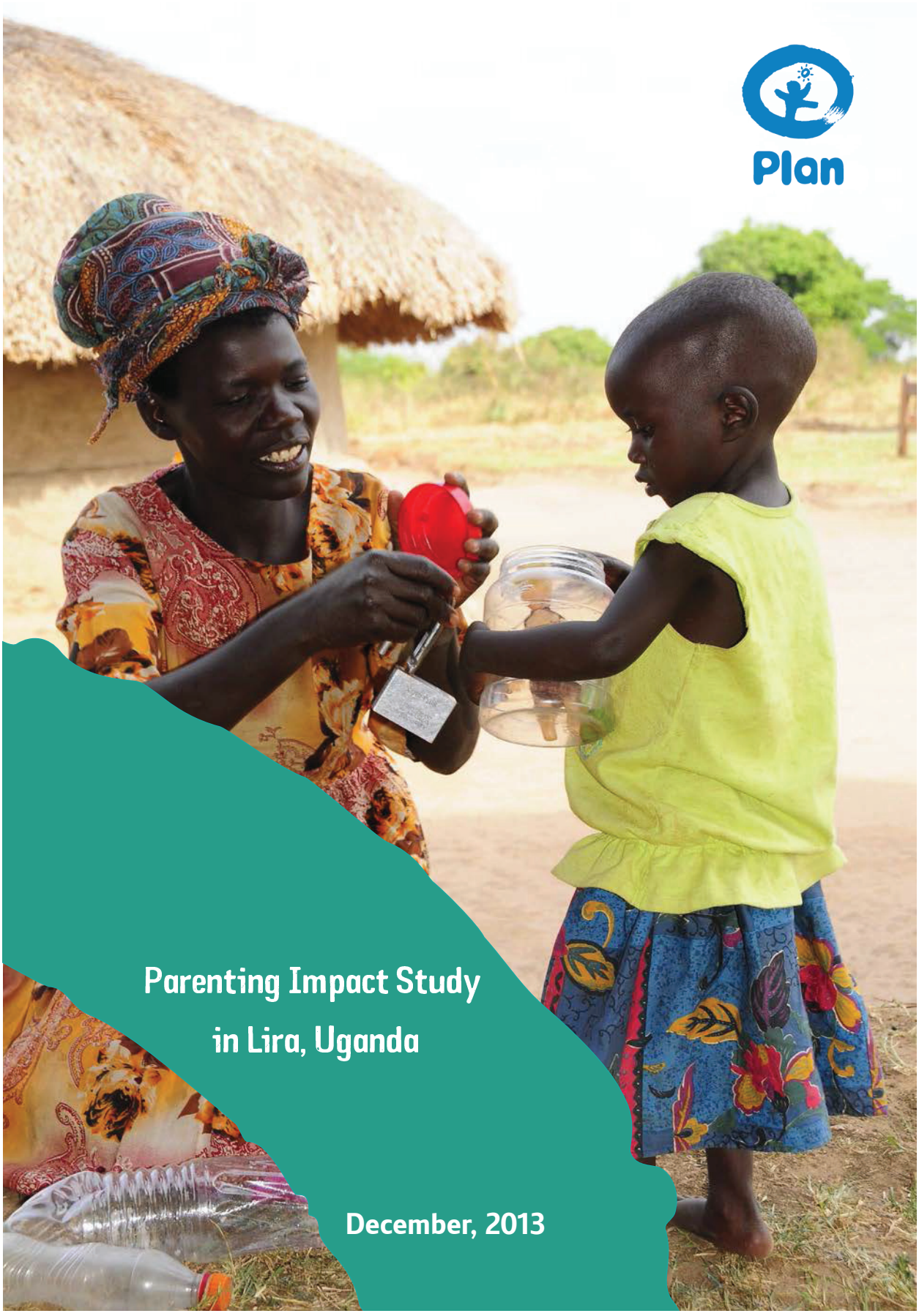


Plan

Parenting Impact Study in Lira, Uganda

December, 2013

CONTENTS

EXECUTIVE SUMMARY

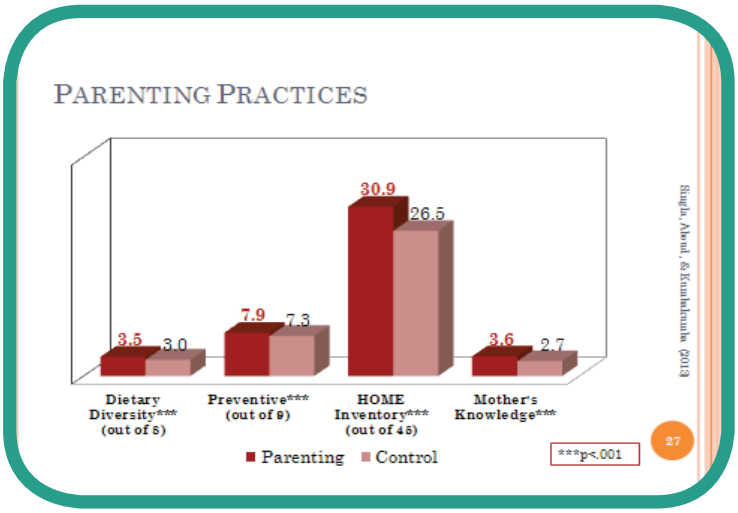
The report describes the development, implementation and evaluation of a parenting program to improve child health, growth and mental development, as well as parenting practices and maternal well-being. The program targeted five key practices involving diet, hygiene, play, two-way talk, and family relationships. A manual for the 12-session program was developed based on the need to focus on a minimum number of critical practices and to engage multiple faculties of participants in the learning process.

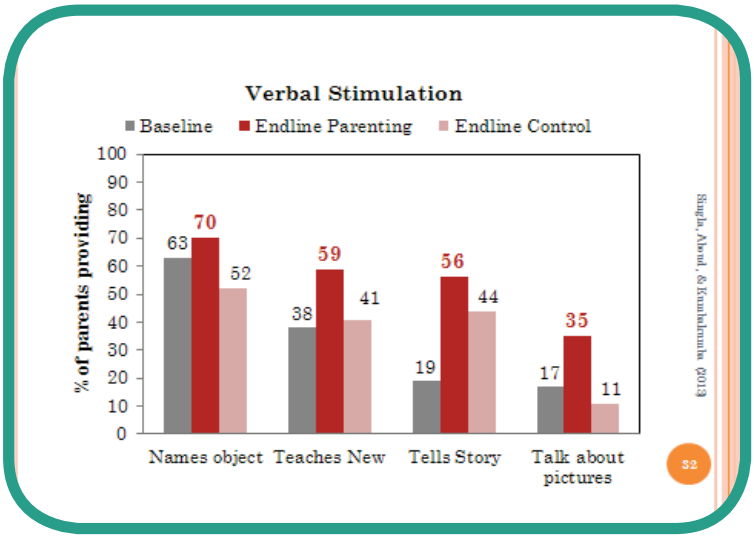
The program manual underwent a number of revisions based on feedback from the Plan Uganda ECD team. Mothers and fathers from six parishes in Lira, a northern site, were invited to participate in this pilot program, and their data were compared to parents from six control parishes in which an ECD Centre but no parenting program yet existed (n=291). Local community facilitators were trained with the help of Plan's technical officers to deliver the sessions fortnightly to groups of 20-35 parents.

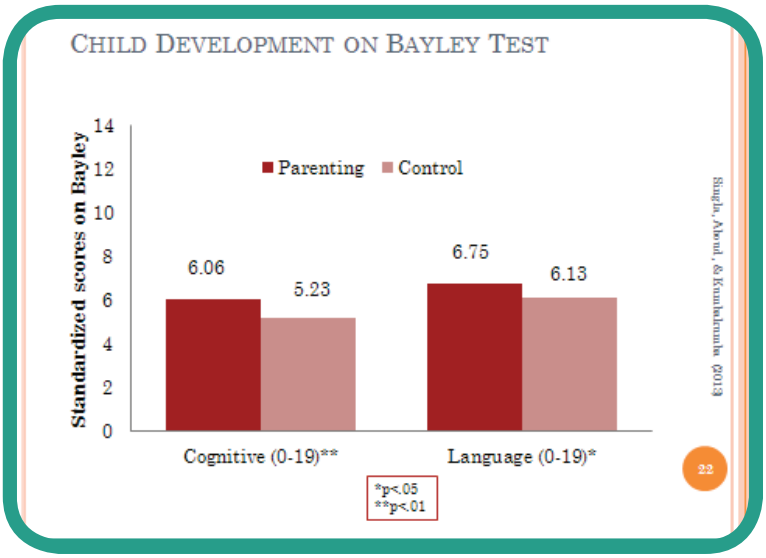
The program had a distinct content and format. It focused on five critical practices that are necessary to improve the health, growth and mental development of children and that were insufficiently practiced in Uganda. These included feeding at least three meals a day with some animal-source foods, washing hands with soap and water, providing play time and materials for children, engaging in two-way conversations with children, and showing love and respect for all family members. The format utilized peer support, practice and problem solving activities in each session. For example, parents were to practice playing word and toy games with their child, creating and role-playing skits to practice communication and conflict resolution with spouses, and discussing frequently asked questions about practices. Posters with coloured depictions of the practices were used to aid recall. Program participants also received home visits to help them overcome barriers to implementing the practices.

Mothers were interviewed in January 2013 and again in October 2013 once the program had finished. Their children between the ages 12 and 36 months at baseline were tested for cognitive and language development using the Bayley Scales.

The HOME Inventory was used to observe opportunities for stimulation in the home. Six local research assistants were trained to administer the interviews and tests before and after the program. Data were then analyzed to compare those who had undergone the parenting program with a comparable group of parents who had not. The two groups were similar on a number of socio-demographic variables such as mother's education, family assets, and children's ages. Mothers had on average 4.2 years of education and fathers 6.8 years; family assets were 4.8 out of a possible 11; household size was close to 6.







Findings showed positive benefits for those who received the parenting program on most practices and outcomes. Parenting practices improved considerably as a result of the program: parenting participants had significantly higher scores for dietary diversity, preventive practices, psychosocial stimulation, and knowledge of infant milestones as compared to control parents. For example, many more of those who attended parenting sessions provided animal-source foods such as fish and eggs, along with the usual staple foods. They also provided play materials more frequently and engaged in more verbal stimulation such as teaching something new and talking about pictures.

The Plan parenting program had significant effects on maternal well-being with mothers reporting reduced depressive symptoms and higher positive support from husbands. Their coping skills, however, while improving over the year did not differ from the comparison group. Finally, the program produced significant and beneficial effects on children's cognitive and language development scores compared to the non-parenting control group. There was no effect on children's growth as indicated by length for age z-scores, and many were sick in the past 2 weeks. Although diet improved, it would be optimistic to expect this to translate into greater height-for-age scores within the short period under study.

In sum, the Plan parenting program benefited mothers and children in a wide variety of outcomes and has the potential to positively influence the lives of children in other community settings in Uganda.

INTRODUCTION

There is now a concerted effort worldwide to improve the growth and development of young children. While the Millennium Development Goals include a target of universal primary education by the year 2015, many children are not equipped to complete the early grades, let alone fifth grade. Preschool coverage is increasing as non-governmental organizations (NGOs) scale up early child education in rural areas of developing countries.

However, the first 24 months of a child's life are now recognized to be critical for later growth and development. Because of poor nutrition and low psychosocial stimulation at this important age, half of children under-5 years in the developing world are not attaining the cognitive and language skills they need for school and beyond (Grantham-McGregor et al., 2007). Sources of poor development most often identified are inadequate nutrition and stimulation (Walker et al., 2007). Because children under 3 years of age are dependent on their mothers for nutrition and stimulation, researchers have found that the mental health of the mothers is critical for child health, growth and development.

To address the problem of insufficient growth and development in the early years, Plan and other NGOs have developed and trialed a variety of parenting education programs. A number of models are available and recent systematic reviews of their evaluation identify the components of more and less successful models (Yousafzai & Aboud, 2014). Some have used group sessions and others home visits, but the combination of the two appears to build on the strengths of both delivery settings. Some include multiple messages about 20 or more aspects of parenting, whereas others concentrate on a limited number of critical practices for growth and development.

Finally, multiple strategies for active learning of desirable practices, such as practice, discussion and problem-solving, may be more beneficial than group discussions. An online forum of the Asia-Pacific Regional Network for Early Childhood (ARNEC, 2011) on parenting programs concluded as follows: where parents had the opportunity to try an activity with their child and get some feedback, they better understood the purpose and potential benefits of their practice as compared to when they were only engaged in mere discussion of the topic.

Plan International has contributed to this global search for an effective parenting model by trialing and evaluating a variety of models. They have confronted the challenges of developing and implementing parenting programs in several countries of Africa and south-east Asia. In Bangladesh, while the initial program with 40 group sessions on many topics had small effects on mother's knowledge and home stimulation, it did not improve

the way mothers interacted with their children and did not affect children's growth and language development (Aboud, 2007). Subsequent changes to the format, including a streamlined number of messages and more active participation, led to significant improvements in parenting practices and child outcomes (e.g., Aboud, Moore, & Akhter, 2008; Aboud & Akhter, 2011).

A more recent evaluation of Plan Uganda's parenting program in six sites around the country found few differences between those who attended the program and parents from neighbouring villages who did not have a program (Aboud & Kumbakumba, 2012). Although some sites were more successful than others, many parents could not recall specific messages, they did not engage in the critical parenting practices, and their children did not benefit. As a result, a modification of the program was developed, written up in an implementer-friendly form, and trialed in one site. The program focused on five main practices, and engaged parents in practice, discussion and problem-solving.

A robust randomized controlled trial design was used to compare the benefits in practices and child outcomes for those who attended the program and those in neighbouring villages who did not. The findings of this program are reported here.

Research Objectives

In collaboration with Plan Uganda, the objectives of this study were to develop and evaluate a parenting program to improve child development, parenting practices and maternal well-being. In particular, mothers' relationships with herself, her child and her spouse are addressed.

Specific objectives include:

a) To develop and manualize a brief community-based parenting program for Uganda;

b) To train local community facilitators to implement this parenting program; and

c) To evaluate outcomes of child health, growth and development; parenting practices and maternal well-being in those who attended the parenting program compared to those with another ECD program.

METHOD

Setting

Lira is a sub-district located in northern Uganda, 352km north of the capital city. The population is mostly Christian, involved in farming, small business and wage labour. A previous study (Aboud & Kumbakumba, 2012) showed that education levels in Lira are low (M=4.46 years) and household sizes are large (M=6.5 members). A number of other health and development indicators revealed that children in this area need support from a parenting program.

Participants

Twelve parishes where Plan was arranging to begin early childhood programs were included in the current study. Six were randomly assigned to pilot the new Plan Parenting program; the remaining six focused only on preschools (ECD centers). Parishes rather than villages were assigned to a program in order to keep the parenting and non-parenting groups separate during the study. Plan Uganda has been working in rural Lira as well as several other sites to improve early child development through parenting and preschools.

Mothers of children 6 to 24 months were recruited for the current evaluation. They resided in one of the twelve parishes. Parents who were more socioeconomically disadvantaged (i.e., education and assets) were identified through a census conducted in December 2012 and included in the sample. Parents and their children in the six selected parishes were enrolled in the parenting program by Plan in January 2013. Plan and community volunteers recruited these parents through community meetings and individual visits. The inclusion criteria for the study were being a disadvantaged family and having a child in the 6-to-36 month age range. Other parents were free to attend the program but were not interviewed for this evaluation.

From our baseline sample (n=348), the final endline included a total of 291 mother-child dyads—160 parenting program participants and 131 non-parenting participants. The primary reasons for this drop in participants includes parents not being found at endline and one village being omitted because only a partial program was implemented.

Sample Size Estimation

The sample size was calculated on the basis of the main outcome, namely the Bayley Scales of Infant and Child Development III. The mean is normally 10.0 with a standard deviation of 1.5. A sample of 110 children is required for the parenting program group and 110 for the comparison group, for a total of 220. This allows us to detect a difference of .50 standard deviations on one primary outcome such as language, using an alpha of .05

and a power of .80. We have multiplied the sample size by 1.25 to account for clustering as we were taking 10 to 15 children from each village. Also we expected some attrition if mothers could not be located. We therefore interviewed more mothers-child dyads than necessary.

Study Design & Timeline

The design is a randomized cluster trial, stratified by parish rather than village. Six parishes were randomly assigned to receive the Plan parenting program as a pilot project while six comparison parishes were on a waiting list to receive the parenting program in the following year. Each parish has approximately two communities which may consist of one or more villages (here, called clusters). Ten to fifteen children and their caregivers were recruited from each of the 24 communities (12 parenting, 12 non-parenting). Baseline data were collected in January and February 2013. Endline was then conducted in October 2013, approximately one month after the program was completed. Consent was obtained from caregivers before testing children at their homes. Ethics approval was obtained from both McGill University and Mbarara University of Science and Technology. The study was registered as a clinical trial NCT01906606.

Parenting Program

A twelve session parenting program was developed during September to December 2012. The program was based on five major practices related to child care and maternal well-being. It was delivered on a bimonthly basis over the course of eight months between February and August 2013. Through a series of interactive activities including role playing, games, parent-child interactions, and group problem solving, parents were engaged to learn new practices. Mothers and fathers were assigned homework to practice during the week and discussed in the following session. The program sessions were delivered in a group format by a local, female or male community facilitator. The parenting program includes six sessions on child care and six additional sessions on mother's well-being. During the session, the facilitator used a series of colored posters depicting the messages; families received their own Activity Booklet with smaller versions of these posters. Parents also received several home visits to solve problems they personally encountered.

Childcare

Messages concerned child care practices, namely dietary diversity (feed animal-source foods and provide 3 meals per day with appropriate quantities); hand-washing and sanitation; providing home-based play materials; talk with the child; and gentle discipline. Mothers heard about the benefits of these practices, enacted the practices with their child, and solved related problems.

Maternal care

Messages concerned relationships with self, child and spouse. In each session, scenarios of mothers and fathers in healthy and non-healthy situations were used to facilitate a discussion about various interpersonal conflicts and whether the mothers encounter such experiences. This includes, for example, communication styles with her partner, managing emotions with her child and utilizing supports within the family and community. Sessions were delivered in a similar format for fathers only, discussing issues concerning their involvement in child care, regulating their emotions such as anger, and the types of emotional support that they can provide to facilitate the health and development of their children. Of these six mother care sessions, two were delivered to only mothers, two were delivered to only fathers and two were delivered to mothers and fathers together.

Control Group

Individuals in six non-parenting parishes did not receive the pilot parenting program. The intention was to evaluate the benefits of the parenting program before implementing it in all Plan sites. Instead, these parishes focused on the preschools in the ECD centers. During baseline testing, control participants also received nutrition information and a colored poster to explain what constitutes a diverse diet.

Selection, Training & Supervision of Community Facilitators

In collaboration with community leaders, facilitators were selected on the basis of various criteria. These facilitators were provided training by technical officers and the research team in January and again, in April 2013. Training was based on the manualized program. Communication strategies, taught to facilitators, were based on principles of motivational interviewing and general interpersonal skills. Technical officers supervised facilitators to ensure that program delivery followed the content and format of the manual. Specifically, technical officers attended sessions, conducted home visits and provided community facilitators with structured feedback through the monitoring checklist (see Appendix A and B). They provided attendance sheets to be completed at each session.

Procedure for Data Collection & Training

Two waves of data collection were conducted by eight trained research assistants at baseline and endline. Testing lasted approximately one hour and took place in the child's home. Mothers were interviewed by trained research assistants with structured measures. Child tests were administered by a second research assistant in the presence of the child's mother or caregiver. Measures were translated and back-translated. Most have already been used as part of a previous parenting assessment (Aboud & Kumbakumba, 2012).

Eight local research assistants with Bachelor degrees were recruited and intensively trained for one week ahead of testing. Field tests were conducted and confirmed a good interrater reliability where correlations ranged from .75 to .82. During and after training, research assistants received detailed feedback on their interview style and data records. Of the eight research assistants, six were the same at pre- and post-program data collection. At both baseline and endline, data collection took approximately four weeks. Care was taken to keep research assistants blind as to the participants' program condition.

Measures

A set of measures assessed indicators of family status in terms of parental education and assets. Child outcomes included recent sickness, nutritional status and child development. Maternal well-being was measured in terms of maternal depressive symptoms, ways of coping, a daily stress index and perceived social support. Parenting practices expected to change directly as a result of the program included preventive practices for health, dietary diversity, home stimulation, and mothers' knowledge of ages for development milestones.

Socio-demographic indicators: The following social and demographic variables were recorded during an interview with the mother.

- Maternal education, age, household size and composition, religion, father's age and occupation, 11 family assets (e.g., table, chair, bed, watch, latrine);
- Child's age and gender
- Maternal autonomy measured opportunities for the mother to make decisions and access resources in the community. This was assessed with a series of questions on her decision making and autonomous mobility regarding feeding and medical care. For decision making, there were five questions asking mothers about who decides what medical care to seek for a sick child, whether she can go to the clinic when she or her child is sick, what foods to purchase for the family, what to feed the child, and if she can visit her family. Response options were whether the mother made the decision alone (2), jointly with another person (1), or she had no say (0). The mother's mobility was assessed with a parallel set of questions about whether she was able to travel to a clinic for her own or her child's needs, to a market or nearby shop to make purchases, and to visit her family. Response options were alone or with child (2), with another same-aged woman (1), only with a husband or elder (0).

Child's health, nutritional and developmental status included:

- Sickness in the past two weeks was assessed during the mother's interview. If sick, we asked about three common illnesses, namely diarrhea, fever, and cough. Care-seeking was also assessed.

- ◊ Length for age was assessed with tape measures. Two readings were taken and the average was used to derive z-scores using international WHO standards. This assessed child's growth.
- ◊ Cognitive and language development was measured using the Bayley Scales of Infant Development III (2006). Two of the four subtests, namely Cognitive and Receptive Language, were administered here, after modification and translation. Previous versions of the Bayley were used in Bangladesh (Black et al., 2007) and Brazil (Eickmann et al., 2007). It is the best conventionally and internationally used measure of cognitive and language development for children of this age.

Parenting practices are included because they were expected to change directly as a result of the program.

- ◊ Dietary diversity is assessed by asking the mothers for all foods eaten by the child during the previous 24 hours. Quantities were not recorded. The number of food categories out of eight are recorded: grains, tubes, legumes, fish/meat, egg, vegetables, fruit, and cow's milk. Biscuits and sugar are not counted (Daelmans, Dewey, & Arimond, 2009).
- ◊ Preventive health practices included access to safe water, use of latrine for disposal of feces, deworming, use of iodized, immunization of measles, bcg, dpt, polio, and vitamin A drops. The score of these practices is summed for a maximum score of 9.
- ◊ Home Inventory measures opportunities for stimulation of the child, using a 45-item structured interview and observation conducted with the mother in the presence of her child in her home (Bradley & Corwyn, 2005). It has been modified and used in Uganda (Aboud & Kumbakumba, 2012) with good reliability and validity.
- ◊ Mothers' knowledge of the ages for expected child development is assessed with 6 items asking mothers at what ages children in general acquire social and cognitive skills such as...recognize the mother, begin to understand words spoken to him/her (Aboud, 2007; Aboud & Alemu, 1995). Expected ages (reversed) were used as the indicator of the mother's knowledge because her errors were usually one-directionally higher than observed ages. High scores therefore reflected more appropriate (young) ages for child development and correlated positively with mother's education.

Maternal care: Plan Uganda explicitly stated the need to include a component on maternal well-being. They noted that mothers were not able to attend to children because of their excessive stress from family work and conflict. Consequently, we used available maternal depressive symptoms, perceived social support, several items from each of the coping

subscales (Folkman & Lazarus, 1985) and a Daily Stress Index (Bolger, DeLongis, Kessler & Schilling, 1989). All measures were modified, piloted and validated for the Ugandan context.

- ◊ Maternal depressive symptoms are measured with the 20-item Center of Epidemiological Scale of Depression (CES-D; Radloff, 1977). The CES-D is commonly used in Africa and South Asia with good convergent validity and has been previously used in Uganda (Nakasujja et al., 2010). The wording was modified based on preliminary use with this sample.
- ◊ Daily Stressors Index (Bolger, DeLongis, Kessler & Schilling, 1989): This modified 15 item scale assessed the degree to which mothers experienced stressors in the past two weeks. These included practical stressors (e.g., access to food and transport) as well as interpersonal issues (e.g., demands or arguments) with spouse, family members and people outside of the home. Participants were asked whether they experienced these stressors on a 0-2 scale: never (0), sometimes (1) or often (2). The scores were summed for a maximum score of 30.
- ◊ Ways of Coping Questionnaire: This scale measured how mothers handled interpersonal conflicts. Mothers were asked to think about a conflict they experienced in the past week and whether or not they used specific coping strategies. Active and passive means of coping with the proposed conflict were suggested including "talk to someone else about the problem', 'make a plan and follow it' and 'try to forget about the whole situation and do nothing'. All items were scored as 0 (no, strategy not used) vs. 1 (yes, strategy was used). Items were summed for a maximum score of 16.
- ◊ Positive & Negative Social Support Measure: This scale was used to measure supportive and critical forms of emotional support (Newsom, Mahan, Rook & Krause, 2009) that might change as a result of the program. In Bangladesh, we previously piloted and modified a 7-item scale for this population to focus specifically on emotional support—items reflects spouse's expressions of warmth, sympathy, and caring along with those of criticism, lack of sympathy and lack of caring. All items began with the stem "In the past week, did your husband..." and ratings were made according to the number of days in the past week. Three items assessed positive perceived support (in the past week, did your husband listen to you... show affection...appreciate your work) and four items assessed negative perceived social support (in the past week, did your husband insult you...avoid you...hurt your feelings ... demand a lot of you). Response options include rarely (0-1 days= 0), from time to time (2-3 days= 1), or often (4 or more days= 2).

Recall of messages (0-15) was assessed only at the endline. Mothers from both control and program groups were asked if they recalled receiving any messages about child care. It was expected that even control mothers would recall receiving messages from community health workers and from the nutrition information and poster given to them. Afterwards, we coded their answers, giving a maximum of three points for each of the five practices, namely food, hygiene, play, talk and love.

Data Analysis

Data analyses were conducted to examine pre- and post-program differences between the program and comparison groups using SAS procedures that compensate for clustering. ANCOVA was used, covarying child's age, height for age, mother's education family assets, and household size, along with the baseline score for that dependent variable.

RESULTS

Baseline results (see Table 1) indicate that participants in the parenting group as compared to the control group were similar on most socio-demographic variables. There were no significant differences in child's age, mother's age, mother's education, father's education, family assets and decision-making autonomy.

At baseline, children were on average 26.66 months, and ranging from 11 to 37 months old. The mean level of education among mothers was 4.16 years compared to 6.98 years for their husbands, and families owned an average of 4.79 assets out of 11. This indicates that families were indeed disadvantaged. Significant differences occurred for father's age, household size, child birth order and mobility scores, whereby participants in the parenting program had significantly higher scores than control participants.

Decision-making and mobility scores ranged from 0 (no say, no mobility) to 2 (full say and mobility): the mean decision-making score was 1.00 meaning that most women had some say in deciding what to feed their child and whether to visit the clinic with a sick child. The mean mobility score was high at 1.73, indicating that mothers' had very good access to community resources such as shops and clinics.

Table 1. Baseline Means (SD) and t-values comparing parenting and control groups on socio-demographic variables

Variable	Parenting (*n* =194)	Control (*n* = 155)	Range	t-value (p)
Child age (months)	26.66(6.8)	26.66(6.5)	12 to 37	0.01(.99)
Girls (%)	45.88(89)	52.60(81)	—	1.55(.22)
Mother's age, years	27.84(6.9)	27.97(8.1)	16 to51	1.06 (.29)
Mother's education, years	4.16(2.9)	4.06(2.8)	0 to15	0.32(.75)
Father's age, years	34.31(9.6)	32.05(8.7)	15 to 62	2.21 (.03)
Father's education, years	6.98(2.7)	6.65(2.7)	0 to 15	1.08 (.28)
Household size	6.08(2.2)	5.57(2.1)	2 to 14	2.22 (.03)
Birth Order	3.80(2.3)	3.25(2.2)	1 to10	2.23(.03)
Assets (out of 11)	4.79(1.6)	4.77(1.6)	0 to 8	0.12(.91)
Decision making (out of 2)	1.00(.46)	1.07(.49)	0 to2	1.37(.17)
Mobility (out of 2)	1.70(.36)	1.36(.58)	0 to2	6.38(<.0001)

Child Outcomes

Differences between parenting program participants and controls were found on cognitive and language development, but not sickness or length-for-age (see Table 2). Among children whose parents attended the parenting sessions, standardized means on the Bayley subscales were as follows: cognition M=6.06 and receptive language M=6.75. Scores covered the full range of the scale from 1 to 17, indicating that some children were indeed performing very well. Children's mean length-for-age overall was z = -1.68 whereby 47% of children were moderately to severely stunted. A high percentage of children were found to be sick in both the parenting and control groups, mainly with fever; however parenting participants reported less sickness (M=73.4%) compared to controls (M=83.7%). This difference was not large enough to be significant.

Table 2. Means (SD) and F-values comparing parenting and control group on child outcomes

Variable	Time	Parenting (*n*=158)	Control (*n*=130)	Range	F-value (p)
Length for age, z	Pre	-1.69(1.1)	-1.66(1.2)		
	Post	-1.66(1.65)	-1.82(1.50)	-4.87 to 1.36	0.37(.54)
Past two week sickness (%)	Pre	75.6	80.2	—	
	Post	**75.5**	83.9	—	3.31(.07)
Bayley cognitive (raw,0-92)	Post	**58.85**(8.1)	55.64(10.7)	13 to82	
Bayley cognitive (std, 0-19)	Post	**6.06**(2.7)	5.23(2.39)	1 to 14	8.73(.003)
Bayley language (raw,0-47)	Post	**23.85**(5.7)	22.40(6.8)	13 to 47	
Bayley language (std,0-19)	Post	**6.75**(2.2)	6.13(2.1)	3 to 17	5.29(.022)

Note. The F-value is based on post-program scores, covarying child's age, length-for-age, mother's education, family assets, and household size along with the pre-program score. They Bayley was administered at posttest only; consequently, a different baseline language test was used as the covariate.

Parenting Practices

Parenting participants scored significantly higher on all four parenting practices when compared to controls (see Table 3). This includes dietary diversity, preventive practices, the provision of psychosocial stimulation in the home environment, and mothers' knowledge of infant milestones. With regards to dietary diversity, parenting participants were more likely to report serving 6 of the 8 food categories (i.e., grains, vegetables, fruits, eggs, fish, cow's milk); legumes and tubers were equally provided by both groups.

Some 48.75% of parenting children, compared to 27.48% of control children, received the minimum recommendation of 4 out of 8 food categories (F=4.96, p=.03). Parenting participants scored significantly higher on all preventive practices as indicated by immunizations, access to clean drinking water, use of iodized salt and placing children's feces in the latrine, when compared to controls. Lack of safe drinking water (M=24.05%) and no latrine for children's feces (M=28.9%) remained a problem in both parenting and non-parenting groups.

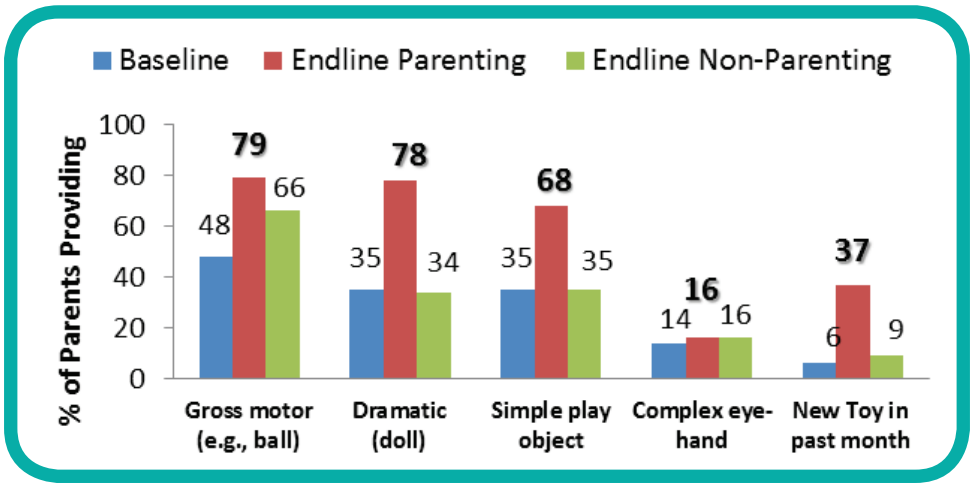
Table 3. Means (SD) and F-values comparing parenting and control groups on parenting practices before and after the program

Variable	Time	Parenting (*n* =158)	Control (*n* = 131)	Range	F-value(p)
Dietary Diversity (0-8)	Pre	2.79(.9)	2.69(1.2)		
	Post	**3.46**(.9)	3.03(.8)	2 to 6	19.28(<.0001)
Preventive (0-9)	Pre	6.62(1.19)	6.48(1.21)		
	Post	**7.90**(1.6)	7.26(1.4)	3 to 9	17.48(<.0001)
Home Stimulation (0-45)	Pre	25.59(4.3)	25.14(4.4)		
	Post	**30.96**(4.3)	26.52(3.8)	17 to 42	92.44(<.0001)
Mother's Knowledge	Pre	2.45(4.0)	2.95(3.3)		
	Post	**3.56**(2.3)	2.72(2.9)	-13.2 to 9.0	7.65(.006)

Note. The F value is based on post-program scores, covarying child's age, length-for-age, mother's education, family assets, and household size along with the pre-program score.

Home stimulation was significantly higher in parenting participants compared to non-parenting participants. For example, parenting participants were more likely to provide their children with gross motor, dramatic toys and simple toys at endline and compared to the control group (see Figure 1). Very few parents from either group provided their children with complex toys.

Figure 1. Provision of play materials at baseline and endline parenting and non-parenting groups



Maternal Care

Mothers who attended the parenting program reported significantly fewer depressive symptoms at endline than controls and compared to their own baseline. They also reported more positive support from their spouse when compared to controls (see Table 4). For example, of parenting program mothers, 53% reported that their husbands showed love towards their children and 37% reported that husbands helped with household or childcare work 'most of the days' compared to 47% and 19% of control mothers respectively.

No significant differences between groups were found for the number of daily stressors or coping strategies they used to manage interpersonal conflicts. Among daily stressors, mothers across both groups reported that they were most likely to experience practical barriers such as not having enough money to purchase basic needs (89.4%) and an inability to access transport (71.5%).

Table 4. Means (SD) and F-values comparing parenting and control groups on maternal care variables before and after the program

Variable	Time	Parenting (n =157)	Control (n =131)	Range	F-value (p)
Depressive Sx (0-60)	Pre	17.92(9.7)	16.05(7.5)		
	Post	15.31(12.3)	8.61(10.4)	0 to 54	9.66(.002)
Daily Stressors (0-30)	Pre	10.93(4.5)	9.4(3.8		
	Post	12.73(5.1)	11.67(4.5)	2 to 25	0.16(.69)
Ways of Coping (0-16)	Pre	8.90(2.6)	8.35(2.6)		
	Post	9.70(2.2)	9.06(2.4)	2 to 14	2.21(.14)
Negative Support (0-10)	Pre	2.14(2.2)	1.26(1.6)		
	Post	2.23(2.4)	1.50(1.9)	0 to 10	1.78(.183)
Positive Support (0-10)	Pre	4.83(2.9)	5.54(2.3)		
	Post	5.19(2.8)	4.52(2.2)	0 to 10	6.36(.012)

Note: The F value is derived from an analysis of covariance on post-program scores, covarying child's age, length-for-age, mother's education, family assets, and household size along with the pre-program score.

Recall

Finally, more messages were recalled by parents who attended the parenting program as compared to the control group who did not attend a parenting program but received some nutrition information (see Table 5). It is useful to note which messages were well recalled by mothers. Of the five categories of parenting practices, mothers who attended the program recalled practices related to love and respect and hygiene, followed by food, two-way talk, and lastly, play.

Table 5. Means (SD) and F-values comparing intervention and control groups on recall of practice messages at endline

Variable	Parenting (n=158)	Control (n=131)	Range	F-value (p)
Recall of Messages (0-15)	4.26(3.3)	88(1.5)	0-11	117.87(<.0001)
Food(0-3)	0.87(.9)	0.40(.1)	0-3	20.67(<.0001)
Hygiene (0-3)	1.03(1.2)	0.12(.39)	0-3	68.25(<.0001)
Play (0-3)	0.50(.65)	0.09(.30)	0-3	43.88(<.0001)
Talk (0-3)	0.81(.78)	0.04(.23)	0-3	15.77(<.0001)
Love(0-3)	1.06(1.12)	0.23(59)	0-3	49.64(<.0001)

CONCLUSIONS

As a pilot parenting program for Lira, it was very successful. The program was well-implemented by community facilitators with the help of technical officers. The most striking outcome was the benefits to children's cognitive and language development. The effect sizes after only 10 months were significant. Parenting practices were also very significantly improved with the program, especially those related to providing stimulation in the home, dietary diversity, and preventive health practices.

Mothers appeared to clearly understand that children develop social and cognitive capabilities at a young age, during infancy, and that during the early years they require stimulation. Children were still somewhat stunted; approximately 47% were moderately to severely below their age-appropriate height. This did not differ by group. The parents need to continue a higher level of dietary diversity and do this from an earlier age in order to impact stunting. Many children were sick with fever and other infections; sickness can also reduce nutritional gains if children lose their appetite at this time.

An important benefit of the program was that mothers became less depressed. They became less depressed whereas mothers not in the program became more depressed. The program reduce their daily stressors or yet provide them with better ways to cope with these stressors, however, positive social support from spouses and family was higher in the program mothers. These love-and-respect messages were well received by the mothers and well-remembered.

Overall, the mothers recalled over 4 practice messages clearly and concisely. On average, respect and hygiene practices were best remembered (on average over 1 per practice); talking and feeding practices were next (on average slightly less than 1 per practice). Practices related to play were least likely to be recalled, e.g. provide play materials, play with the child, provide novel or challenging games.

RECOMMENDATIONS

◊ The findings of this evaluation clearly support the recommendation that the program be implemented at all Plan sites in Uganda. Materials such as the posters and activity booklets are important. Participants benefited by having all their faculties active during the sessions, e.g., visual, hearing, physically practising, thinking how to overcome barriers and solve problems, role playing with other parents.

◊ Keep the Manual, modified if you wish, in order to make sure people do not cut corners. It is important that there be a mix of activities in each session and that participants hear correct and clearly articulated information. Vague messages such as "feed a balanced diet" are misinterpreted.

◊ Monitor the program more closely as it is being implemented, by means of accurate attendance sheets, supervisor observation of group sessions, and feedback to community facilitators. Until the program becomes well known, supervisors will need to provide help to facilitators.

◊ ECD staff should be working more closely with WatSan people to make sure that all families use safe water and a latrine. Almost one-quarter of families do not. No matter how much high quality food is given to children, it will be to no avail if watsan is poor at the home. Strikingly high rates of infection among the children draw attention to this problem.

◊ Parents were not very creative in thinking how to find play materials for their children. Although they provided gross motor materials, and simple objects to shake or rattle, these are not sufficiently complex to challenge the growing brains of a young child. Too few parents provided a new play material in the past month. Practices surrounding play can be addressed also during home visits when the Plan staff and/or community facilitator can identify materials in the home that can serve as complex and challenging play materials.

◊ Use the Plan Lira staff to help train other Technical Officers. We would be happy to help them develop a training manual.

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Community Led Action for Children (CLAC)

A systematic integrated community based ECCD approach that contributes to Plan Uganda's core program area "A Good Start in Life" whose major focus is the early years.

The CLAC approach aims at Strengthening capacity of families to effectively respond to children's needs and potential in the critical early childhood years (0 -8), Support communities to implement ECD centers and Transitions to Primary to ensure positive school outcomes, Strengthen Plan's capacity to work together in a more integrated, holistic way to achieve measurable improvements in lives of vulnerable children and build collective action for effective child care and development at neighborhood, parish, district and national levels.

The CLAC approach has four key components: parenting, quality ECCD centers, effective transitions to school, and partnerships and advocacy. Currently , the approach is being implemented in five districts -- Lira, Kampala, Luweero, Kamuli and Tororo.

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