Tunakujenga

A *family learning program* that empowers caregivers to be the best parents they can be.

Findings from a pilot study conducted between October 2018–March 2019

RESEARCH & INNOVATION AT THE IRC
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Background

Why this project ?

Parents are children's first teachers

Infants' and toddlers' development is inseparable from their relationship with the primary caregiver. They are children's first teachers, and structure their environments in ways that ultimately shape their brain development (Fox et al., 2010). All parents need the agency and capacity to support children's development during these early years. Programs that support positive caregiving behaviors and play-based learning have significant positive effects on children's developmental across contexts and delivery platforms (Britto, 2017).

We do not know yet how to support caregivers in low income and crisis contexts

Interventions to foster effective caregiving have been piloted and implemented in higher income countries (for example Olds, 2003; Piquero, et al. 2016), yet interventions fostering playful and nurturing caregiving have not been adapted at-scale in Low Income Countries (LIC) or crisis-affected contexts. It remains a critical gap. In these areas the need is particularly strong, as children face extreme levels of adversity, putting them at risk for developmental delays that can follow them throughout their lives (Black, et al., 2017). These risks are exacerbated when caregivers cope with hardships, stress, and depression, which manifests in harsh disciplining and caregiving (Betancourt, 2015; Dybdahl, 2001; Galovski, 2004).

Innovation is needed to design and scale playful parenting interventions beyond the train-the-trainer model

Existing models in LIC and crisis settings often focus on transmitting education and skills (such as parenting trainings and train-the-trainer models), which have limited demonstrated impacts, are costly and difficult to scale, and often fail to address behaviors, values, social norms, motivations and habits.

IRC and Ubongo have partnered to address this challenge

The International Rescue Committee (IRC) and Ubongo (Africa's leading edutainment and media company) have partnered to address the need for scalable, innovative, and culturally-adapted playful parenting interventions in LIC and crisis contexts, with plans for a rigorous evaluation and additional research to contribute to the nascent evidence-base. We are designing, rigorously evaluating, and ultimately scaling Tunakujenga (Swahili for "We Build You Up"), a media-based parenting program to have a lifelong impact on caregivers and their children.

What is Tunakujenga?

Tunakujenga ("We Build You Up" in Swahili) is a family learning program that gives caregivers the skills and agency to engage in play-based learning and nurturing activities with their young children from birth to 14 years old. Highly engaging and educational videos model Social Emotional Learning activities, and enable learning and habit building by leveraging two carefully chosen delivery channels:

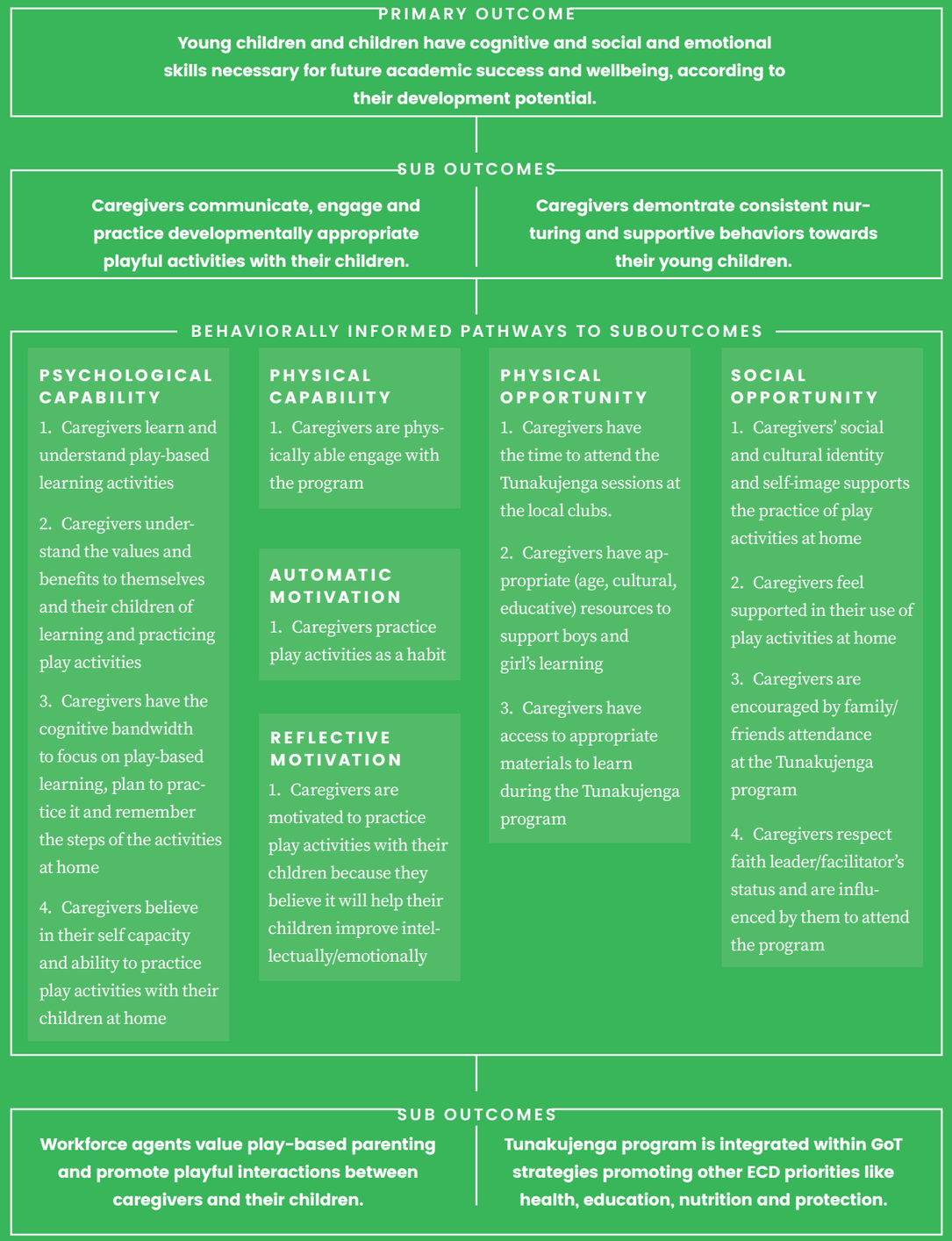
1. **Face-to-face clubs where caregivers watch the videos with a trusted community leader:** in the context of this pilot study, we focused on faith leaders and their active leadership roles in the community, and we ran the program in 5 selected churches. In the future, we envision the program to take place in three different channels:

   Government led clubs: pre-primary and primary schools and community centers.

   Community led clubs: faith-based networks and other grassroot initiatives.

   IRC led clubs: Safe Healing and Learning Spaces and schools.

2. **TV & radio broadcast supported by social media** which reaches caregivers and children in their homes as part of their daily entertainment activities.



Theory of Change

Research Objectives & Research Questions

PILOT OBJECTIVES

The purpose of data collection during the pilot project is twofold. First, the data is useful to give us information on the functioning of the pilot program, for example, levels of participation in the program or potential pitfalls in a future scale up. Second, the data collection is used to test the tools that could be used in a randomized trial to collect information on outcomes. The data from the pilot program cannot be used to measure outcomes or to estimate whether the program has an impact on the outcomes. Most of our pilot work was focused on implementation data and feasibility testing, but we also wanted to create, test and refine the different tools used to measure outcomes. Our outcome of interest are:

1. **Caregivers have the agency, tools, skills and motivation** to support their children's cognitive, social and emotional development.
2. **Caregivers engage with their children's** cognitive social and emotional development daily at home.
3. **Children engage everyday at home with their caregivers** and develop according to their potential (executive function, social development, emotional development).

Research Questions

Our research questions can be segmented in two categories:

IMPLEMENTATION QUESTIONS

1. Is the sampling / recruitment structure effective? Which one was best?
2. Do the weekly sessions take place as planned?
3. Are the behavioral nudges – cards, calendars, posters – implemented effectively by the faith leaders?
4. What factors impede or facilitate participation?
5. Are the session activities carried out as intended? (eg, quiz, practicing) Are participants engaged?
6. Do caregivers carry out SEL activities at home?
7. What factors impede or facilitate their implementation?
8. How are cards/posters/ calendars used at home?

OUTCOME QUESTIONS

1. What is Tunakujenga's effect on caregiver well being?
2. What is Tunakujenga's effect on caregiver attitudes and belief towards SEL and play-based learning?
3. What is Tunakujenga's effect on family dynamics (discipline, parental warmth)?
4. What is Tunakujenga's effect on caregiver efficacy and satisfaction?
5. What is Tunakujenga's effect on child behaviors including: aggression, hyperactivity / attention, pro-social behavior, anxiety, and antisocial behavior?

Pilot Study

Our pilot was conducted with two delivery channels: Tunakujenga clubs in community spaces, at small scale, and national broacasting at very large scale with a social media campaign.

The small clubs in trusted spaces took place in Nyarugusu Refugee Camp, Tanzania between October 2018 and February 2019 for 5 months. The targetted population was Congolese Refugees. The clubs took place in 5 Churches with 5 Faith Leaders (Free Methodist Church). The program involved about 60 caregivers, and 300 children age 6-14 years old[1].

The national broadcasting activities took place on prime TV and on social media through a digital and SMS campaign. Caregivers were asked to send photos doing the activities with children, to customize the different activities and to share tips with each others. Caregivers received SMS prompts such as "Send us the song you made for your star" or "send us a photo of you and your child doing a face" or "how will this game help your child?"

1. The goal was initially to recruit caregivers with children in primary school. As the program rolled out, it became known that participants were also caregiving for younger children in their household, and would include them in the activitieds. This age distinction is therefore less relevant for the curriculum.

Research Methods

Interdisciplinary and Mixed Methods:

For 10 weeks, 5 churches in Nyarugusu Refugee Camp hosted Tunakujenga clubs, with 58 caregivers. To answer our research questions, we leveraged the following methods:

QUANTITATIVE

Baseline and endline surveys were conducted one-on-one with the following measures:

1. Population characteristics (caregivers, children, household wealth)
2. Caregiver well being
3. Caregiver attitudes and belief towards SEL and play-based learning
4. Family Dynamics (Discipline, Parental warmth, Parental stress, performance)
5. Caregiver efficacy and satisfaction
6. Child behavior

Monitoring and evaluation for implementation data

1. High touch observation of club sessions happening in churches
2. Light touch spot checks with higher frequency, to verify whether meetings were taking place and how many people were present.

Ubongo television viewership data and social media analytics.

QUALITATIVE

In-depth interviews with all project stakeholders:

1. Caregivers
2. Faith leaders
3. Staff responsible for the implementation of the program.

Direct observations of different activities:

1. Tunakujenga club sessions,
2. Traditional church services and community activities,
3. Children play sessions with children from Tunakujenga and from neighboring communities.

Design workshops and prototyping sprints with the following program tweaks:

1. **Church Cinema**: opening the churches on the weekend to welcome more participant and making it easier to attend the clubs.
2. **Maker sessions:** offering the opportunity to caregivers to create their own activties that would be included in the club's curriculum.
3. **English as a second language:** offering program tailored the mothers need, independantly from her children.

Sampling strategies

SAMPLING PROCEDURE

During this pilot, we tested different sampling and recruiting methods to inform a future cross-cutting research design measuring the combined and individual effects of Tunakujenga and another SEL-focused program with primary school teachers. Thus, two sampling methods tested during this pilot:

1. **Sampling from the church list:** In three of the five churches, sampling of caregivers to participate in the program was carried out from the church list. This was the method intended to yield the best results for the program.
2. **Sampling from the school list:** In two of the five churches, sampling carried out from nearby school enrollment list. This method would potentially yield the best results for the research methods, but does not align as well with program needs.

What we learned from sampling and recruitment from the church list:

- All Caregivers recruited from a specific church shared the same faith and were part of that specific community. This was the intention of the program design.
- Caregivers from the same small church live close together and nearby the church where the meeting will happen.
- 80% of invitations to the program were accepted when using this sampling method.

POSITIVE RESULTS

- Faith Leader is known and trusted by caregivers.
- Faith Leader interacts with caregivers often. Communication about group meeting days and times is easier.
- There is an up-to-date and accurate documentation of church members.
- Faith Leader knows the caregivers well, as they pray in these small churches daily, and can identify participants eligible for the program (must have children under 14 years old).
- Caregivers already know each other, which can contribute to the creation of a safe, trusted space for mothers to engage with each other, their pastor, and share perspective on their children's development.

NEGATIVE RESULTS

Launching a program and recruiting its participants through a church is controversial for the implementing NGO (in this case IRC) and for the camp authorities (UNHCR). This method signals that the NGO is providing services to a selected faith group and not to all.

Sampling from the school—driven by research needs

- Caregivers recruited from the schools could belong to different churches and communities.
- Caregivers often live far apart even though children were sampled from a school nearby the church where the meeting will happen. It is often observe that children walk long distances to attend school.
- 70% of invitations to the program were accepted.

POSITIVE RESULTS

- This method is perceived as less controversial, since the implementing NGO operates in schools. However, the program still takes place in churches, even if the caregivers have been identified through school attendance lists.
- This method most importantly guarantees an easier research study in case of a cross cutting impact evaluation measuring the individual and combined effects of a teacher-focused program and a caregiver-focused program.

NEGATIVE RESULTS

- School lists are rarely updated and are more difficult to obtain in a timely manner.
- Through this method, it is likely that caregivers do not know one another.
- Caregivers of different faith / belief systems may refuse the invitation to participate in a group hosted at a church that is not representative of their faith, or that is not their close community church.

SAMPLE SIZE

In total, our study collected baseline and endline data for 58 caregivers, 168 children and 5 faith leaders.

There are 168 children aged between 6 and 14 years old for caregivers who completed baseline and endline.

BASELINE

The baseline was administered to 45 caregivers, all female, through one-on-one surveys.[2]

MONITORING AND EVALUATION

Three rounds of monitoring visits were completed, and in the last round, club sessions were visited twice. At the monitoring visits, the field officers observed meeting functionning and then administered a short questionnaire to caregivers and faith leaders. Due to changing meeting times not all churches were visited as planned. In total 14 club visits were conducted and 15 interviews with Faith Leaders. For one church, no meeting was successfully visited. In addition, light-touch spot checks were done over two weeks to verify whether meetings were taking place and how many people were present.

ENDLINE

The endline was administered to 58 caregivers[3], all female. There is complete baseline and endline data for 39 caregivers. There is completed baseline only for 6 caregivers, and endline only for 19 caregivers. The endline duplicated the baseline, though questions which were found to be ineffective in the baseline (for example due to lack of heterogeneity in responses) were modified or dropped. In addition, a module asking specific questions about the SEL program was added.

CHILDREN

2. See list of measurements in table X.

3. As the program took place, more caregivers from the community asked to join and were enrolled in different groups, which explains a higher endline rate, and a completed baseline and endline for only 39 of these caregivers.

"One day, I came back from Tunakujenga and stopped by the market to buy a fish. When I came home, my husband was very happy. He said: ah, these meetings maybe good for you if they mean that you bring back some food afterwards!"

Caregiver participating in Tunakujenga, Nyarugusu Camp

What we learned about our participants

The average Tunakujenga caregiver is 35 years old, Congolese and refugee for more than 20 years.

- Caregivers range in age from 16-60 years old.
- A majority of caregivers have been refugees for over 20 years.
- 70% are Methodists.
- 50% finished primary school; 40% at least some secondary school; 10 report no schooling at all.
- 86% of caregivers are either parents or grandparents, and another 10% are either siblings or aunts/uncles. 40% have a foster/orphan.
- 68% of caregivers report that there is another person who takes care of the child as much as they do, and this person is usually a biological parent, otherwise a sibling or grandparent.
- 77% are married or living as married
- Typical household: 4 adults over 18, 5 children under 18 and 3 children in the primary school age-range (6-12), and almost all (91%) of those children are enrolled in school.
- Over half of the respondents indicated that one person in the household was so sick in the last week that they could not carry out their daily activities.

Most children in the program experience illness and malnutrition.

- Around 40% of caregivers reported that the child ate only one meal during the previous day, and most of the remaining caregivers reported only two meals per day
- Almost 80% of caregivers reported at least one condition of stomach ache, diarrhea, fever, or trouble sleeping
- 45% of caregivers reported that children had a stomach ache during the past two weeks in the endline (35% in the baseline)
- One-third in both the baseline and endline reported that the child had diarrhea.
- While 85% of caregivers report that the child does at least some labor, the median number of hours is only 5 hours per week.
- High (greater than 5) hours of child labor is positively correlated with: caregiver depression, age, and the number of children in the household, and negatively correlated with household wealth, caregiver education and literacy, and the number of adults in the household.

HOUSEHOLD WEALTH

Measuring household wealth is important because several SEL programs show heterogeneous impacts, and one probable dimension of heterogeneity is the economic security of the household. The household wealth measures were based on the Simple Poverty Scorecard Poverty-Assessment Tool Tanzania (Schreiner, 2016)[4], modified for the refugee camp context. Feedback from field officers following the baseline suggested that some of the respondents were responding to questions in a motivated way, in particular that they were anticipating that the organization would provide them with some resources depending on their responses. The endline questionnaire was modified to take account of this experience. Perhaps as a result, responses were slightly higher in the endline though not for every variable. To avoid conflating sample differences with other differences, the table below focuses only on the respondents who completed both the baseline and the endline.

4. Simple Poverty Scorecard Poverty-Assessment Tool Tanzania (Schreiner, 2016)

	Baseline	*Endline*
Number of meals eaten yesterday	1.7	1.6
Owns a mobile phone	33%	43%
Owns a TV	26%	35%
Owns a radio	20%	35%
Owns a table	77%	76%
Number of chairs in the home	95% have chairs. Average=3.4	89% have chairs. Average=4.
Household grows crops/ garden	61%	51%
Number of chicken owned	40% have chickens. Average=2.5	39% have chickens. Average=3.2
Number of goats owned	10% have goats. A verage=2.6	16% have goats. Average=4.5
Number of pigs owned	7% have pigs. Average=1.5	5% have pigs. Average=2
Household owns a book	49%	62%

WHAT WE LEARNED ABOUT THE INTERVENTION DESIGN

Program participation evolves around 60% when monitored

The conversion rate of invited to participating at a meaningful level (at least five meetings attended) is about 60%. Random sampling was done from local school lists for two churches, and from church member lists for three churches. Once sampled households were verified to be eligible, they were invited to participate. A total of 64 caregivers were invited. Overall 80% of the sampled caregivers accepted the invitation, though this rate was lower (about 70%) in the school-based sample churches. However, of those who accepted the invitation in principle, 3 out of 53 reported never going to a meeting, 13 reported going to fewer than 5 meetings. Eight out of 53 were never observed at a meeting.

At the endline, 8 caregivers who were supposed to have been invited by the faith leaders to take part said that they had never gotten any information about the meetings. All of them are reported in the data as having been invited, so it is unclear from the data if they never got invited or never got subsequent information about the meeting place and time.

There are reasons to believe that participants have received higher dosage and exposure to the content than what our monitoring data tells us about participation. If there is 60% participation in clubs, it does not equal 60% of content was received.

- **Firstly,** monitoring visits have not always been successfully occuring, and 6 out of 20 monitoring visits did not occur. However, staff reports confirm that the 6 missing meetings did take place, simply not at the time originally scheduled. Light touch spot checks also did not always successfully find the groups, due to changes of meetings scheduled (3/10 checks were unsuccessful).
- **Secondly,** our tablet analytics demonstrates that the videos have been watched in various orders, in repetition and that not all groups watched the videos one by one, week by week. This means that participants had exposure to content in various sequencing and with various repetitions.
- **Finally,** our qualitative observations showed that some faith leaders made a point to catch-up with content if a meeting was missed. One of them even went door-to-door to ensure that caregivers would practise the activities they missed or did not fully grasp.

In the context of Nyarugusu, this level of participation may be quite high, as camp residents face a daily struggle to manage logistics, obtain food, and carry out their household chores and production activities. While programmatic changes might increase participation, this might also be the highest participation that can be hoped for. If that is the case, it is important to consider whether conservative estimations of dosage – 60% - are enough to generate the hoped-for impact, and to consider whether higher estimates can be rigorously confirmed.

Caregivers are excited to attend, but 40% of them find it difficult to attend

The majority of those who attended meetings, nearly 80%, reported being very excited to attend meetings.

40% of caregivers found that attending meetings is a bit difficult or very difficult, and another forty percent report that they went to a meeting to find that it had been cancelled at least once.

Operationally, it is important to avoid cancelled meetings, as people will be deterred from attending (especially marginal attenders). For those who reported going to meetings to find it cancelled, more than half reported that it happened multiple times.

Time constraints and informational/communications capacity are related to higher observed attendance at meetings. Table 1 shows that caregivers who are older, literate and have a mobile phone have higher attendance, perhaps because they are easier for the faith leader to contact. In addition, the number of adults in the household is positively correlated to meeting attendance, and the number of children (slightly) negatively correlated. An explanation for this pattern would be that caregivers are more able to come to meetings if they have help at home. Finally, the number of orphans in the household is positively correlated with attendance.

WHAT HELPS:

- FL goes to homes or calls ahead of time for a session reminder.
- FLs keep to a weekly schedule.
- Husband encourages mom to go and learn a new activity
- Mothers checking on each other.
- Mothers motivated by certificate.
- Limited tablet access makes the session times more “rare” and desirable

WHAT HINDERS:

- Mothers don’t see this as a session for them, and not as important compared to the hundreds of things they have to do during the day to improve family’s living conditions.
- The meetings are forgotten.
- Husbands don’t see tangible material coming out of this and don’t encourage.
- The church is really far (sampled through schools).

WHAT DOES THAT MEAN FOR TUNAKUJENGA?

Tunakujenga club sessions needs to be dependable to the caregivers to ensure regular attend.

IDEAS TO INCREASE PARTICIPATION:

- Leverage household phone ownership to send reminder sms (from the FL).
- Give the FL phone credit so he can call caregivers and remind them of the meetings.
- Engage husbands and fathers in the program with a different timing. If both are invested, caregivers are more likely to believe that attending the group sessions are as valuable as being home doing other things for the family.

Millions of caregivers from the host community watched Tunakujenga on National TV and interacted with the Game of the month campaign

Ubongo.org broadcasted 1 video per month under a "Game of the month" campaign. Each video has been shown 30 times per month. Videos have been shown every Saturday and Sunday morning at 9:30 am, between Akili and Me and Ubongo Kids and weekdays everyday at 4:45 pm just after the national news.

Each video reached between 857,000 people and 1.5 M people. Every other month, parents received a prompt by SMS to encourage take up and implementation.

Month	Video of the month	Social Emotional Learning Competency	Call to action on SMS campaign	# of people reached[1]
Sept	Belly Breathing	Emotional regulation	Send us a video of you breathing with your child	961,000 people
Oct	Feeling Faces	Emotional regulation	Send us a photo of you and your child making a face	857,000 people
Nov	Make it Harder	Perseverance	N/A	938,000 people
Dec	A song for a star	Perseverance	Send us the song you made for your star	1,538,000 people
Jan	Removing Blame	Conflict Resolution	N/A	1,275,000 people
Feb	Story Solutions	Conflict Resolution	N/A	958,000 people
Mar	Clues	Brain Building	How will this game help your child ?	958,000 people
April	What is missing	Brain Building	N/A	1,021,000 people

1. The viewership numbers come from Kantar Geopoll Media Measurement and are minimum numbers for the number of people reached that month. Methods here: https://knowledge.geopoll.com/tanzania-media-measurement-kgmm-reports

Extracts from conversations on WhatsApp group moderated by Ubongo.org.

Q: **UBONGO:** Na pia mnaweza kutueleza kwanini mnahisi video ni nzuri?

ENG: And can you tell us why you feel the video is good?

A: **PARENT:** Nimezifurahia zote pia ile inayofundisha utofauti wa tabia.

Kwamba mtoto atakua akielewa tupo tofauti ktk tabia n jinsi ya kuchukuliana na wenzie hata akiwa mkubwa

ENG: I like the videos because they teach children the diversity of behaviours and how to identify them. They teach them empathy, that not everyone is the same and to understand this as they get older.

Q: **PARENT QUESTION (SWA):** Naomba tu share idea juu ya: 1.je mzazi anapomnunulia mtoto vitu vya kuchezea kwa wingi ni makosa? 2.Je mtoto kujifunza vitu mbalimbali kunatakiwa kuendane na umri (kwa mfano unaweza kuta mtoto ana umri mdogo Lina anajua kuhesabu,kuandika baadhi ya namba na herfu pia kuchora.

Naomba mnisaidie ili nijifunze zaidi

Parent Question (ENG): Could you please share your ideas about:

1. When a parent buys their child a lot of items to play with is it wrong?

2. Should a child learn things according to their age (for example the baby can be young but knows how to count, write some numbers and can also draw?

Please help me to learn more.

A: **PARENT ANSWER (SWA):** Si makosa na watoto wanajifunza na kukua kupitia michezo mbalimbali. Pia hawawezi kuwa sawa kati ya Mtoto mwenye vifaa vya kuchezea na ambaye hana. Kuhusu umri na uwezo wa kutumia kifaa ni lazima izingatiwe pia yatupasa kufahamu kuwa watoto hucheza ili kukamilisha mahitaji yake. Hivyo ni bora kuangalia umri na kifaa cha kumpatia mtoto

Kweli ukiachana na kumfundisha ushirikiano anafundisha creative thinking pia, ila kuna shida moja watoto wanaweza kujaribu hii strategy wakavunjika vibaya

Parent Answer (Eng): It is not wrong and children learn and grow through various games. They also cannot be the same between the child with toys and who does not. The age and ability to use the toy should also be taken into account, which children play to complete their needs. So it is better to look at the age and device to give the child

Beyond teaching them cooperation, you can also teach him creative thinking too. .

A: **UBONGO ANSWER:** Asante Fetty, hiyo ni input nzuri.

If you are watching this video with your child, perhaps you can ask them about what they learnt from it and explain how they shouldn't do the exact same thing but apply the basic learning.

Parent Feedback: Great....with this explanation, it gives a room for parent-child dialogue in between or after the video... thank you.

Weekly meetings take place most of the time, but are not always consistent

Meetings are not consistently held at the same time, do not start on time, and caregivers are not always notified of changes. While twenty Tunakujenga meetings were scheduled to be visited during monitoring and evaluation, only 14 meetings were successfully visited, despite efforts to reschedule made by all parties. Of those meetings, 10 (70%) did not start on time. Most frequently the reason for the delay was unspecified ("the moms came late") but food distribution and domestic duties were cited as reasons for lateness.

From endline data, one-third of caregivers report having gone to a meeting but finding that it had been cancelled at least once. This is very consistent with the results of the light-touch spot checks, where three out of the ten meetings that were to have been observed did not take place during the scheduled time.

Faith leaders and caregivers often find alternative solutions to reschedule the meetings.

Faith Leaders and caregivers watch more than one video during the meetings and go through many activities at the time. This would indicate that even if some meetings didn't take place, caregivers are still exposed to the content.

WHAT DOES THAT MEAN FOR TUNAKUJENGA?

The service design needs to enable flexible scheduling, which is hindered by:

- Tablet storing and distribution: tablets are kept outside the camp and distributed by IRC staff but caregivers and their FL are likely to meet outside of the main working hours of humanitarian staff: early morning, late afternoon and weekends.
- Faith Leader motivation and approach: FL play a crucial role in meeting consistency. If they are engaged and motivated, they will ensure that meetings are taking place and that caregivers are receiving 100% dosage.

Ideas to increase meeting consistency:

- Find alternative tablet storage solutions within the camp boundaries;
- Find alternative technologies that FL would keep with them (smartphones ?). This would increase extrinsic motivation and rewards, but hinder scalability consequently.
- Recruit faith leaders based on their ability to rigorously keep meetings consistent and engagement with caregivers high.
- Encourage any community members to run club based on their intrinsic motivation.

A light touch approach to supporting Faith Leaders (FL) led to a variety of implementation models and demonstrations of leadership

Faith Leaders have the potential to make the Tunakujenga clubs an excellent learning and sharing experience for caregivers, and because of our very light touch approach, we were able to observe a variety of engagement models.

Faith Leaders were introduced to the program through two light touch meetings, where they had the opportunity to watch the videos, understand the program, ask questions, and volunteer to run a club. The meetings were light in terms of training materials and structure provided.

Later on, during the program, FL could call the IRC staff for support, but they did not receive follow up trainings or meetings to course-correct their engagement. This was intentional, to observe what happened if our engagement was really low touch.

As a result of this low touch engagement, FL took the program and added their own perspective and engagement models to it. One FL incorporated sermons focused on SEL, one FL ran an open-door policy and invited children and other caregivers into the program, one other FL delegated leadership to a mother, another one was less engaged in the program, and the last one was incredibly dedicated and visited caregivers at their homes everyday to ensure that implementation was happening and that caregivers were learning.

WHAT DOES THAT MEAN FOR TUNAKUJENGA?

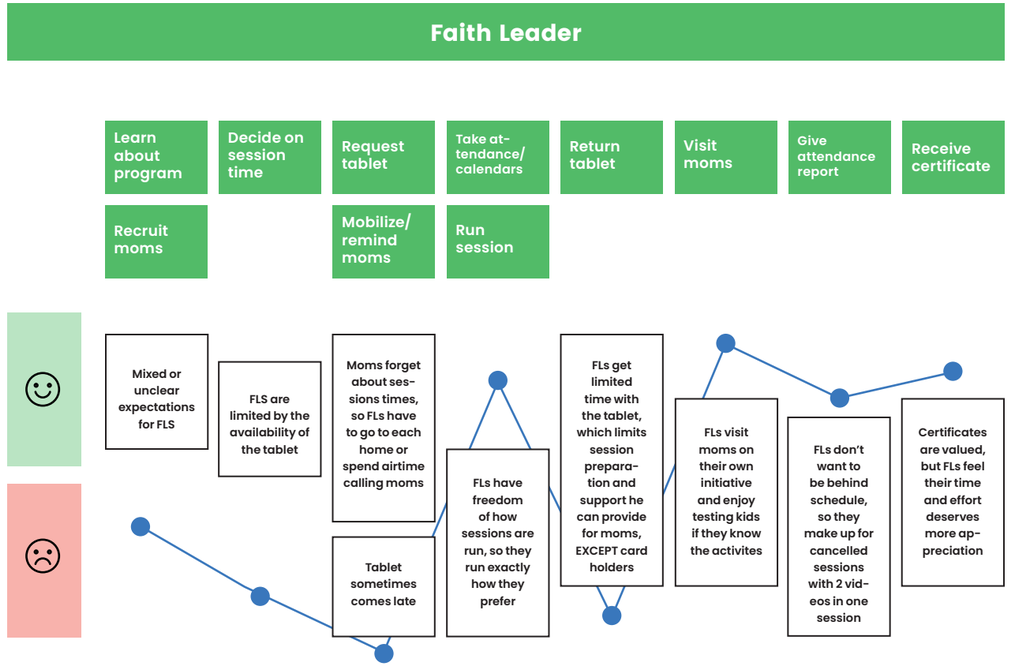
The service design needs to enable flexible scheduling, which is hindered by:

- Engagement was uneven, but very encouraging when considering the light touch of IRC driven support. This means that with a bit more structure and support directly to Faith Leaders, this program would be able to reach higher levels of quality.
- **How might we increase high engagements from FL while maintaining the low touch aspect of the program ?**

Ideas to increase meeting consistency:

- Run a few “open door” club sessions as we recruit faith leaders to ensure that they know what they are signing up for.
- Engage the church hierarchy and people that they admire.
- Emphasis on recruiting intrinsically motivated leaders, as opposed to emphasis on trainings and ongoing support.
- Create learning circles or another form of community of practice.

Faith Leaders ran Tunakujenga clubs with almost no support and extrinsic rewards



User Journey as it was experienced by Faith Leaders during the pilot.

Supporting materials help make learning tangible, increase fidelity and contribute to higher frequency of activities

Calendars with stickers, cards and posters were supposed to be distributed to different churches. This was not done according to the plan by faith leaders, and additionally, our quantitative data is unreliable. Our qualitative data shows that when caregivers had received cards and calendars they used both.

Cards were used the most and contributed to:

- making learning tangible, including towards their husband and peers,
- helping caregivers to remember the key elements of the activities (2/3),
- pick an activity to do with the child (1/3).

- **Faith leaders were not entirely reliable for distribution** of supplementary intervention materials, and they were not necessarily well-incorporated into the curriculum. Based on monitoring data, the faith leader at churches F1 and C1, which were supposed to receive cards, distributed cards only three out of four times. All of the caregivers who reported attending meetings at F1 and C1 in the endline reported receiving cards at least once, and on average they reported having 9 cards.
- They used the cards to remember how to do the activity (2/3) and pick an activity to do with the child (1/3).
- **The calendar question was not answered in the monitoring data,** though it should have been answered for C1 at least.
- In the endline, one participant from C1 did not receive the calendar, and only 2 out of 8 participants from E1 received the calendar (E1 seems to have been a particularly dysfunctional group). One-half of the invited respondents indicated that they did not understand why they had been given a calendar. About half reported receiving stickers to put on the calendar.
- **The endline data is somewhat unclear,** but it appears that all of the caregivers in group I1 received posters as planned, but that 3 caregivers who had been invited and attended the group C1 did not (though they did receive the cards).
- **Our qualitative enquiries revealed calendars being used, cards being used and posters being unused.**
- **Posters were not hung up on people's homes** because they were considered too pretty and would be damaged (even though they are laminated).
- **Cards make learning tangible.** We also observed higher fidelity and frequency in implementation for caregivers who had cards in their homes.
- Cards and calendars were attractive to children.

Supporting materials are not a crucial trigger to prompt habit building

Even when caregivers and children were making the most out of the cards and calendars, these supporting materials did not have a major contribution in the habit building loop. The supporting materials play a different role than the one we anticipated. Instead of acting as reminders and nudges to build the habits, they act as:

- a tool to make learning tangible and get buy in from husband and peers,
- a tool to help caregivers remember the different steps of the activities they are trying to do with their children.

Instead, it is the child and his reaction to the activity that contributed the most to the habit building at home. As children and mothers started to engage in this new way, children would start asking mothers for these games again and again. This led to increased frequency in implementation.

Originally, caregivers received posters, cards and calendars with stickers, to act as a visual trigger and contribute to habit building. In reality, these materials were not enough to be the main trigger for implementation, but they did contribute to increased quality and maybe to increased frequency of implementation.

WHAT DOES THAT MEAN FOR TUNAKUJENGA?

- Revise supporting materials in light of this new purpose: increase fidelity and frequency of activities.
- Rethink triggers and content for younger children 0-3 who won't be able to ask for an activity like their older siblings did.

Ideas to improve supporting materials:

- Cards can be of smaller size, with more illustrations and tested for low literacy.
- Cards can be collected with a point system, to reinforce the idea of making learning tangible.
- We could create a completion card to show tangible progression, with points awarded for each activity learned.
- Cards must be part of the group sessions and distributed at the beginning.

Most weekly sessions are carried out as intended.

Most sessions were carried out as intended: participant watch the videos, practise together once or twice or more, and discuss implementation.

The quizzes were not carried out as intended. Most quizzes did not get completed, and some got completed for a few questions only. Often, quizzes were not even attempted.

Faith leaders bring their own modifications to the sessions: sermons, motivational speeches, monitoring, prayers, caregiver leadership, custom games etc. This means that some sessions were adapted to reflect community's desires.

Except for the quiz, most session activities were carried out as intended. Most (10 out of 14) groups took the attendance photo as intended, and it was easy and fast. In all but one case, all participants could comfortably watch the video, but there were 4 cases where the FO indicated that not all participants could hear the video. The groups all watched the entire video. All but one practiced leading the activities, and half of the groups practiced two times or more. A minority (4) of the meetings took the quiz and discussed it. The rest of the meetings did not do the quiz together or did not do it at all. Caregivers discussed doing the SEL activities at home with their children in most (10 out of 14) of the meetings.

WHAT DOES THAT MEAN FOR TUNAKUJENGA?

- Re-work the quizz and its role in the program.
- Validate and reinforce FL's modifications to the sessions. The more they are able to do that, the more agency they will develop and the better the program.

Ideas to improve supporting materials:

- Embed the main questions into the videos themselves, with the pause screen.
- Designate a person in the group who would be responsible for leading a discussion in the group.
- Train faith leaders to lead discussions.
- Create tokens, supporting paper based materials to replace quizz and model discussions.
- Replace quizz by audio files (as intended earlier in the project) to avoid literacy difficulties.

Weekly sessions have mixed levels of active participation from caregivers.

Participants seems to be very engaged during the meetings. Caregivers are focused, and they watch the videos multiple times.

All caregivers do not talk equally during discussions. In general there is often 2-3 caregivers out of 6-8 who are not talking.

The participants seem to be engaged with the activities during the meetings according to self reports and monitoring. Almost all of the respondents reported watching most or all of the videos. Half of respondents reported consistently practicing the activities with their peers, another 25% reported sometimes practicing.

Participation is not completely equal during the discussions in the meetings. Out of 10 meetings where discussions took place, in only one did the Field Officer judge that all caregivers participated. In eight of the other meetings, only some of the caregivers talked (and in general 2 or 3 caregivers did not talk), and in one, only the faith leader talked.

Note: This insight is the only occasion where we are not able to confirm the data with other methods and sources. We have reservations about the field officer's ability to make conclusions from his observations of the caregivers during meetings. In fact qualifying someone's engagment is highly subjective and we are not entirely sure that this person received the apprioriate training to make these observations.

WHAT DOES THAT MEAN FOR TUNAKUJENGA?

It is normal and expected that all caregivers would not participate the same way in meetings. As long as they are engaged in watching the video and that they can internalize the learning to bring it home, we can consider this experience to be positive.

Ideas to improve supporting materials:

- Caregivers can take rotating responsibilities in facilitating club sessions to ensure more active participation.
- Caregivers who are more active and vocal participants can check in with their peers to support the ones who have less confidence.

Caregivers are confident in their ability to do the activities, but for a reduced set.

The caregivers expressed confidence in their ability to do the activities, though for a reduced set. Only a minority (1 in 10) reported finding the activities a bit difficult, and half of the respondents reported finding the activities very easy.

On average, caregivers report that they remember how to do 4 of the 10 activities covered in the Tunakujenga program. Almost all caregivers report being comfortable or very comfortable doing the activities.

Our qualitative data indicates that caregivers find certain activities in the emotion regulation or conflict resolution competencies particularly difficult and others like brain building activities particularly easy. Some of the activities in our curriculum are still too conceptual and not localized enough. As a result, they appear to be difficult to remember and they take away caregiver's confidence with their children.

Caregivers see a clear value in the program, but maybe not the one we layed out.

What was valuable for moms?

- Stronger relationships with her children
- Moms built "friendships" with their children
- Moms can find other discipline methods for their children
- Moms felt they understood their children's characters and skills better
- Moms needed to see positive and meaningful changes in their lives before they valued the program, but not all moms reached the point where they could experience those benefits

WHAT DOES THAT MEAN FOR TUNAKUJENGA?

We have a lot of work to do to finalize the bank of activities that we want to propose to caregivers. These activities need to include more open ended play, more brain building content and be sequenced according to caregiver's confidence. These activities also need to be sourced from existing practises within the community to ensure that they are more locally relevant and less foreign to caregivers. Then, it will be possible to add new activities to the mix.

Ideas to improve supporting materials:

- Apply the low floor, high ceiling, wide walls design principle:
- Sequence activities to start with a low entry level.
- Add activities of increasing difficulty to enable sustained engagement.
- Add more open ended activities to enable customizations and remixes.
- Include activities sourced directly from the caregivers and their community, like chicken thief.

Habit buiding is guided by children reactions.

We needed to introduce triggers to enable habit building, we thought the following would work:

TIME TRIGGER: repetitive activities, at the same time every day: either night time or day time.

VISUAL TRIGGER: to remind caregivers about their commitment (poster).

ACTION TRIGGER: calendar and stickers to model habits and encourage caregivers.

Goal setting during the club sessions.

We found that instead, caregivers were building habits because they were triggered to do the activities by their children.

- This means that 1) children are and remain at the center of caregiver intrinsic motivation and 2) children need to enjoy the activities and the interaction with their parents to ask again.
- Activities are also more likely to be done when caregivers see an immediate value in doing them.
- If an activity helps calm children down before dinner, or helps the caregiver gain their child's trust when they need it, then it is more likely to be used, and to reinforce habit building.

Question for our project:

- What does that mean if the child stop asking for activities with their caregivers?
- What does that mean if the child is too young to ask?

Ideas:

- Reinforce the breakfast and dinner time triggers for activities (natural triggers, embedded into things people already do).
- Re-introduce calendars better, with the right support and monitoring from FL.

Caregivers are implementing activities at home with very high fidelity and somehow regularly.

- Qualitative and quantitative data points towards new habits in the home and increased play based learning activities between parents and children.
- Qualitative observations and tests showed caregivers and children reproducing most Tunakujenga activities with high fidelity.
- Pre and post data from baseline and endline indicates that the frequency of playing games together increased from 62% in the baseline to 81% in the endline.
- Almost all caregivers report being comfortable or very comfortable doing the activities.
- At endline, on average, caregivers report that they remember how to do 4 of the 10 activities covered in the Tunakujenga program.
- Of those who were present at meetings, 44% reported that they practiced Tunakujenga activities the night before. They reported practicing different activities, even within the same group, and several reported practicing more than one activity. This is an important consideration from a dosage perspective: if caregivers are practicing only the activities that they like the most, then not all of the curriculum will be covered for all children.
- The large majority of respondents reported doing the activities during the evening, and a handful reported doing the activities both morning and evening.
- One third of caregivers reported that their children asked to do the activities with them every day, and another 45% reported that their children asked several times per week.

Caregivers with higher education and fewer distractions are more likely to have practiced the night before. Table 1 shows that younger caregivers who have finished primary school and who have literate mothers are more likely to have practiced the previous night, as are those who do not have a mobile phone. Curiously, the direction of the correlation for completing primary school and mother's literacy is different from the correlation for own and father's literacy. One potential explanation for this is that completion of primary school and mother's literacy are more closely related to non-cognitive skills (which could help caregivers adhere to the program protocol) whereas self and father literacy might be more related to cognitive skills (which could help caregivers with the informational logistics required for attending meetings).

Mats for Tunakujenga activities on might be a good incentive or gift. In open-ended responses, caregivers indicated that they needed a variety of materials to help them implement the program at home. Many were infeasible (tablets for children to watch the videos at home) but several caregivers proposed mats on which they could sit to do the activities with the children. One might imagine that it would be as effective a reminder as a poster.

Activities are more likely to be done when easily embedded into daily routines, but not necessarily daily chores.

- Caregivers want to do the activities during the day, as they interact with their children. Activities are most valuable when can be implemented during down time.
- Caregivers perceive chores as a non-SEL appropriate time. Caregivers want children to focus on chores and they express the need to have full control over chores.
- "I want my children to get a job. That's not something I can decide. They will be more educated than me in the future so why would they listen to me on this. The things happening at home are me, they listen to me for the stuff at home." – Caregiver Nyarugusu
- Chores are perceived as the caregiver control space for now, not to be mixed with games. Simply means it will take time, but does not mean it won't happen. it's a normal part of the learning and adoption process.

Question for our project:

- At what point in time does it make sense to introduce prompt for activities during chores?
- At what point in the learning process do parents shift from literal interpretation of the activities to internalization into daily behaviors?

Ideas:

- it means it takes time to shift perception from "ad hoc games" to ongoing behavior
- not expecting any change here for the first year

"I want my children to get a job. That's not something I can decide. They will be more educated than me in the future so why would they listen to me on this. The things happening at home are me, they listen to me for the stuff at home."

– Caregiver Nyarugusu

WHAT HELPS

- The moms try the activity right after the session, when the session is fresh in their minds
- Moms and kids can refer to cards for retention
- FL visits homes to keep moms accountable and reinforce activities with kids
- Activities are fun and adaptable (what is missing)
- Activities are sequenced from easiest to harder
- Stickers and calendars hold moms accountable
- Kids like the games and remind moms to play

WHAT HINDERS

- Caregivers can forget and be too busy
- Moms are afraid to adapt the activities and afraid to "get it wrong"
- Cards are kept away so kids don't ruin them

Brain building activities are easier to implement, and the rest of our content needs to be more localized.

- Maybe these kids don't need 5 competencies.
- It looks like that have lots of SEL skills (should we do 5 competencies as much or should we target 1 competency at a time).
- Empowering the mama as a parent.

Why are we not doing an assessment of which skills are really needed first?

- What makes a good game
- Pastors eye
- aligned with the bible
- local games
- understand what is important
- moms eye
- easy to do
- does not embarrassed them
- kids eye
- fun + challenging enough for me. Bored out of their mind for what is missing
- a game that mom will play with me > something in common

Intermediate outcomes

Caregiver well-being

Caregivers have globally low levels of subjective well-being. In both the baseline and endline, just over 50% of respondents that they are only a little bit satisfied with their lives. In terms of emotions last week, 60% report that they experienced happiness only a little bit of the time, 30% report that they experienced sadness a lot or all of the time, 50% report experiencing stress a lot or all of the time, and almost 75% reporting that they experienced calmness a little or none of the time. Correlation between baseline and endline values of subjective well-being variables are around 0.3 except for calmness which is 0.11.

Self-reported health today shows that only half of respondents report fair or very good health. Good self-reported health is significantly positively correlated with wealth, and negatively correlated with someone in the household being ill during the previous week (as would be expected. Correlation of baseline and endline measures is 0.41.

In addition to asking respondents to directly and subjectively evaluate their lives, the baseline and endline questionnaire used a slightly modified version of the Moods and Feelings Questionnaire (Well-Being Module 7-18) have a high alpha (0.81 in both baseline and endline), and using either factor analysis or taking the mean yields substantively similar scales (corr >0.9). Correlation between baseline and endline measures is 0.32. The resulting variable can be understood as a state of depression.

Caregivers with high levels of well-being were less likely to attend meetings, and attendance at meetings may be particularly difficult for caregivers in poor health. Table 3 provides the correlation of the different well-being measures from the endline to each other, participation in Tunakujenga, and socio-economic characteristics. The well-being measures are correlated between themselves as would be expected: life satisfaction is positively correlated to happiness, calmness, and health, and negatively correlated to sadness, stress, and depression (M&F). People with lower subjective well-being, in particular self-rated health, are more likely to attend meetings. The negative relationship remains even when controlling for other caregiver characteristics. Reports of practice yesterday and in the preceding week are less correlated to well-being, except for happiness and stress, which are both positively correlated to reported frequency of practice.

Parent attitudes and beliefs

PLASTICITY AND GAME PLAYING

Questions on plasticity tend to have less variation than is desirable and more concentration on extreme values, despite attempts at rephrasing in the endline. Consideration should be given as to whether it is valuable to keep these questions.

Caregivers tend to think that how much a child can learn is determined by abilities they are born with (80%) and this did not change much between the baseline and endline. However, they are split nearly 50/50 on whether a child's ability to memorize can be changed as well as whether a child has "either a bad or good character and won't change much," and more than 80% of caregivers in the baseline think that it is not true that a child can simply be born aggressive. The data show a small increase in the belief that people can learn to calm themselves when they are upset (70% to 80%).

These results do not give a clear picture, and are further complicated by inconsistent correlations over similar questions. For example, older caregivers are much more likely to agree that a child's ability to memorize things cannot be changed no matter what you do, but they are much less likely to agree that how much a child can learn is mostly determined by the talent they are born with. Caregiver literacy shows the opposite pattern.

Caregivers who reported finding it strange to play games with children were less likely to participate in Tunakujenga. Age, the number of adults in the household, and child age and the child being male were all negatively associated with finding it strange to play games with children.

Parent-child relationship

DISCIPLINE

Approval and reported practice of physical discipline declined between the baseline and the endline. In general caregivers believe that children should fear adults (around 70% in both baseline and endline), but there was a slight decrease from the baseline to the endline on physical discipline. In the baseline, 85% of caregivers felt that children who misbehaved should be physically punished, but at endline this figure dropped to 67%. Rates of reported verbal discipline during the last three days did not change substantially between baseline (84%) and endline (81%), but **rates of reported physical discipline plummeted between baseline (58%) and endline (8%).**

Participation in Tunakujenga activities (observed presence at meetings and reported activity engagement with children) was negatively correlated to approval of physical discipline and feelings that children should fear adults. In other words, Caregivers who attended Tumakujenga meetings were less likely to say that it is okay to use physical discipline. . Other factors negatively related to these questions are the selected child being female. Child age, age of caregiver, mobile phone ownership (but not household wealth) and the number of other adults in the household are all negatively related to approval of physical discipline (but not for fear of adults. Relationships with parent well-being measures were ambiguous and inconsistent.

FAMILY DYNAMICS

Caregivers report high engagement in caregiving activities during the last three days, and engagement in playing games increased substantially from baseline to endline. Caregivers report high rates of telling stories (over 70%), singing songs (about 80%), hugging (about 70%), and reading or looking at books (50%) (highly correlated to reporting household ownership of a book). **The reported frequency of playing games together increased substantially from 62% in the baseline to 81% in the endline.** The frequency of playing games and the change in the frequency of playing games from the baseline to endline is positively correlated with reported practice of Tunakujenga activities on the monitoring questionnaire (Table 4). Interestingly, the table also shows that parent mobile phone ownership is negatively associated with every kind of child engagement. The same is true of caregiver education, which is positively associated only with reading or looking at books.

Most caregivers do not pray nightly with their children: about 25% never pray with them and over 40% only pray with them once or twice per week (consistent in baseline and endline) (Methodists, who are presumably the church members who were recruited, have similar rates). Other times spent with children:

- Cooking (51%)
- Fetching water (78%)
- Bathing (40%)
- Fetching firewood (18%)
- Small business (16%)
- Gardening (20%)
- Waiting (eg for food distribution) (31%)
- Religious gatherings (73%)

PARENTAL WARMTH

Additional effort needs to be devoted to constructing a parental warmth scale if this outcome is to be maintained. The baseline included standard questions on parental warmth but there was insufficient variation to use these questions to construct a scale. Attempts to modify the phrasing of the questions in the endline did not yield sufficient variation (all caregivers report very high levels of warmth), and these question should be dropped.

PARENTAL STRESS, PERFORMANCE AND PARENT-CHILD RELATIONSHIP SCALES

In the endline, only 4 out of the 16 questions on parent efficacy yielded sufficient variation to use: I find myself giving up more of my life to meet {child's} needs than I thought, Being a parent or caregiver is harder than I thought it would be, I wish that I did not become impatient so quickly with {child} and I am upset with the amount of yelling I direct towards {child}. The items for the parental stress scale (alpha=0.68 in baseline, 0.57 in endline) worked reasonably well, and the distribution of the resulting scale is acceptable for baseline but less so for endline. However, the scale is not significantly correlated to any of the observable characteristics (such as age or wealth) nor to the well-being variables. The questions from the parental efficacy scale (alpha= 0.59 in baseline and 0.24 in endline) worked less well than the parental stress scale but yielded a reasonable distribution. This scale is also also not correlated to the observable characteristics. The parent-child relationship scale did not work well. While the alpha was high for the baseline (0.70) it was low for the endline (0.53) and the distribution was unacceptably highly skewed to the right (towards better scores), suggesting that most parents were consistently choosing the top response choice (the best relationship).

Final outcome measurement

Caregiver subjective reports

The caregivers reported improvements in child behavior from the baseline to the endline. For example, “She is changing through games” or “He reduced bullying and insulting.”

The child behavior measurement tools using parent reports are promising but not yet perfected. Appendix 1 gives further detailed information on the scales and their development. The questionnaire was able to produce three behavioral scales that worked well in the baseline and endline : Aggression, Hyperactivity/Attention, and Pro-social behavior. There are three important tasks for improving the caregiver measures of child behavior. First, measures need to be found for Anxiety and other possibly important psychological constructs. Second, measures that are more relevant to local context and priorities (see Jukes et al, 2019) should be evaluated for inclusion in future rounds of questionnaires. Third, this section of the questionnaire should be edited, removing questions from the previous Anxiety and Antisocial groupings that do not work.

HYPERACTIVITY/INATTENTION

The hyperactivity / inattention scale is composed of items related to being impatient, fidgeting, and having a short attention span. Factors that are consistently negatively correlated with hyperactivity/inattention are the child being female, the caregiver having a high life satisfaction, age of caregiver, and the number of orphans in the household. Factors that are consistently positively correlated with hyperactivity/inattention are caregiver literacy and participation in Tunakujenga activities (with the exception of reported practice over the last week). Since correlation is high at the baseline (before activities began) it is likely that caregivers of hyperactive children selected into participating in activities. While absolute scores of hyperactivity increased for all children between the baseline and the endline (possible reasons include the small changes to questions, seasonal effects, or events happening in the camp unrelated to child development) the increase was smaller among children whose caregivers attended more than half of the Tunakujenga meetings.

AGGRESSION

The aggression scale is composed of items related to bullying, fighting, or threatening. Factors that are consistently negatively correlated to aggression are child age and caregiver age, the child being female, the caregiver owning a mobile phone, and the number of children and adults in the household. Factors consistently positively associated with aggression are household wealth and literacy. As with hyperactivity/inattention, aggression is positively associated with the caregiver being present at the Tunakujenga meetings and reporting having done the Tunakujenga activity last night (but not with reports from the last week) and again this is likely to be due to selection. Levels of aggression were essentially the same between baseline and endline, with no difference between high and low attenders at Tunakujenga meetings.

PROSOCIALITY

The prosocial behavior scale is composed of items related to being helpful and acting compassionately towards others. It is strongly positively related to child age, and is also positively related to household wealth and the number of adults in the household. It is not consistently related to other individual characteristics or to voluntary participation in Tunakujenga activities. Unlike Aggression and Hyperactivity/Inattention, baseline measures are not correlated to attendance at Tunakujenga meetings, but endline measures are. Furthermore, while prosocial behavior increased for all children between baseline and endline (for possible reasons, see Hyperactivity/Inattention above) prosocial behavior increased more for children whose caregivers attended more than half of the Tunakujenga meetings.