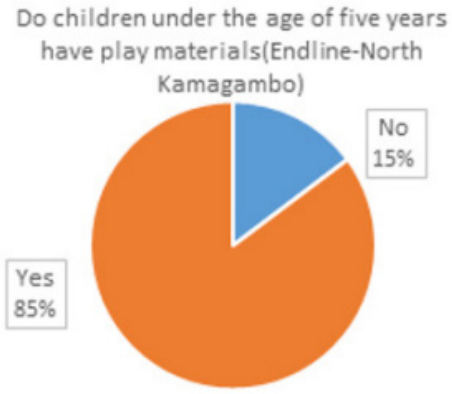

Figure 7 Possession of child play materials at endline in North Kamagambo.

Table 10 reveals that provision of play materials to children was good across the four wards. However, North Kamagambo seems to be doing better than the other three wards. This could be attributed to the implementation of the ECD program at Lwala community alliance as many of the CHWs were trained on how to make play toys with locally available materials. This has also been supported by the types of toys that children do play with, an increase of existence of homemade toys at endline (71.6%) up from midline (60.1%) and baseline (52.4%). In addition, from the qualitative interviews, only respondents from North Kamagambo mentioned that they had playgroup sessions for their children. Some CHWs also reported making toys for children in North Kamagambo.

Table 11 reveals that children in Central and East Kamagambo play with toys acquired from the stores at 41.1% and 51.7% respectively implying there is need to sensitize caregivers to embrace using low/no cost play materials from the local environment.

Child wellbeing

Findings on child wellbeing showed that there was a significant increase in knowledge especially on child rights and abuse from baseline, midline and end line in NK with 86%, 90% and 91%, respectively as indicated in figures 8 and 9. This shows the impact created on the caregivers and general population at large by the ECD programme in North Kamagambo (Figure 8).

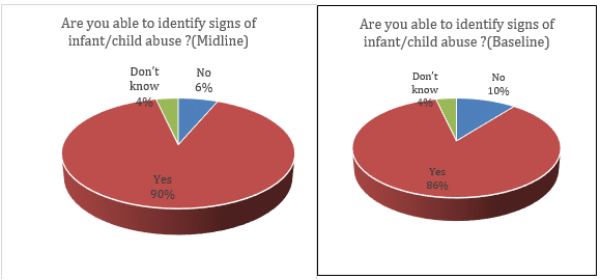

Figure 8 Caregivers ability to identify signs of infant/child abuse at baseline and midline in North Kamagambo.

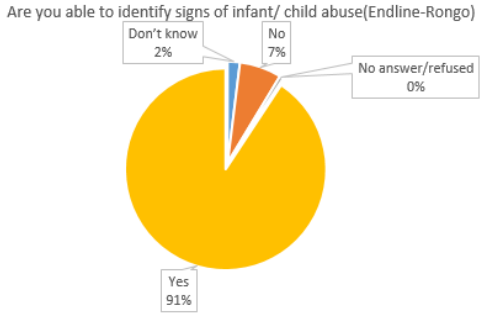

Figure 9 Caregivers ability to identify signs of infant/child abuse at endline in North Kamagambo.

Citation: Mwoma T, Omondi P, Mudhune S, et al. Family centered early childhood development: a case of Rongo Subcounty, Migori Kenya. *Pregnancy & Child Birth.* 2023;9(3):86–96. DOI: 10.15406/ipcb.2023.09.00284

Caregivers' ability to identify signs of a child who has been abused seems good across the four wards a part from EK where 12.5% of the participants indicated they do not know how to identify as shown on Table 12.

Table 10 Possession of child play materials disaggregated by wards

Do your child/children under four years have play materials?	Central Kamagambo	East Kamagambo	North Kamagambo	South Kamagambo	Total
No	27(13%)	49(24.5%)	16(7.6%)	29(14.4%)	121(14.8%)
Yes	180(87%)	151(75.5%)	194(92.4%)	172(85.6%)	697(85.2%)
Total	207(100%)	200(100%)	210(100%)	201(100%)	818(100%)

Table 11 Type of play toys disaggregated by ward

If (Yes PCM01), what often do child/children play with?	Central Kamagambo	East Kamagambo	North Kamagambo	South Kamagambo	Total
Homemade toys	73(40.6%)	33(21.9%)	139(71.6%)	84(48.8%)	329(47.2%)
Household objects (e.g. bowls, plates, cups, or pots)	15(8.3%)	16(10.6%)	3(1.5%)	11(6.4%)	45(6.5%)
Other (specify)	0(0%)	0(0%)	0(0%)	1(0.6%)	1(0.1%)
Outside objects (e.g. sticks or rocks)	17(9.4%)	16(10.6%)	8(4.1%)	3(1.7%)	44(6.3%)
Things for drawing and writing	0(0%)	3(2%)	0(0%)	0(0%)	3(0.4%)
Things that make or play music	1(0.6%)	5(3.3%)	1(0.5%)	7(4.1%)	14(2%)
Toys from a store or market	74(41.1%)	78(51.7%)	43(22.2%)	66(38.4%)	261(37.4%)
Total	180(100%)	151(100%)	194(100%)	172(100%)	697(100%)

Table 12 Caregivers ability to identify signs of infants and child abuse distribution by ward

Are you able to identify signs of infant/child abuse?	Central Kamagambo	East Kamagambo	North Kamagambo	South Kamagambo	Total
Don't know	4(1.9%)	7(3.5%)	1(0.5%)	4(2%)	16(2%)
No	9(4.3%)	25 (12.5%)	11(5.2%)	10(5%)	55(6.7%)
No answer/refused	2(1%)	0(0%)	1(0.5%)	2(1%)	5(0.6%)
Yes	192(92.8%)	168(84%)	197(93.8%)	185(92%)	742(90.7%)
Total	207(100%)	200(100%)	210(100%)	201(100%)	818(100%)

From the qualitative interviews some caregivers felt that their communities were not safe spaces for children. Child abuse and especially rape and child molestation were reported; "*In the last five years we've had two rape cases", "Rape cases are rampant in the area"* – (Female Caregivers, South Kamagambo). "*Yes my daughter was molested sometimes back and she spoke up. So I consider our community to have a safe space starting from the CHVs*" (Male caregiver, East Kamagambo). *" Yes we do not have a safe space. It has not taken even two months since someone molested a child where he was working. He was apprehended within three days"* (Male Caregiver, East Kamagambo) (Figure 9).

Multi-sector collaboration for ECD service delivery

Qualitative data from key informant interviews and focus group discussions was utilized to provide information on multi-sector collaboration. Findings revealed that all key informants except one were trained in holistic child development and responsive care. They found their training helpful and were able to integrate some aspects of the training into their work. For example, they have been able to transfer knowledge to teachers through capacity building, collaborate with the government to expand ECD services, and better manage severe malnutrition in children. Four out of ten key informants received training in reflective supervision. Training in reflective supervision was found to be helpful in disseminating ECD knowledge, creating a good work environment, incorporating everyone in planning activities, identifying and bridging gaps in interventions, as well as solving various problems.

Findings further revealed that various stakeholders provide different services as a way of promoting collaboration. For instance, partner organizations provide the following services: child protection, nutrition, birth registration facilitation, ANC facilitation for caregivers, caregivers' economic empowerment, health promotion, promotion of early learning as well as workshops on the development of play materials. On the other hand, the government provides the following services: beyond zero campaign, birth registration, budgetary allocation to ECD services, CHWs support, capacity building and child protection services. Other services provided by government include: policy formulation guiding ECD services, implementation of ECD curriculum in schools, building infrastructure and a conducive environment for learners, malezi bora, meals to ECD children, promotion of children's participation in schools, provision of learning and teaching materials to teachers and provision of the workforce to support ECD services. Health Programs such as deworming, growth monitoring, immunization, vitamins supplementations, universal child health benefits are also provided by the government.

While all these efforts are meant to promote collaboration, the study further revealed that there exist gaps in multisector collaboration affecting service provision. According to key informants, gaps in ECD service provision include: heavy dependence for ECD interventions on government implementation, lack of policy implementation, limited data/evidence on ECD, poor coordination of sectors, as there is no clear county structure on coordination as well as poor ECD facilities. Other gaps related to education include, low teacher- pupil ratio, low salaries for teachers and few resources allocated to promote ECD interventions.

Findings further revealed that all key informants, except one, have worked and collaborated with Lwala through their organizations. Lwala's roles in these collaborations were highlighted as follows:

coordination, providing ECD and other trainings, financial support, health systems strengthening and provision of teaching learning materials. Other collaborations with Lwala, revolves around, support for LAAC meetings and DAC National Celebrations, supporting Rongo sub-county children Advisory Committees, as well as providing technical support and inputs in ECD-nurturing care. Other collaborative initiatives include, infrastructure development such as building the Rongo subcounty theatre, remuneration of CHWs, supporting health care providers, support on reporting tools and supervision as support on various health promotion activities.

Discussions of findings and recommendations

Access to ECD Services

Access to the early childhood development services in relation to enrollment to NHIF, birth registration and certification as well as skilled delivery is very critical in ensuring child safety and security. Findings revealed that access to ECD service in relation to enrollment to the National Health Insurance Fund, remained low due to low income as a number of households engage in economic activities that do not provide steady and regular income. This in turn affects the likelihood of caregivers' ability to access healthcare services for their children. While this was the case, Central Kamagambo had slightly a high NHIF enrolment at 35.4%, probably due to its cosmopolitan nature followed by North Kamagambo at 32.7% where the Lwala pilot project was implemented. Given the important role NHIF play in accessing healthcare services, there is need for healthcare providers and the local community leadership to encourage caregivers and community members at large to enroll in NHIF and to regularly subscribe as a way of ensuring maximum utilization of this service.

Birth registration and certification was another ECD service that was interrogated. Findings revealed that birth registration and certification was low at 27% for children aged below five years in Rongo Sub-County. This was occasioned by the lengthy process involved in acquiring the birth certificate for children discouraging caregivers to follow through. However, in North Kamagambo where the Lwala pilot project was implemented, there was an increase in possession of birth certificates from 35% in baseline to 41% in midline implying that having programmes that sensitize communities on the importance of having birth certificates for their children yielded fruits. There is need therefore, for local leadership at the village level to sensitize parents and caregivers to have their babies registered but also to encourage them to follow through until they get birth certificates for their babies.

Implementation of Linda mama cover and the training of CHWs were found to be useful in promoting skilled delivery in Rongo Sub-County. This was achieved through provision of referrals by CHWs, a strategy that was utilized to encourage skilled delivery. This complemented by support from non-governmental organizations contributed towards an increase in skilled delivery of 98.5% in North Kamagambo. CHWs played a critical role in providing guidance to the communities on health seeking behavior and the importance of skilled delivery. This strategy should therefore, be embraced and scaled up to the other three wards, East Kamagambo, South Kamagambo and Central Kamagambo.

Nurturing care practices

Providing a nurturing care environment to young children is critical in enhancing children' development. The study sought to explore the nurturing care practices in Rongo Sub-County in relation to primary caregiving, and complementary feeding. Findings from quantitative and qualitative data revealed that the primary caregivers play a critical role in caring for young children during the day. They provide care for children's basic needs such as nutrition, clothing, shelter and sleep. They also protect children from diseases through immunization, proper hygiene, sleeping under mosquito nets as well as deworming.

Findings on complementary feeding revealed that majority (83.7%) of the participants introduced their children to complementary foods at the age of 6 months, whereby North Kamagambo indicated best performance at 91.1% followed by South Kamagambo 83.7% while Central and East Kamagambo had 79% each. This is a positive indicator that could be attributed to the Lwala pilot project that was implemented in North Kamagambo. There is however need to mobilize communities and families especially the small percentage in all the four sites to embrace provision of a nurturing care environment for their children.

Provision of ECD services

Findings on provision of ECD services showed that immunization, supply of free treated mosquito nets, free medical care and treatments, as well as caregivers counseling were among the services provided. Other services include sensitizing caregivers on the importance of good nutrition and exclusive breastfeeding as good practices that promote good health for children below five years. Additionally, emphasis on the importance of taking children for post-natal clinic and infection prevention, health checks by CHWs, as well as deworming, and vitamin A supplementations were other ECD services provided. CHWs provide health education to the households focusing on kitchen gardens, and feeding practices, as well as integrated community case management (iCCM), and referral services. Advice on play and communication was mentioned as an important service provided to caregivers to enhance stimulation of their children.

Findings from NK revealed that there was emphasis on play and communication which showed an increase from 69% in baseline to 86% in end line on caregivers who reported that children under four years had play materials. The increase could be attributed to the pilot project where CHWs played a critical role to advise caregivers on the importance of providing children with play materials.

Findings further revealed that there was a significant increase in knowledge especially on child rights and abuse from baseline, midline and end line in NK with 86%, 90% and 91%, respectively. Caregivers' ability to identify signs of a child who has been abused seemed good across the four wards apart from EK where 12.5% of the participants indicated they do not know how to identify a child who has been abused. From the qualitative interviews some caregivers felt that their communities were not safe spaces for children, as child abuse and especially rape and child molestation were reported. There is a need therefore, for the community leadership starting from the village level to the location level to work with community members to identify perpetrators and ensure that appropriate legal actions are taken to curb the vice.

Multi-Sectoral collaboration for ECD service delivery

Findings on multi-sectoral collaboration from qualitative data revealed that various players in ECD had been trained on holistic child development and responsive care which was found to be helpful in integrating some aspects of the training into their work. Through this training, they have been able to transfer the knowledge gained to teachers as well as collaborate with the government to expand ECD services to a wider coverage. Four out of ten key informants received training on reflective supervision which was found to be helpful in

disseminating ECD knowledge, creating a good work environment, incorporating everyone in planning activities, identifying and bridging gaps in interventions.

Findings further revealed that, as part of collaboration in service provision, partner organizations provide services related to child protection, nutrition, birth registration and facilitation, ANC facilitation for caregivers, caregivers' economic empowerment, health promotion, as well as promotion of early learning through development of play materials for children. Government provides services such as: beyond zero campaign, birth registration, budgetary allocation to ECD services, CHWs support, capacity building and child protection services. Additionally, governments play a critical role in policy formulation and provision of guidelines on implementation of policy.

Although there seems to be good progress on multi-sector collaboration it was apparent that gaps in ECD service provision existed such as: heavy dependence for ECD interventions on government implementation, lack of policy implementation, limited data/evidence on ECD, poor coordination of sectors, as there is no clear county structure on coordination as well as poor ECD facilities. Other gaps related to education include, high teacher-pupil ratio, low salaries for teachers and few resources allocated to promote ECD interventions.

To address these gaps, there is need for a coordinated structure for multi-sectoral coordination on service provision for children led by government. To address gaps on teacher-child ratio and low teacher salaries, there is need for the county government to hire more ECD teachers to meet the pre-primary education policy requirement on teacher child ratio and the Council of Governors salary scale.

Acknowledgments

None.

Conflicts of interest

There is no conflict of interest.

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