RESEARCH RESULTS BRIEF

The Malezi II Evaluation in Tanzania

Effectiveness of an integrated ECD intervention on caregiver knowledge and behavior

WHAT IS ECD AND WHY IS IT IMPORTANT?

Early childhood development (ECD) focuses on support for the holistic development of children from birth to age 8. Early childhood is a critical window of opportunity as the brain develops most rapidly in the first years of life[1]. The quality of a child's early experiences can have a lasting impact on health, learning, and even income. Research has shown that the earlier we invest in human development, the greater the return on that investment in terms of improved social and economic outcomes.

More than **275 million children** in low- and middle-income countries are at risk of suboptimal development including over 66% of children in sub-Saharan Africa[2]. Risk factors for suboptimal development include poverty, nutritional deficiencies, inadequate stimulation, maternal depression, family stress, violence, and maltreatment.

Eric Bond/EGPAF 2020

WHAT ARE THE MALEZI PROJECTS?

Malezi means "caring for young children" in Swahili. The Malezi I and Malezi II projects, funded by the Conrad N. Hilton Foundation, were designed to improve the well-being of young children and their families by integrating ECD messages and counseling into health services at facility and community levels in the Tabora Region of Tanzania. Under the Malezi I Project (2016-2017), UNICEF's Care for Child Development (CCD) package was introducted and adapted to the Tanzanian context with community health workers (CHWs) trained to counsel caregivers on ECD and responsive caregiving. An internal evaluation showed the intervention to be feasible, acceptable, and effective in improving some caregiver knowledge and practices. The Malezi II Project (2019-2021) introduced new multimedia components (radio messages and video job aids) to the existing ECD package and evaluated their effects on caregiver ECD knowledge and behavior.

WHAT DID THE EVALUATION EXPLORE?

The Malezi II evaluation compared the effect of two interventions on the knowledge and practices of caregivers of children under 3 years of age in the Tabora Region. Researchers hypothesized that both interventions would lead to improved caregiver knowledge and behavior, but exposure to the full intervention package would lead to more significant improvements.

RADIO MESSAGE INTERVENTION (RM)
Aired 10 times per day on the 3 most popular stations in Tabora for 9 months (March-December 2020)

vs.

FULL INTERVENTION PACKAGE (RM+V+CCD)
- **Radio messages** (same as left)
- **Short video job aids for CHWs**
- **CCD-based provider training and home visits**

Radio messages reached an estimated 400,000 people. The 37 different radio spots focused on the importance of playing, talking to and praising young children, positive discipline to help children learn, and the importance of child interaction with both mothers and fathers.

[1] UNICEF 2014, Building Better Brains: New Frontiers in Early Childhood Development.
[2] 2010 estimate; Lu C, Black MM, Richter LM. Risk of poor development in young children in low-income and middle-income countries: an estimation and analysis at the global, regional, and country level. *Lancet Global Health.* 2016 Dec;4(12):e916-e922

Five **short videos** (5-6 minutes each) were developed by our partner, Development Media International, for use by community health workers (CHWs). CHWs used electronic tablets to share and discuss the videos as part of facility- and home-based counseling on nurturing care. Four videos focused on age-specific (0-6, 6-12, 12-24, and 24-36 months) messages on responsive caregiving, safety, play, and communication, and one highlighted expected milestones from birth to 3 years.

CCD-based provider training was initially introduced in 2017. Before the Malezi II evaluation, over 400 health-care workers were trained to provide counseling on responsive caregiving and early learning skills. Provider training was integrated into pregnancy and under-5 services at facility and community levels, and CHWs were trained and monitored to provide **ECD counseling and support during home visits** in the full intervention districts (RM+V+CCD). Districts in the RM arm did not receive CCD-based provider training and home visits.

WHAT WAS MEASURED?

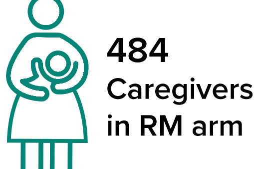
Data were collected through structured baseline and endline interviews with caregivers. Interview questions were selected from validated survey tools including the UNICEF Multiple Indicator Cluster Survey (MICS), a widely used household survey used in over 115 countries.

Main Outcome Measures

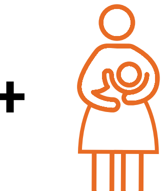
Measure	Description
ECD Knowledge	Survey questions on knowledge of caregiver support for child's mental, emotional, and physical development.
Early Stimulation	Survey questions about caregiver practices such as singing songs, reading books, and playing with the child.
Father Engagement	Survey questions about caregiver practices used by the child's father.
Responsive Care	Scores from interviewer observations of how caregiver engaged with the child during the interview, such as caregiver recognizing when the child needed help.
Environmental/ Household Risk	Scores from interviewer observations of inner and outer household area risks, such as open water, unprotected cooking areas, and sharp objects.

In addition to the main outcomes measures above, data were collected on socio-demographics, history of child illness or injury, and health care utilization. The Parenting Stress Index tool (PSI-36) was used to measure parent distress, quality of the parent-child relationship, and the extent to which the parent perceives the child as difficult. Survey questions on parental discipline practices and beliefs were adapted from UNICEF MICS and the Patient Health Questionnaire (PHQ-9) and the General Anxiety Scale (GAD-7) were used to assess caregiver depression and anxiety. To measure exposure to the interventions, data were collected on radio ownership, frequency of listenership, message content recall, and the number of CHW visits. In the RM+V+CCD arm, exposure to the intervention video through facility or home visits was also assessed. Using a health systems approach, data on all direct implementation costs for the Malezi II interventions were also collected to calculate annual costs per caregiver or listener, as applicable. Implementation costs were captured across 4 categories: human resources, capacity building, supervision and mentorship, and supplies and materials. Costs were annualized based on useful years of life, inflation, and a discount rate of 3%. The costs for the radio messages (including production and broadcast time) and video job aids (production) were calculated separately.

WHO PARTICIPATED IN THE EVALUATION?



+



520
Caregivers in the RM+V+CCD arm

Caregivers were living in randomly selected villages in 4 districts (2 each assigned to the RM and RM+V+CCD arms) in the Tabora Region. All had children under 3 years of age and consented to participate in the survey.

The majority of caregivers were biological mothers (98%) with a median age of 26 years in both arms. Index children were a median of 11-12 months of age at recruitment. Most caregivers were married or cohabitating (85%) and only 11% had more than a primary level education. Farming was the primary source of household income for 68% of caregivers and more than one-third of caregivers reported their household was food insecure, either weekly (14%) or at least once in the past month (22%).

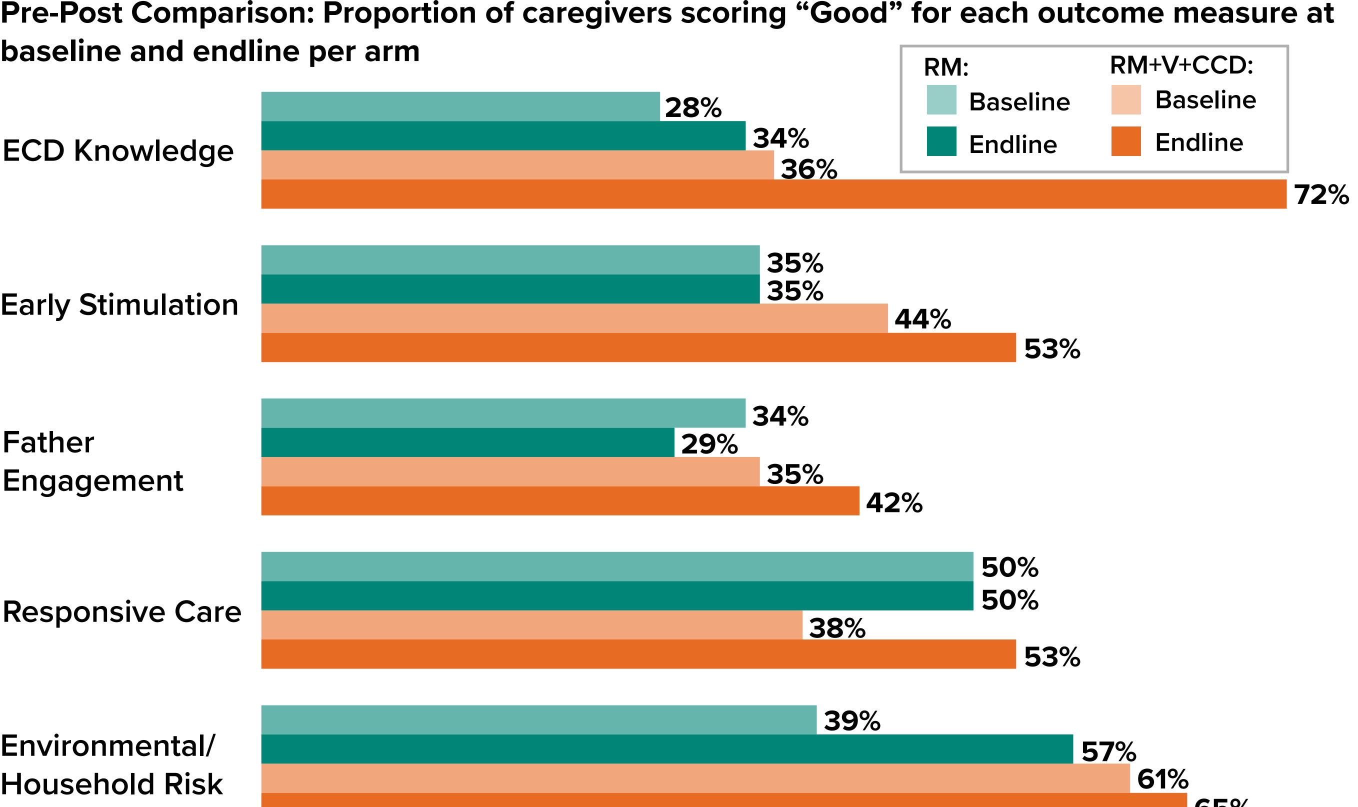
WHAT WERE THE KEY RESULTS?

Caregiver Exposure to the Multimedia Elements

	RM arm	RM+V+CCD arm
Reported hearing ECD radio message(s) and could recall content	**50%**	**69%**
Reported watching ECD video(s) at HCW visit or in health facility	**--**	**87%**

Both Interventions Improved Outcome Measures, but the Full Intervention Had a Greater Effect on Outcomes than Radio Messages Alone

Pre-Post Comparison: Proportion of caregivers scoring "Good" for each outcome measure at baseline and endline per arm



Note: There are critical differences between the two arms at baseline. Healthcare providers at RM+V+CCD sites began receiving CCD training in 2017. Therefore, caregivers in that arm were more likely to have been exposed to CCD messages before the baseline assessment, compared to caregivers in the RM arm, where CCD training never occurred.

To measure the effect of the interventions, interview questions and observations were scored and a cut-off was established for *good* or *poor* within each outcome. The chart above shows the proportion of caregivers scoring good at baseline and endline in each arm. In the RM arm, caregivers showed statistically **significant improvement in ECD knowledge and environmental/household risk** after exposure to the RM intervention alone. Caregivers in the RM+V+CCD arm showed **significant improvements in ECD knowledge, early stimulation, father engagement, and responsive care.** Findings indicate that the full Malezi II intervention package (RM+V+CCD) had a greater effect on ECD knowledge, early stimulation, and father engagement than radio messages alone.

Individual caregiver results were analyzed to explore how many caregivers moved from a poor score at baseline to a good score at endline. All outcome improvements in the RM+V+CCD arm were equal to, or better than, those in the RM arm. In fact, when taking into account baseline outcomes and child age, caregivers in the RM+V+CCD arm were **5 times more likely** to score well in ECD knowledge and nearly **twice as likely** to score well in early stimulation and father engagement. There was no change in scoring for responsive care and a minimal increase in the scores for environmental/household risk.

RM+V+CCD Caregivers were:

5 times

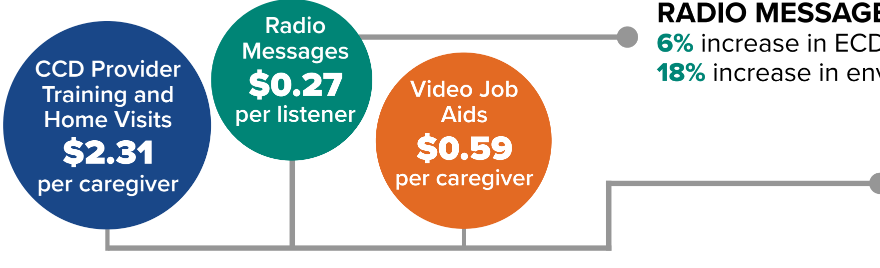
more likely to score well in ECD knowledge

2 times

more likely to score well in early stimulation and father engagement

Integrating ECD into Pregnancy and Under 5 Services Requires Only A Modest Investment and Results in Improved Caregiver Knowledge and Practices

Comparison of Annual Implementation Costs and Caregiver Outcomes



RADIO MESSAGES ALONE
6% increase in ECD knowledge score
18% increase in environmental/household risk score

FULL INTERVENTION (RM+V+CCD)
36% increase in ECD knowledge score
9% increase in early stimulation score
7% increase in father engagement score
15% increase in responsive care score

Radio messages were cost-efficient at only $0.27 per listener per year in this pilot, particularly given the notable improvement in environmental and household risk. The estimated cost drops to only **$0.01 per listener if rolled out nationally**, which is a compelling case for scale-up. Costs of the full intervention totaled only **$2.90 per caregiver** (excluding RM costs per listener) for the pilot. While costing data on ECD interventions is limited, a similar home visit program in South Africa was estimated to cost $177 per mother-child pair[1]. Given the demonstrated short- and long-term benefits of home visit programs in developing countries, the full Malezi II package appears to provide significant value with a modest investment.

Rodgers Gold/Development Media International, 2019

Parental Stress and Discipline Practices Were Key Factors Associated with Outcomes

Parental stress and caregiver approaches to discipline were key factors associated with ECD knowledge, early stimulation, father engagement, and responsive care.

- Caregivers with high parental stress were **significantly less likely** to have scored well in ECD knowledge, father engagement, and responsive care.
- Caregivers with **higher non-violent discipline scores** were **more likely** to have good early stimulation and father engagement, whereas caregivers with **higher violent discipline scores** were **less likely** to score well in responsive care.

KEY TAKEAWAYS

- The full Malezi II package of interventions led to significant improvements in caregiver ECD knowledge, early stimulation, father engagement, and responsive care with a modest investment of only $2.90 per caregiver.
- Radio messages offered significant value for money and had a notable effect on environmental and household risk, providing a strong case for national scale-up.
- Integrating a package of ECD interventions, including radio and video components, into existing health services was an effective way to improve caregiver knowledge and practices and is recommended for scale-up.

Additional resources on the Malezi II Project:

- See www.pedaids.org for more information on the Malezi II Project and to read the second Malezi II evaluation research results brief, which highlights changes in CHW skills and the quality of nurturing care counseling after rollout of the video job aids and enhanced supervision and mentorship.
- See *Effectiveness of an integrated multilevel early child development intervention on caregiver knowledge and behavior: a quasi-experimental evaluation of the Malezi program in Tanzania* on BMC Public Health
- To view the Malezi II short videos, please see the DMI website: https://www.developmentmedia.net/project/malezi-ii/

[1]UNICEF 2016, Development of an Investment Case for Early Childhood Development in South Africa.