



Home-based ECD parent education and support program

Impact Evaluation Short Report

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Executive Summary

The CARE ECD program has been operational in the two districts of Funhalouro and Homoine in Inhambane Province since 2013. The program is focused around once-a-week, home visits to vulnerable families by volunteers called Masungukate (good advisor in the local Xitswa language), men who have volunteered for the program are known as Masungudota. This report outlines the results of the impact evaluation (using a control study and qualitative and quantitative data and conducted between 2014 and 2016). The results prove conclusively that impact has been made on caregiver status, child status and the caregiving environment – the pillars of ECD as identified by the Essential Package.

Home visits from Masungukate/dota have given caregivers **information**. The evaluation shows that they have applied this information by changing their behavior. **Behavior changes** have been recorded in use of mosquito nets, home safety and hygiene, use of latrines, immunization, feeding children diverse foods, birth certificate access, taking children to the hospital when ill, stimulation of babies and children and reduction of beating and shouting to control children. The Masungukate/dota have become trusted friends who are able to help caregivers overcome contextual barriers such as lack of water sources and long distances to the hospital by providing encouragement and in many cases actual practical assistance. This support goes beyond **accessing services**; caregivers now have a regular visitor who cares about them and their children. The evaluation results show that this has **reduced caregivers' emotional stress**, a major risk factor in early child development (Walker, 2011).

The caregiver education and practical support received from the Masungukate/dota have **increased dietary diversity**. Mothers and grandmothers now understand the importance of including foods with Vitamin A and protein in a young child's diet and they are applying this knowledge. This is a remarkable result given the present drought. The results of the evaluation show the program has **impacted on relationships** between parents and children. Acceptance and affection have increased and parents report that they are no longer beating and shouting as they used to before the Masungukate and Masungudota began to visit. Parents (fathers and mothers) who have been part of the CARE ECD program talk about showing love to their children, thereby creating strong attachments, which we know are central to young child wellbeing. This is a significant impact – it is known to be very difficult to change long-held social norms such as parenting behavior related to corporal punishment, or gender roles related to parenting (Regalado, Sareen, Inkelas, Wissow and Halton, 2004; Muñoz Boudot, Pettesch, Turk, Thumala, 2012)

No impact was recorded in **height and weight** gain but careful analysis and discussion suggests that we might have found change if we had included younger children (under 18 months) in our sample. We will pursue this in future research. In the area of **learning and stimulation** the results of the evaluation show that parents now understand the importance of play as a tool for young children to learn. Men and women caregivers report that they now play with their children more often than they did before they became part of the program. The fact that men are becoming involved in care and interaction with children is a most significant impact. Though we did not identify an impact on cognitive and language development, given the two-year implementation period this is perhaps unsurprising. However, we hope that this will be recorded over time as parents continue to stimulate their children through play and storytelling and the children participate in the playgroup program. It is important to note that any impacts of the CARE ECD program go beyond individual families. Entire communities have begun to change their behavior as Masungukate and Masungudota use their status within the community to encourage general care for young children.

The evaluation illustrates that these significant impacts can be made in remote rural areas where most parents are not literate. This is an important finding in the Mozambican context where pre-schools need to be complemented by home-based ECD because of the remoteness and poor access to resources of so many people.

1. Background

1.1 Motivation for the program

The Mozambican government has been reviewing ECD policy over the last few years. Much of the focus of this policy review has been on pre-schools¹ (Republic of Mozambique, Ministry of Education, 2012). In order to contribute to the policy review, CARE International implemented a home-based ECD program to investigate the implementation and impact of this approach. The CARE ECD program was funded by the Hilton Foundation from 2013 to 2016 and by the Flatley Foundation from 2015 to 2018. Two districts were selected in Inhambane Province that would allow us to illustrate a home-based ECD approach in remote rural villages (Funhalouro) as well as in rural villages closer to urban centers and resources (Homoine). One of the aims was to make sure that the Mozambican government had an example of an ECD model that could work in contexts where a pre-school model would have a reduced chance of being successful because of the remote area. 2013 was spent conceptualizing the model of implementation, with much time spent on ethnographic work in the local area. Implementation began in 2014 with the appointment of local community-based organization (CBO) implementing partners and the selection of home-visitors.

A baseline evaluation was conducted before home visits began in August 2014 with a subsequent endline conducted in August 2016 to measure impact. Additionally, on-going research was conducted throughout the life of the project to ascertain which aspects of the implementation brought about the impact. This summary report outlines the results of the impact evaluation conducted between 2014 and 2016 and highlights findings from the on-going research. A full evaluation report is available by request from CARE, Mozambique²

1.3 Model of intervention

The model of intervention employed in the CARE ECD program is based on recent thinking around home-based ECD, especially on the importance of caregiver wellbeing in the development of children under-five (Walker, 2011; Richter and Naicker, 2013). A detailed strategy document describing this research is available from the program technical advisor.³

The widely accepted Essential Package developed by CARE, Save the Children and the Consultative Group on Early Childhood Care and Development and endorsed by the Mozambican Government informed the structure and content of the program. Additionally, the program was informed by ethnographic work done on traditional childrearing practices in the villages in which the program was implemented.

... frequently programs are designed without a clear understanding of the culture within which they are being offered. Even programs based on a community-defined need may not be designed in response to the community

¹ There has been some movement towards accepting a home-based model of ECD more recently, for example, the National Conference (Conféncia Nacional da Rede de Desenvolvimento da Primeira Infancia R-DPI) organized by the DPI in Sept 2016 focused on pre-schools though there was some discussion about parent education and home visits, suggesting a shifting emphasis.

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context (Evans, 1994 p 2).

Evans, in a background document for the Essential Package, points out how important it is to understand local childrearing practices and to gather information not only on what families do, but why they do this, i.e. on practices, patterns and beliefs. One of the key strategic principles of the CARE ECD Program was to build on traditional childrearing practices that are sound and work to empower women to change those that we know are detrimental to the health and wellbeing of young children.

During the early research conducted for the implementation phase of the program we discovered that Masungukate ('good advisors' in the local Xitswa language) give young women advice on marriage and childrearing. This is similar to practices in other areas of southern Mozambique (Gengenbach, 2005). The CARE ECD program adopted this model and trained villagers (many of whom were already Masungukate) as advisors in child health and development, thereby mobilizing an existing social resource for the benefit of young children. A significant number of men volunteered to join the program; they are known as Masungudota (an adaptation of the feminine form of 'good advisor'). Many of these men are elders in their local churches and previously carried out relationship counselling in this role, a skill they now use to give help to caregivers of young children.

The Masungukate/dota who worked with the program were elected in a community meeting where they formalized a social contract with the community, undertaking to use the skills and information they get from the CARE ECD program to benefit the children in their community. They attended a training course which was backed up with regular mentoring from 'managers' trained by CARE and employed by local CBOs (CARE implementing partners). Each Masungukate/dota was required to visit six or seven families who live nearby, giving important health information based on a simple visual guide and forming supportive relationships with caregivers, many of whom experience high levels of emotional stress. They also referred caregivers to local services such as the hospital or clinic. Their work was (and still is) entirely voluntary.



2. Research objectives

The long-term impact aim of the program was to improve comprehensive developmental outcomes, as defined by the Essential Package, for children under the age of five. The aim of the research was to evaluate program impact through nested quantitative and qualitative studies with the ultimate objectives of:

- i) Assessing whether the home-based ECD program improved child development and nutritional outcomes and (if improvements did occur)
- ii) What program components contributed significantly to the impact in the different environments?

The full evaluation report outlines both of these points in detail. This summary report focuses on the impact outcomes.

3. Research plan

3.1 Design

The evaluation used a quasi-experimental comparison group design with repeated measures (Posavac and Carey, 1997) to evaluate the impact of the program over two years through a combination of quantitative and qualitative data collection and analysis. We used before-after and project (intervention)-control components using independent samples. This allowed us to identify significance of difference between groups and over time. Qualitative research conducted throughout the two-year implementation period allowed us to gain a deep understanding of how the program components worked for different categories of people and contexts. This gives important insight for future program development.

The PROSAN⁴ livelihoods and nutrition program ran in the same areas as the ECD program and also in other (non-ECD) villages. We accessed the project (intervention) groups in the former and the control groups in the latter. Accessing the control groups where PROSAN was operating was done mainly for ethical reasons because we did not want to work with a control group that experienced no intervention at all. The comparison groups were thus:

- PROSAN only – control
- ECD + PROSAN – project

In each of these groups a sample of households was enrolled at baseline (2014) and a second independent sample was enrolled at endline (2016). Care was taken to ensure that the 2016 households had been in the project for the duration of that time. Impacts were assessed by comparing differences between samples at base- and endline and between project and control at each of these stages.

⁴Programma de Seguranca Alimentar e Nutricional, funded by Irish Aid from December 2012 through December 2017.

3.2 Indicators

The indicators for the evaluation fall into the three categories outlined in the Essential Package (EP):

- Caregiver status
- Child status
- Caregiving environment.

Under each of these categories sub-indicators were identified.

Caregiver status

Social support networks and social capital related to community trust
Caregiver emotional stress

Child status

Birth record
Under-five health card
Age-appropriate immunisations
Nutrition status
Anthropometric measures (height for age and weight for age)
Developmental milestones that are appropriate for their age - MDAT

Caregiving environment

Malaria prevention
Stimulation
 Through play
 Academic stimulation
 Language stimulation
Acceptance (positive discipline)
Safe and hazard free home environment.

3.3 Sampling

Quantitative

The project aimed to reach 2,090⁵ households in the two-year implementation period (1379 in Homoine and 711 in Funhalouro). The 2090 households are located **within 32 villages (povoação)** that are within 14 localities (localidade) within Homoine and Funhalouro. These households were selected according to a participatory household wealth assessment. For the quantitative component of the impact study a sample proportional to district numbers and village size was identified. The study worked with children aged 18-48 months⁶. The samples at baseline and endline were independent. The table below outlines sample numbers. The full evaluation report gives more detail about sampling procedures.

⁵ This number comes from the CARE ECD project proposal to the Hilton Foundation and is based on the following calculations: Estimated nr of CU5 based on INE population projections for 2012. Funhalouro: 8,588 Homoine: 22,537. Absolute poverty levels (approximation) Funhalouro: min 69% Homoine: min 51%. That means the total nr of CU5 affected by absolute poverty in the two districts: Funhalouro 2963 Homoine: 5747 Total: 8709. 30% of 8709: 4180 children

⁶ This age range is based on an avoidance of breast-fed children because of the need for consistence in the nutrition indicators and the application of the hygiene and safety and play indicators. This age range is based on birth spacing data. Ref: RamaRao, S. Townsend, J. Askew, I. (2006) Correlates of Inter-birth Intervals: Implications of Optimal Birth Spacing Strategies in Mozambique. Population Council: New York.

Group	2014 households	2016 households
PROSAN only	212	215
ECD+ PROSAN ⁷	432	452
	644	667

Qualitative

Participants in qualitative research were randomly selected from all the different villages in which the project worked and in four different control villages. Over the life of the project 263 individuals participated in 25 focus groups and 35 in individual interviews. Some of these interactions were specifically intended for baseline vs endline comparison purposes while others took place during the implementation period in order to track behaviour change.

3.4 Instruments

Note that the mixed-methods approach allowed us to use both quantitative and qualitative instruments, depending on which were best suited to each indicator. For example, it is simple to find out if child has a birth record by means of a question in a questionnaire, but social support networks and emotional stress are more complex and, therefore, require, in addition to some quantitative measures, additional qualitative instruments such as a focus group discussions. The indicators, quantitative and qualitative instruments used in the impact evaluation are summarized in the table below. Each instrument is described in more detail in the full evaluation report.

Indicator	Quantitative instrument	Qualitative instrument
Caregiver status		
Social support and capital	4 questions from the World Bank SOCAT (Social capital measure) questionnaire	Mapping of “people I trust”
Emotional stress	WHO SRQ20 (screening tool for mental health problems)	Discussion of problems and their emotional impacts through the “Stones in the basket” activity
Child status		
Birth record	Essential Package (EP) Checklist question	Discussion of barriers to access
Under-five card	EP Checklist question	Discussion of barriers to access
Immunization	EP Checklist question	Discussion of barriers to access
Nutrition status	Child dietary diversity score	Discussion of feeding practices
Anthropometric measures	WHO standard measurement of height and weight	

⁷ The original sampling for the baseline was based on three third condition variables (ECD+PROSAN, ECD+Social Accountability+PROSAN and PROSAN only). Each was allocated a 10% sample (i.e. 209), giving a total number of 618. During implementation the Social Accountability component was removed from the quantitative study, and those households were transferred to the ECD+PROSAN condition variable.

Developmental milestones appropriate for age	Malawi Development Assessment Tool	
Caregiving environment		
Malaria prevention	EP Checklist question	
Stimulation through play	Questions from ECD HOME Inventory	Mapping of interactions with child during day
Academic stimulation	Questions from HOME Inventory	Mapping of interactions with child during day
Language stimulation	Questions from HOME Inventory	Mapping of interactions with child during day
Acceptance	Questions from HOME Inventory	Scenario discussion
Safe and hazard-free home environment	Safety checklist	

All of the quantitative instruments were collected into a single household questionnaire.

3.5 Data analysis

The study design allowed for a comparison of data across years and across quasi-experimental conditions (i.e. PROSAN only vs PROSAN plus ECD). A statistical analysis method was used to ascertain differences between the intervention conditions, and across the years, while also controlling for age, which differed from place to place. This is described in the footnote below⁸

The term ‘condition’ in the analysis refers to the intervention (ECD) and ‘study year’ to 2014 or 2016. The qualitative data (transcripts) was analysed using a thematic approach (Braun and Clarke, 2006) based on the indicators we were exploring.



⁸ The data was analyzed through a linear mixed model, treating site (Funhalouro and Homoine) as nested random factors, and intervention condition and year of study as fixed factors. In addition, since age is considered an important factor for many of the 19 dependent variables, and age differences are thus a potential source of confound, age was used as a control variable throughout the analyses.

4. Findings

The findings are presented under the indicator headings.

4.1 CAREGIVER STATUS

Before looking at the results of the research it is useful to make the point that most caregivers who participated in the study were mothers but there were a significant number of grandparents as caregivers, especially in Homoine. In 2014 across project and control households, 77.5% were mothers and 15.7% grandparents. The 2016 patterns were very similar (79.4% and 15% respectively).

Caregiver education is another relevant issue because it allows us to assess how well the program worked with parents with lower levels of education. In the 2016 sample (very similarly to the 2014 sample) 31% of primary caregivers in Funhalouro and 23% in Homoine had no formal schooling. In the same year, 81% in Funhalouro and 61% in Homoine reported having been in school no further than Grade 5.

4.1.1 Caregiver levels of community trust

Research into adult wellbeing suggests that the ability to trust others in the community is an important aspect of social capital that vulnerable women can draw on (Harpham, Grant and Thomas 2007). We used four questions that were drawn from the World Bank's Social Capital Assessment Tool (SOCAT) to measure this indicator (i.e. trust). These four questions were used as a composite measure which we have called "community trust".

In the 2014 project and control groups, results suggested that most caregivers felt they could **not** rely on people in their community for help with practical or social problems and that most of them trusted only 1 or 2 people (usually a family member). Some (over 5% of the whole sample) said they trusted no one.

In 2016 the answers to the questions about trust in the questionnaire showed that levels of trust were higher in the project group than in the control group. The difference was statistically significant⁹.

The qualitative research helps explain and, in fact, reinforces this result. In 2014 many women in both project and control (qualitative) groups said they trusted no one.

I don't trust anyone, I only trust in God who keeps me alive, I don't trust a man (angry). (2014 Younger women, Project, Village 25 Setembro, Funhalouro)

When I have a problem I discuss it with my husband. If he does not help I will comfort myself. I trust no one.

Me too. If my husband does not help me sort it out, I keep it a secret, because I trust no one. (2014 Younger women, Project Matimbe, Homoine)

⁹ Note that the difference was not significant with a 2-tailed test, but significant for a 1-tailed test . Mean = 11.66 vs 11.43, t = 1.79, df = 22, p < .045

In 2016 the pattern was much the same in the control groups but in the project group things had changed.

In a mapping exercise many caregivers in the project group identified a Sungukate/dota as the person they would go to.

I just go to my Sungukate, Mama Amelia. I am drawing a good picture of Mama Amelia because I love her. (2016 Younger women, Project Matimbe, Hoino)

Researcher: Draw where you go for help, someone you trust. (The group is spread out so they cannot copy each other and all but one draws a person in amongst the houses they have drawn).

I drew Sungukate Caterina. I go to her for advice.

I drew Mama Regina (Sungukate).

I drew Sungukate Zinha, my Sungukate.

Mama Elmira (Sungukate).

My Sungukate.

I drew my Sungukate's house.

Researcher: Before you had Masungukate where did you go to for help?

There was no other place to go before.

(2016, Younger women, Project, Mubalo, Hoino)

The control group had no one to turn to with problems but the Masungukate/dota had made a huge difference in the lives of the project group by being a trusted person in their lives.

One of the project focus group discussions in Funhalouro that stood out in the research was a group of younger women, aged between 14 and 22, all with babies and most unmarried. The Masungukate played a very important role in these women's lives.

We take them as our mothers because they give us advice that helps us a lot in our households. They help us a lot. They are just like mothers. (2016, Younger women, Project, 25 Sept, Funhalouro)

This suggests that the use of home visitors is a particularly effective ECD approach for young mothers without much family support.

4.1.2 Caregiver emotional stress

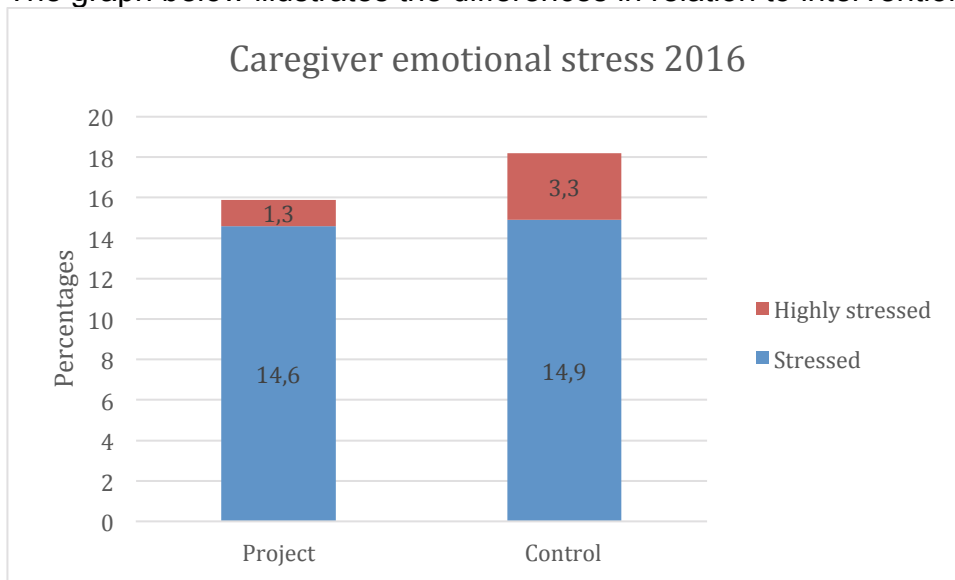
In the situational analysis we did in 2013 prior to the project launch the issue of caregiver emotional stress was one of the main problems we identified. One of the reasons for adopting the home visiting model was because it had been shown to make some impact in improving mental health outcomes of caregivers (Dawes, Biersteker and Hendricks, 2012). This was, therefore, an important indicator of impact for us to measure.

The Self-Reporting Questionnaire (SRQ20) is a mental health-screening tool developed by the World Health Organisation (WHO, 1994). It consists of 20 questions that are usually self-administered, but in our case were administered by

the research fieldworkers. A score of greater than eight indicates a high likelihood of having a mental disorder such as depression. The SRQ 20 has been found to be both sensitive and specific in screening for mental ill-health in many countries in Africa, including Mozambique (Harpham, T. et al. 2003).

Data from 2016 showed that the ECD program had a positive impact on caregiver emotional stress. In control villages 18.1% of women had a high likelihood of emotional stress with 3.3% scoring 15 or more (extremely emotionally stressed). In project villages only 15.7% of women showed signs of emotional stress – a statistically significant result¹⁰. Only 1.3% scored 15 or more, also a significant difference.

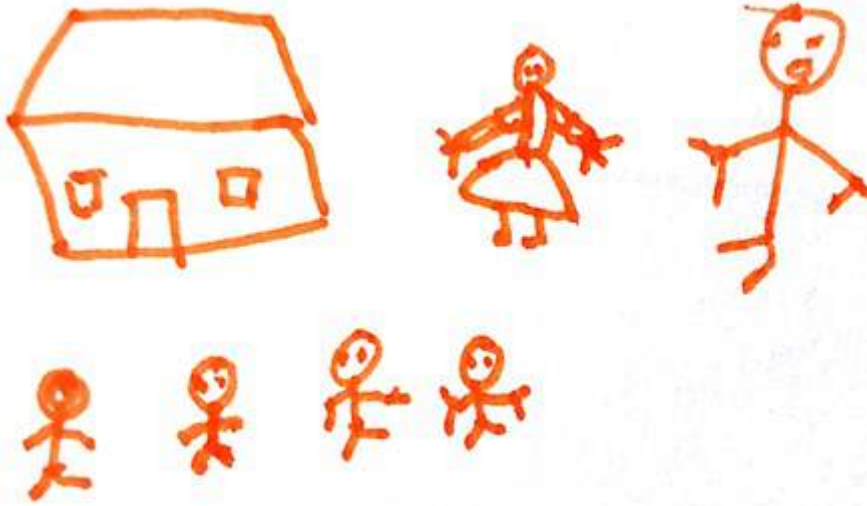
The graph below illustrates the differences in relation to intervention condition.



The qualitative research confirms that being part of the program has reduced caregiver emotional stress. The full report provides detailed qualitative data but for the purposes of this summary report this story taken from research conducted with caregivers in 2015 is presented to illustrate the point.

¹⁰ Means = 4.82 vs 6.81, F = 19.48, df = 1, 33, p < .001, and with a medium effect size, d = 0.50

"I was feeling so sad because I did not have someone to help me."



Ofelia drew her family for us in the focus group we conducted in 2015. Her four sons aged 4, 6, 8 and 13 are at the bottom of the drawing. Though she has drawn her husband on the right he died a few years ago, so she is alone with her four boys.

"Feeding them is hard, there is no rain and nothing comes from our farms. But my biggest problem was the behaviour of my older sons. There is a big difference between caring for boys and for girls. It is difficult to care for boys and because of the Sungukate now they (the boys) understand. Sungukate Felizada talked to them. When she came to visit she found them and sat with them. Before the boys were not accepting to do things and now they listen to me and when I say do something they do something – they don't disrespect me anymore because the Sungukate invited them to sit around and listen and she was coming back every time to see how they were doing, she came back and came back.

The other thing that has changed was that my preference for my kids was traditional medicine and now I go to hospital so that is the main change. The big changes can be seen in the little one because he was coughing so much and Sungukate Felizada made sure he went to hospital to get medicine so he is now better.

But the most change is in my heart. The Sungukate helped me in many ways with the stress. There were things I was not sharing with nobody and since Sungukate Felizada was visiting I began to share things and we found little ways to solve things. Before I was feeling I am alone so now I can share with her and she helps me. She is a lovely lady (she laughs softly).

I made the two things from clay (see photo below) to show how I felt before and how I feel now. This is a *lithelo* (a flat basket used for winnowing – traditionally this is a symbol of female sadness because new wives who have recently moved to their father-in-laws homes could sit quietly and cry only when they were winnowing nuts or grain with this basket).



I was like the *lithelo* (on the right of the photo) - I was feeling so sad. It was because I did not have someone to help me I had to do it alone. I was just thinking too much. Now I have the aid of someone else and I am shining because of that. So I made a flower (on the left of the photo). Now I have Sungukate Felizada I am like a flower.

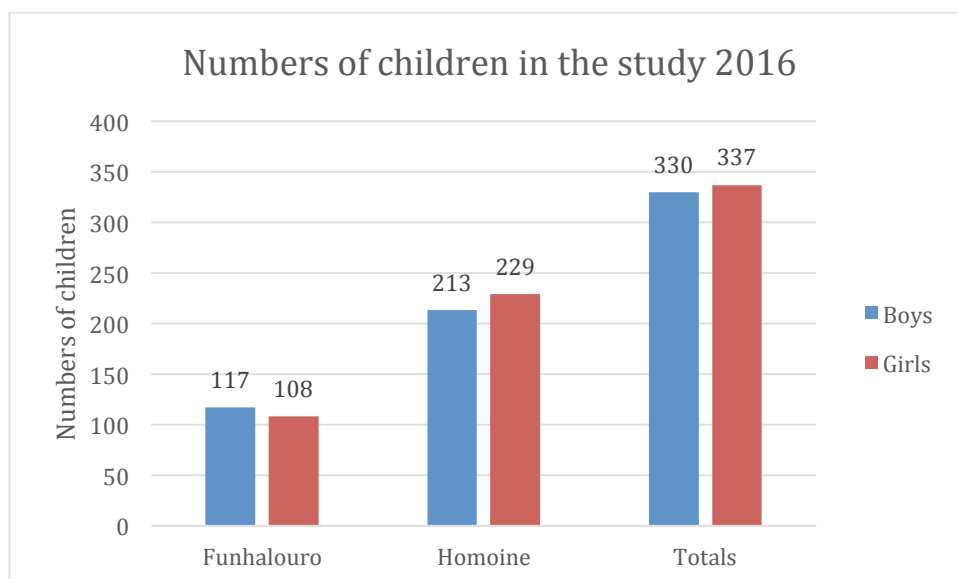
One of the most important issues that the qualitative research highlighted was the link between depression and behaviour change. Caregivers talked a lot about a feeling of “heaviness” and how this had lifted with the visits from Masungukate or Masungudota. They described how feeling “heavy” often prevented them doing things they knew they should.

I knew the mosquito net was needed for the baby but I was so heavy that I could not even do it. To pull it over the sleeping mat was too much, I just went to sleep - I did not even clean the dishes. (2015, Caregiver, Project, Macuine, Funhalouro)

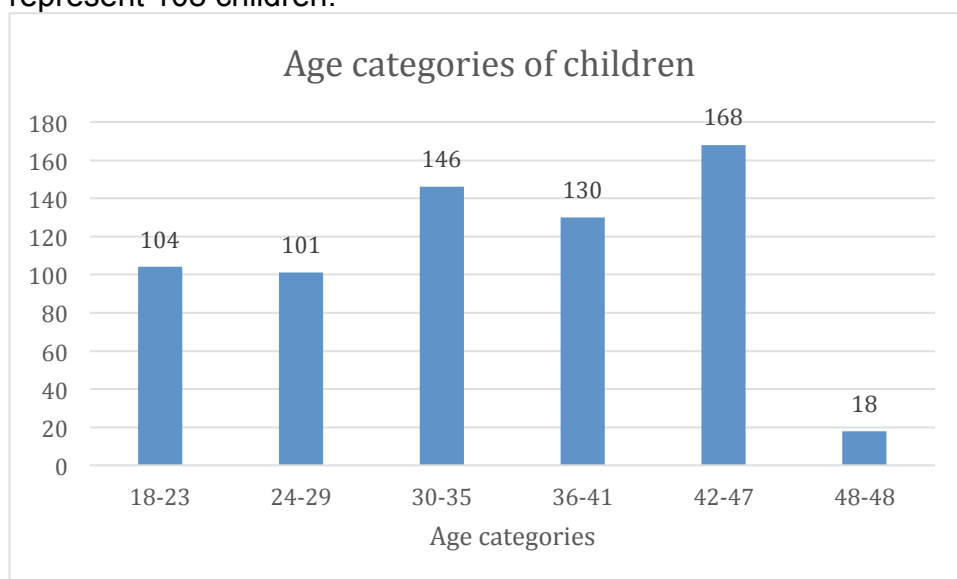
This link is confirmed through the quantitative data. We looked at inter-correlations of some of the predictors. In the context of emotional stress what emerged was that the SRQ20 had statistically significant correlations of moderate to low size with several variables, most notably with stimulation and hygiene and safety. What this illustrates is the link between being less emotionally stressed and being able to take action for the wellbeing of children.

4.2 CHILD STATUS

The data from a total of 644 children was collected in 2014. In 2016 we collected data from 667 children (project and control). These are in the proportion of approximately one-third in Funhalouro and two-thirds in Homoine, according to the sampling strategy. The gender and locality breakdown for 2014 and 2016 was very similar. For readability we have put only 2016 data into the graph below.



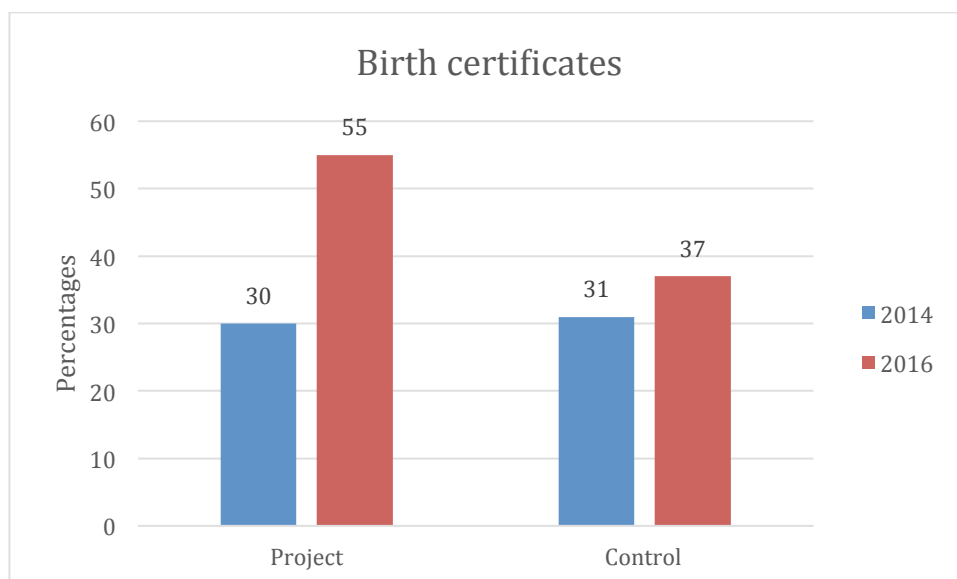
The sample was drawn from the 18 to 48 month range, with random selection of children in that range. The age category graph below shows numbers of children in each age group. As there are 31 months of children in the data set we have 5 columns showing 6-month periods, with one month left over at the end. Thus the last column shows just those children who are 48 months old. Proportionately, this would represent 108 children.



4.2.1 Birth certificates

In 2014 the percentage of children with a birth certificate in both control and project groups was almost the same (30 and 31% respectively). In 2016, the percentages for both groups rose, but by different amounts, resulting in an improvement of the project group over the control group (55% vs 37%) This is a statistically significant difference¹¹.

¹¹ $\chi^2 = 6.2$ df = 1, p < 0.01



The qualitative research gave us insight into this issue. What emerged is that one important barrier is a cultural one – local cultural norms say that fathers are needed to name a child. The traditional naming process has to happen with the father present. This often means the family waits until the father is home (from working away), but by then the three-month period in which the registration is free has lapsed. Another reason for waiting for the father is that some civic bureaucrats will not register a child without the father being present. Once the father has arrived the child is often over three-months old and the cost of registration is more than the family can pay. Transport costs to the closest office add to the cost of the registration.

In the project areas Masungukate/dota, together with their CBO managers organised for the *Registo Civil* officers to come to the villages. They then assisted in negotiating with officials when fathers were not present. This could account for the increased number of birth certificates in the project group. This approach is in line with the philosophy behind the CARE ECD program, which assumes that parents want to do the right thing for their children but contextual barriers often stop them from doing this. In this case the Masungukate/dota and the CBOs sought to help parents overcome the contextual barriers.

4.2.2 Under-5 health card

In the baseline research in 2014 89% of children (project and control combined) had under-5 health cards. There was no significant difference between project and control group in 2016¹².

The qualitative research and reports from Masungukate/dota during implementation of the program showed us that though this indicator shows high numbers of children with an under-5 health card many caregivers do not take their children for regular growth monitoring and even struggle to get their child to the hospital or clinic when they are ill. Focus groups run with the Masungukate/dota suggest that one of the barriers to taking the children to the hospital is the long distance and the lack of

¹² $\chi^2 = 0.5$ df = 1, p > 0.48

money for transport. The quote from the Masungudota below shows how he overcame this barrier, building trust in the process.

At first the family were not trusting me. They did not know why I was visiting. I saw the child needed the hospital but they did not listen to me. So one day I took the mother and the child to the hospital. I paid for the transport and then they did trust me. Now they know I am there to care for the children. Now they are changing many things. (Sungudota, Homoine)

The quote below gives further insight as it shows the sense of powerlessness young mothers often feel in the face of child illness or contextual barriers such as distance, and how the simple intervention of a regular supportive visitor can make the difference.

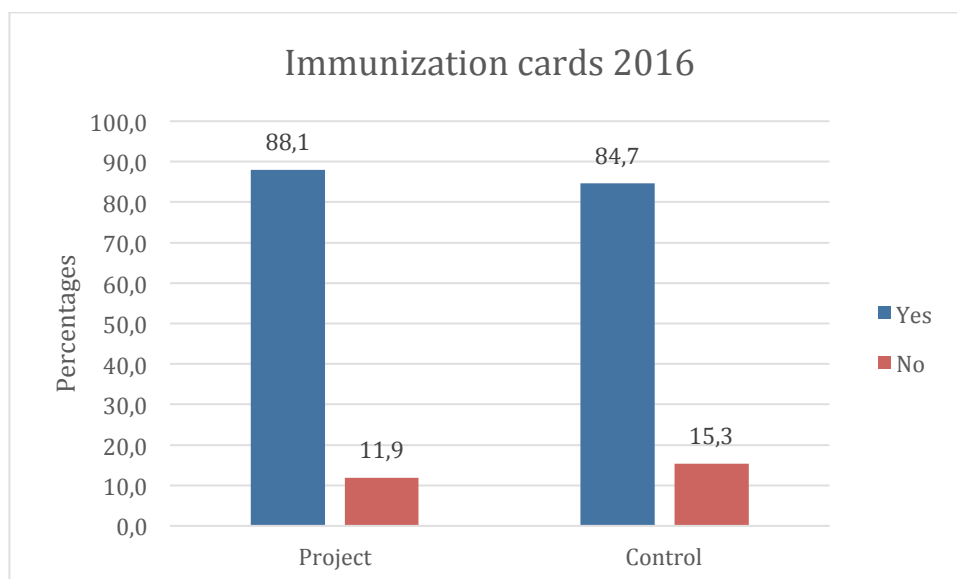
Aai the Masungukate are very important in our village because my child is now healthy because of the Masungukate. I love the Sungukate who visits me. I always want her to be visiting me. This son is so strong because of my Sungukate. She helped me a lot. When he was born he was very sick and I was using traditional medicine to give to him and he was not getting better. My Sungukate said I must take him to the hospital. I would say I am going to the hospital and get half way there and he was so sick that I would turn back again. But every day she came and said I must take the baby to the hospital. Then I took the baby and she helped me to give the medicine that the hospital gave me. Since I got the medicine the child feels better. She also brought me Moringa (a leaf from a local tree that is very nutritious) for the baby and showed me to put it in the porridge. She comes to visit only once a week now and she is always playing with my son to see that he is better. My son is healthy because of the Sungukate. (2015, Young woman, Project, Mavume Sede, Funhalouro).

It is clear that the support of the Masungukate/dota played a role in encouraging caregivers to take their children to the hospital. It is important to note, as the woman above describes, that the will is often there but the reality of walking long distances to catch a local taxi and the cost of the taxi often stopped parents from taking the children. Knowing that someone could support you practically and emotionally with this task helped many parents.

4.2.3 Immunizations

Analysis shows that the project group had statistically significantly¹³ more immunization cards than the control group in 2016 (88.1% vs 84.7%).

¹³ $\chi^2 = 6.77$ and 8.95 , $df = 1$, $p < 0.01$



The qualitative research confirms the role that Masungukate/dota played in this positive result. Caregivers described how their Sungukate taught them about the importance of immunization and then reminded them (often every day) to take their children when the vaccination was due.

Sungukate Marta showed me the page in the book (Visual Guide) about vaccinations. She reminded me to take my baby. One week she came every day to see if I had taken the baby yet. One day I felt so bad when she came again that I just took the baby that day (she laughs). (Older woman, 2015, Project Macuine, Funhalouro)

The regular ongoing visits by the Masungukate/dota were an important aspect of the program intervention as they motivated the caregivers to take action and apply the knowledge they learned in early visits, as this caregiver describes.

I started to cover the drinking water because she came to visit and I felt bad if she sees it uncovered. (She laughs). Mama Adelia did not check up or get angry, I just saw her coming and went to check it was done before she came as she was always reminding me. (2015, Caregiver, Project, Ndambene, Hoinine)

4.2.4 Nutrition

Two measures were used to assess nutrition status. One is dietary diversity and the other is a proxy for this, being weight and height data. In 2014 8.24% of children in the overall sample (project and control) were underweight. There was a difference in 2016 with weights in the control group being slightly higher than the project group but only just so ($F = 4.31, df = 1, 22, p = 0.05$).

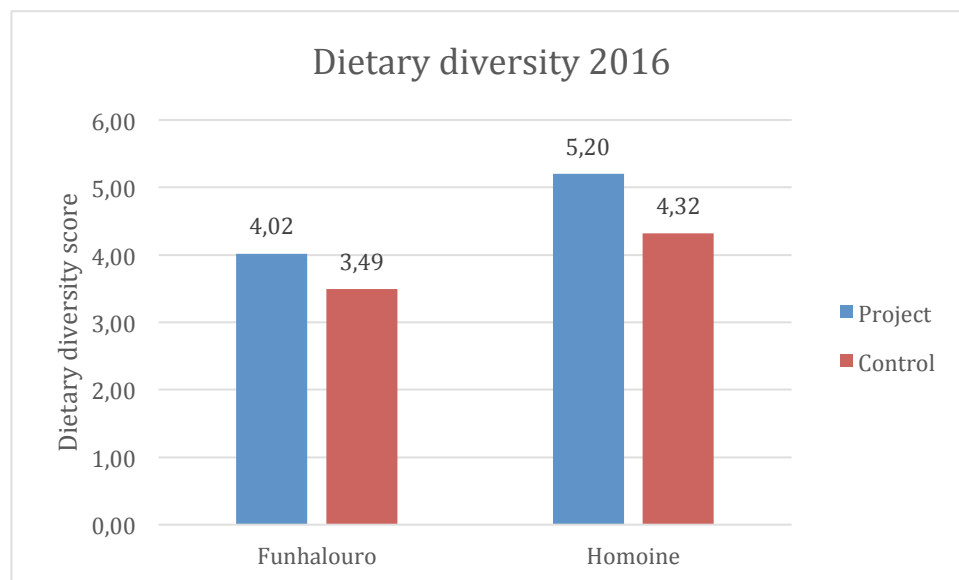
One of the reasons for the fact that the prevalence of underweight children has not changed in our project group could be explained by the fact that the focus of the nutrition component of the intervention was on infants who would not have been part of the sample in this research because the sample began at 18 months. Because of the slow start of the PROSAN intervention in the project areas the nutrition

component of the ECD program was focused on exclusive breastfeeding and diverse complementary feeding after six months. This would have benefitted children who were born during the intervention period of two years from 2014 to 2016, meaning that the majority of them would not be in the sample for this research. If we had included 6 month olds in our sample we may have seen a difference in weight gain between project and control group (Hendricks, M¹⁴ Pers. Comm.). Additionally, we had a very small sample of 18 month olds (104 in project and control). These children would have benefitted from the project but there are probably too few of them to have affected the data.

In 2014, 41.35% of children in the overall sample (project and control) were height stunted. In 2016 there was no statistically significant change. This is understandable given the time period of the intervention. Two years is not enough time to impact on children’s height and weight. This is understandable given the fact that once height stunting has taken place in a child under two years¹⁵ it is difficult to impact on it (Beaton, 1993; Harahap, H, et al. 2000).

The second way of measuring good nutrition for development is to look at dietary diversity. The more diverse a child’s diet, the more likely they are to be getting all their nutritional needs met. A measure of this was obtained using the Children’s Dietary Diversity Score (CDDS), (Swindale and Bilinsky, 2006). It was used at an individual child level, not the household level. The tool assesses which of 12 different food groups the child has eaten in the last 24 hours.

Dietary diversity was statistically significantly higher for the intervention group than the control group in 2016¹⁶. The graph below illustrates this.



¹⁴ Prof. Hendricks, Assoc Professor and District Paediatrician, School of Child and Adolescent Health UCT

¹⁵ Kristjansson, E. Francis, D. and Welch, V. et al. (2016) in their review of the impact of nutritional supplementation make this point but also refer to research (Waber, DP, et al., 1981) that suggests this has not been conclusively proven.

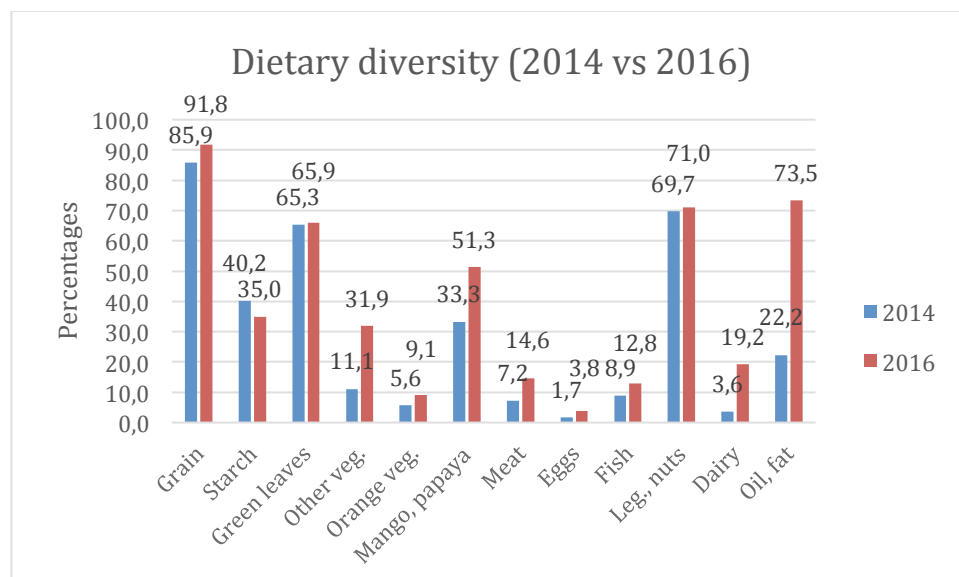
¹⁶ Mean = 4.81 vs 4.02, F = 18.71, df = 1, 21, p < .01

The table and graph below compare 2014 and 2016 data for Homoine and Funhalouro combined. From this we see that there was an increase in the percentage of children consuming most food groups. What is particularly important is the increased number of children eating orange vegetables and fruits and protein sources. These food types were key messages in the project's parenting education around nutrition.

Dietary diversity percentages for 2014 and 2016 in the project group

	Grain	Starch	Green leaves	Other veg.	Orange veg.	Mango, papaya	Meat	Eggs	Fish	Leg., nuts	Dairy	Oil, fat
2014	85.9	40.2	65.3	11.1	5.6	33.3	7.2	1.7	8.9	69.7	3.6	22.2
2016	91.8	35.0	65.9	31.9	9.1	51.3	14.6	3.8	12.8	71.0	19.2	73.5

Note the percentages in this table do not add up to 100%. This is because children eat more than one item in their diet. So if all children ate all items every cell would have 100% in it.



4.2.6 Developmental milestones appropriate for age

The Malawi Development Assessment Tool (Gladstone et al. 2010) developed in Malawi for monitoring and surveillance purposes in clinical settings was used to measure developmental milestones. We chose this particular tool because we thought it would relate better to the Mozambican context than many other tools from a developed world context. It should be noted that the use of MDAT in this context was not diagnostic and the analysis of results did not attempt to make comparisons with the normative data developed in Malawi. The scores were treated as mere numbers that could be compared across groups and over time, using appropriate statistical techniques.

The MDAT investigates child stages of development across four domains: gross motor coordination, fine motor coordination, language and social development. There were some differences in both project and control between 2014 and 2016 (i.e. all children seemed to improve their scores) but these were small. There were no significant differences between project and control in 2016 in any of the four

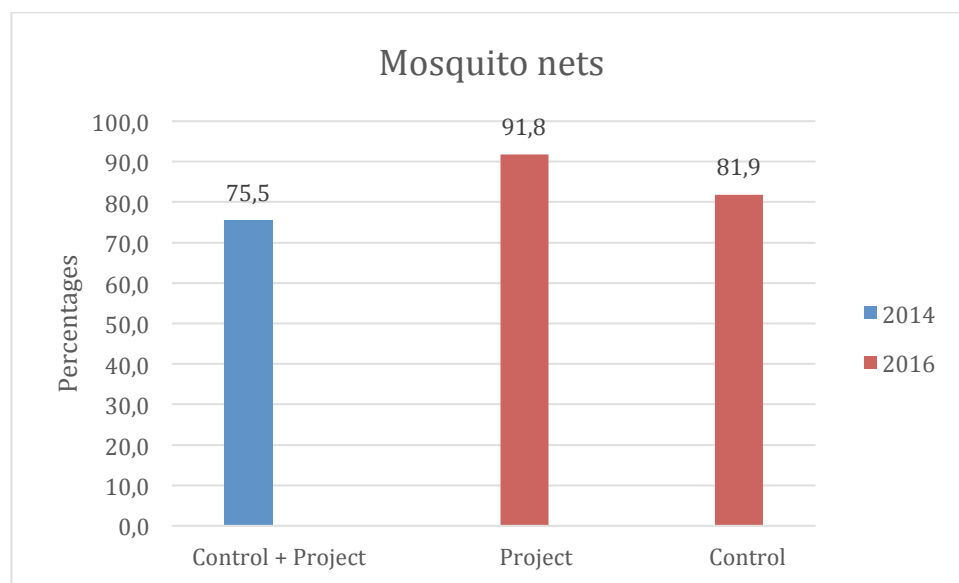
domains. Like the weight and height data, this is understandable given the short intervention time of two years. We would expect differences in future years as the program continues.

The results show increased stimulation activities by parents (4.3.2) this should result over time in impacts on cognitive and language development indicators. Dawes, Biersteker and Hendricks (2012) highlight the fact that the best way to enhance cognitive and language development in under-fives is through group activities. The program has introduced playgroups run by Masungukate/dota into all villages in 2016 so this too should have an impact on development indicators in future.

4.3 CAREGIVING ENVIRONMENT

4.3.1 Mosquito nets

In 2014 75.5% of caregivers reported that children slept under mosquito nets. Research fieldworkers could not check this so the results here are **reported** use of nets. In 2016 the reported use of mosquito nets went up in both project and control groups. 81.9% in the control group now used nets and 91.8% in the project group. The difference between groups in 2016 was significant¹⁷.



It is clear that the CARE ECD program has made a difference in the use of mosquito nets. In the 2015 qualitative research on change of behaviour caregivers described why they had changed their behaviour. One common reason people referred to was hearing the correct knowledge for the first time.

We used to think that you could not get malaria in summer, only in winter so we didn't use the nets all the year. Then the Masungukate told us you can get malaria all year. Now I use the nets every, every day. (2015, Caregiver, Project, Mavume Sede, Funhalouro)

¹⁷ $\chi^2 = 7.28$, $df = 1$, $p < 0.01$

These results suggest that simple information-giving if it is done in a conversational context can have a huge impact. The importance of a non-didactic and non-authoritarian style of information-giving was pointed out by caregivers.

My Sungukate is very friendly. She is so kind. She saw I was using a mosquito net for the chickens (as a coop). She asked me if I loved my chickens more than my children – we laughed at that together. (2015, Caregiver, Project, Maguba, Homoine)

In the 2015 research many caregivers described how this relational and friendly approach made them want to please the Masungukate that visited them and this motivated them to change their behaviour.

4.3.2 Stimulation

The HOME inventory (Caldwell and Bradley, 1984) measures home-based indicators of child development such as caregiver stimulation of children through play. There was a significant difference between project and control in 2016 in relation to children's access to play materials¹⁸. The project group reported giving their children greater access to play materials (91% vs 85%), suggesting they understand the importance of play.

We explored interaction between caregivers and their children in the qualitative research by asking them to draw all the things they do in a day **with** their children. What emerged in the baseline research in 2014 was that almost all of the drawings showed that caregivers spent most of their time interacting with children around functional tasks.

I wake him up in the morning and wash his face and dress him. I tell him to sweep the yard.

Researcher: How old is he?

Five years. Then I tell him to play with his sister. Then I tell them to wash their hands so that they can sit and have lunch. (2014, Younger woman, Project Nhaliseqqe, Funhalouro)

In 2014 in control groups the response was much the same but in 2016 in the project groups caregivers talked about play.

I come home from the shamba (fields) and make lunch and then we play a little bit.

Researcher: What do you do?

I play with him on the rope swing that Sungukate Amelia made at my house. (2016, Older woman, Project, Matimbe, Homoine)

The caregivers often linked this discussion directly to education they had been given by Masungukate/dota.

My Sungudota told me it is one of the rights that children have to play. If you are always keeping children busy with work they will be angry. When they are

¹⁸ $\chi^2 = 5.35$, $df = 1$, $p < 0.02$

seeing other children playing they will be angry. You must play with them and tell them stories. (2015, Caregiver, Project, Chinchinguire, Hoino)

Another important impact, which is discussed in more detail in the full evaluation report is the increased involvement of men in the lives of children. Caregivers talking in the 2015 qualitative research reported this.

She (Sungukate) told even my husband that if the children come up to you, hold them and love them, it will be easy for them to come to you and you can tell them if they do something wrong if you love them. (2015, Caregiver, Project, Moguba, Hoino)

The Sungukate are talking to them and the men are also now talking to the children (at home). At first when the Sungukate came to visit us the husbands were not there and then when we told them (what the Sungukate said) they were not believing and disrespecting us. So the Sungukate came when the men were there and talked to them. Now they are believing and they even say, "You must do 'this and this' because the Sungukate said so" (she laughs). The men are respecting too now. (2015, Caregiver, Project, Macuine, Funhalouro)

4.3.3 Acceptance (positive discipline)

Acceptance is the term used in the HOME inventory to describe caregiver behaviour related to discipline. We found that the project group improved from 2014 to 2016 by 25.5%, much more than the the control group, which improved only by 8.1%. This change is statistically significant¹⁹.

We explored this indicator extensively in the qualitative research. What emerged in 2014 was that that in most cases the first response of caregivers is to "bonga bonga" which means to shout and in many cases to beat the child. In 2016 control group responses were the same as in 2014 but many caregivers in the project group said they would talk to the children and not beat them. The story below illustrates how this change began with the Masungukate and their own families and then spread through their example and education to the caregivers.

¹⁹ $\chi^2 = 29.38$ df = 1, p < 0.01

"I never thought that I could change."



Sungukate Sauneta in Macuine, Funhalouro with her two younger children

I love to be a Sungukate. In most of the houses I always talk about the relationship between the caregiver and the children to show parents how to build a nice relationship so children are not scared of their parents. I always talk about this because in my neighbourhood daily I was hearing children crying because they have been beaten by their parents and that was a worry for me since I learned at the training that we must teach caregivers to love their children. So I always talk about this first because I see children suffering.

This helped me because I was not loving my children. I was beating them also, before I became a Sungukate. I have three children, the youngest is two and a girl of seven and my boy is twelve. My children are very *abongile* (thankful) now I am a Sungukate (she laughs softly). They are very glad because I am not beating them anymore. My past with them was very shameful because I was constantly beating them. Now I am not beating them. Now I talk to them - I am not talking loud - I am having a nice conversation. We are friends now, (she laughs softly again). I changed because of the training.

It was a surprise. I never thought I could change. I went to the training and I thought I would not be different but I can see the change in my own life. I first learned the knowledge in the training that we should not beat the children. But I learned also from the book because I use the book to teach the caregivers. There is a page where there is a person with a child who has a stick and another picture of someone with a daughter showing love – it is that picture that I love. That picture did change me.

I live with just my children. My husband is in *Joni* (South Africa). He comes home in December or sometimes in the middle of the year. He does send money for food for the children so it is not too difficult but it is lonely. That is why I was beating and getting angry with the children. But I told him about loving the children and he also is happy because he sees that the children are so happy now. We sit together as a family now and we talk, like the book (*Visual Guide*) says.

4.3.4 Safe and hazard-free home environment

We used a checklist devised for an evaluation of a national ECD project in South Africa to measure this indicator (Dawes, Biersteker and Hendricks, 2012). Items are based on common safety and hygiene hazards identified in the course of fieldwork in rural areas. We adapted it slightly to the Mozambican rural context.

The hygiene section of the checklist covers topics such as whether children and adults wash their hands with soap and water before eating and after using the toilet, whether toilets and drinking water are suitably covered and so on. The safety section looks at storage of hazardous materials (medicines, inflammables), children playing near dangerous places or hazardous objects, child supervision, responses to accidents or emergencies, and so on. Scores from 0 to 1 are possible, where 1 shows a safe and hazard-free home environment.

In 2014 overall (project and control) score is 0.60. In 2016 the project group's score had increased to 0.71, while the control group score was 0.65. This difference was significant²⁰, which suggests that the health and safety education provided by Masungukate/dota was successful.

Qualitative research conducted during the program implementation phase suggests that this was one of the major impacts of the program. In some villages every family who was part of the project had built a latrine, largely because of the initiative of the Masungukate.

The big change for me is that I built a latrine. We did not have one before. We used the bushes. Then Sungukate Linah said we needed and she helped me. She came and helped me to dig the hole. (2015, Caregiver, Project, Moguba, Homoine)

In two of the villages the initiative went beyond the homes that were part of the project.

*Everyone in our village has a latrine now.
Researcher: All the people visited by the Masungukate?
No everyone. Our leader told them, everyone must follow what the Masungukate are teaching. So we made a team and we helped all the people in the village. (2016, Sungukate, Macuine Sede, Funhalouro)*

²⁰ Mean = 0.71 vs 0.61, F = 15.54, df = 1, 22, p < 0.01.

5. Conclusion

The aim of the impact evaluation was to assess whether the ECD program improves child development and nutritional outcomes and, if improvements do occur, which program components contributed significantly to that impact in the different environments.

5.1 Impact

The results presented above prove conclusively that impact has been made on caregiver status, child status (to some extent) and the caregiving environment – the pillars of ECD as identified by the Essential Package.

Home visits from Masungukate and Masungudota in the villages around Funhalouro and Homoine have given caregivers **information** they did not have before. More importantly, the evaluation shows that they have applied this information by changing their behavior. **Behavior changes** have been recorded in use of mosquito nets, home safety and hygiene, use of latrines, immunization, feeding children diverse foods, birth certificate access, taking children to the hospital when ill, stimulation of babies and children and in the reduction of beating and shouting to control children.

The Masungukate and Masungudota have become trusted friends who are able to help caregivers overcome contextual barriers such as lack of water sources and long distances to the hospital by providing encouragement and in many cases actual practical assistance. This support goes beyond **accessing services**; caregivers now have a regular visitor who cares about them and their children. The evaluation results show that this has had a significant impact by **reducing caregivers' emotional stress**. Caregiver stress is a major risk factor in early child development (Walker, 2011) and this evaluation shows how it can be reduced through a home visiting approach.

The caregiver education and practical support received from the Masungukate/dota have **increased dietary diversity**. Mothers and grandmothers now understand the importance of including foods with Vitamin A and protein in a young child's diet and they are applying this knowledge. This is a remarkable result given the present drought.

The results of the evaluation show the program has **impacted on relationships** between parents and children. Acceptance and affection have increased and parents report that they are no longer beating and shouting as they used to before the Masungukate and Masungudota began to visit. Parents (fathers and mothers) who have been part of the CARE ECD program talk about showing love to their children, thereby creating strong attachments, which we know are central to young child wellbeing (Richter and Naicker, 2013). This is a significant impact – it is known to be very difficult to change long-held social norms such as parenting behavior related to corporal punishment, or gender roles related to parenting (Regalado, Sareen, Inkelas, Wissow and Halton, 2004; Muñoz Boudot, Pettesch, Turk, Thumala, 2012)

No impact was recorded in **height and weight** gain but careful analysis and discussion with a nutrition expert²¹ of these findings suggests that we might have

²¹ Prof. Hendricks, Assoc Professor and District Paediatrician, School of Child and Adolescent Health

found change if we had included younger children (under 18 months) in our sample.

In the area of **learning and stimulation** the results of the evaluation show that parents now understand the importance of play as a tool for young children to learn. Men and women caregivers report that they now play with their children more often than they did before they became part of the program. The fact that men are becoming involved in care and interaction with children is a most significant impact. Though we did not identify an impact on cognitive and language development, given the two-year implementation period this is perhaps unsurprising. However, we hope that this will be recorded over time as parents continue to stimulate their children through play and storytelling and the children participate in the playgroup program.

It is important to note that any impacts of the CARE ECD program go beyond individual families. Entire communities have begun to change their behavior as Masungukate and Masungudota use their status within the community to encourage general care for young children.

The evaluation illustrates that these significant impacts can be made in remote rural areas where most parents are not literate. This is an important finding in the Mozambican context where pre-schools need to be complemented by home-based ECD because of the remoteness and poor access to resources of so many people.

5.2 Implementation

The ongoing qualitative research undertaken throughout the program implementation period provides useful information on which program components contributed significantly to the changes seen in project households. But before looking at this we would like to emphasize how important the pre-program implementation research done in 2013 was especially in the context of behavior change.

The use of what Wessels (2015) calls an “ethnographic phase” is slowly becoming an important practice, particularly in implementation programs that include community practices and processes. Bray and Dawes (2016) in a recent review of research on parenting point out that

Social scientists have long recognised the difficulties in initiating and sustaining effective behaviour change interventions. A current argument mounted by those working in the field of parenting support internationally is that such interventions need to be “culturally compelling”, rather than merely culturally appropriate ... In practice, becoming culturally compelling means fitting into, or ideally emerging from, local understandings of the family, and of the social fabric through which support is given and received more broadly, including leadership structures and administrative systems (p. 51).

The use of the data from the ethnographic phase carried out prior to the implementation of the CARE ECD program seems to have made the program “culturally compelling”. The extent of the behavior change recorded in this impact study suggests that the program has been able to “nestle within social and

ecological landscapes' so that they are led by, rather than compatible with, existing social realities (Panter-Brick et al., 2006)".

Alongside the fact that the program was "culturally compelling" we would suggest that the findings of this impact research also suggest that the genuine relationship built over time between Masungukate/dota and caregiver was central to the impact. These two aspects stand out for us as evaluators as key areas of implementation for success. We discuss below some details within the two broad areas highlighted above and other implementation factors that played a role in impact.

Building trust and reducing emotional stress

The qualitative research shows us that the issue of trust is a complex one because there is a strong tradition of not talking outside the family about problems. But it is clear that many Masungukate/dota have managed to overcome this reticence through their caring actions and through their perseverance. Having **someone in the neighborhood that is seen as trustworthy** has made a contribution to reducing emotional stress. The **regular visits** by Masungukate/dota provide caregivers with ongoing emotional support. In some cases Masungukate/dota were able to solve specific problems that caused emotional stress, especially in the area of family relationships or in helping families access available services. But they could not easily address structural or contextual issues such as crop failure, lack of water or distances to the health facilities. Nevertheless, it is clear that they have **mediated these structural problems by 'standing with' the caregivers** while they coped with the problems – after all, they too also faced these issues. This support clearly meant a lot to caregivers and reduced their stress. Masungukate/dota have become wise and constant visitors, welcomed by the children too. They represented someone to play with, chat to, laugh with and break the hardship of stress, especially in the time of drought.

It is worth noting that the research that informed the original model suggested that visits should be made once a week if they were to impact on the emotional wellbeing of caregivers. The evaluation findings support this point as it seems that it is **the regular and frequent nature of the visits** that has the impact. It is important to point out that once a week is quite frequent in the life of a man or woman whose livelihood depends on their own labor. This means the Masungukate/dota should be allocated no more than 6 or 7 households to visit and these households must be close to their homes. If not, the burden of their role will become too much and motivation will dwindle.

Another important implementation issue relates to **the values that were promoted during the training of Masungukate/dota** and the way they see their role. The program staff worked hard to build an approach to parents that was not didactic and authoritarian. Masungukate/dota knew they had information to give to parents and skills to teach but they also knew that their role was to be a friend. One of the songs made up by the Masungukate/dota at the training reinforces how they **saw their role as a collaborative one**.

We Masungukate don't come to change the rules of your home.

We Masungukate come to exchange experiences.

We will help each other to take care of our children.

In addition, the Visual Guide developed for use by the Masungukate emphasized the relationship aspect of the Masungukate/dota's work through **modeling friendship and listening in the illustrations**. This modeling of behavior was a factor in encouraging a relationship between Masungukate/dota and caregiver as was the 'wanting to please' the Masungukate/dota phenomenon which was based on a genuine relationship between caregiver and Masungukate/dota.

Intervening to help caregivers access services

Masungukate/dota have played a role in the education of caregivers about the importance of birth certificates and the need to register the child when it is born. But **there is often a need for direct intervention beyond education**. The important facilitating factor here was that the Masungukate/dota were supported by local CBOs who had the power to contact and 'contract' local district officials to help. This points to the **need for community-based volunteers to be linked to support structures such as NGOs and CBOs** with connections to government officials beyond the village.

The qualitative research suggests that caregivers knew they should take their children to the hospital but the reality of walking long distances to catch local transport and the cost of the transport often got in the way. The research thus also shows that those involved in support of caregivers need to be aware that knowledge on its own is insufficient and that providing support to overcome contextual barriers is a critical counterpart. . The Masungukate/dota were able to help caregivers overcome this barrier, not through practical help (though this did sometimes happen) but through emotional support and encouragement. They were able **to mediate the context so that caregivers could do the best that they could for their children**.

Behavior change as a result of combined factors

The behavior change related to health, hygiene and safety resulted from a combination of correct information, day-to-day encouragement and reduced emotional stress. Firstly, caregivers need **correct information** if they are to make the right decisions for their children. The training the Masungukate/dota received gave them the correct information and then the Visual Guide made sure that the correct facts were passed on to caregivers. Simple factual information was obviously important in matters such as mosquito net use, the need for latrines, safe water practices and safety in the home, as well as dietary diversity. The **day-to-day encouragement** by Masungukate/dota to change behavior and the fact that their **regular visits and supporting care reduced depression** also played an important role.

The **example set by Masungukate/dota** in their own homes and the fact that they **worked together to implement more difficult infrastructural changes** such as digging a hole for a latrine seem to have also been important implementation practices. It is important to recognize that these were spontaneous responses that grew from the internal motivation of the Masungukate/dota and the recognition and status that they enjoyed in their communities. Future implementation should not seek to 'make' this happen, but should provide an environment within which such responses are supported.

Encouraging stimulation through play and responsivity

Giving information about why play was important for child development and why beating and shouting were harmful seems to be one reason for the change in caregiver behavior. However, changing long-held norms needs more than information. **Hearing personal stories of change and seeing changed relationships in the families of Masungukate/dota** seems also to have played an important role. The **role-modeling in the illustrations** in the Visual Guide **and the personal nature of those illustrations** also contributed to change in this area.

Building on the existing resources and energy in the community

It is clear that the person of the Sungukate/dota is central to the success of the program. **Identifying existing support people** in the project villages and extending their expertise and reach to mothers and children has been successful. Being a Sungukate or Sungudota gives women and men with skill and energy an **opportunity to find self-fulfillment in service**. This is an internal motivation that could be fundamental in promoting sustainability.

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