



Philippines First Read: Endline Evaluation

March 2016

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Executive Summary

This report is the endline evaluation of First Read, an early childhood development program implemented by Save the Children in the Philippines, with funding from the Prudence UK Foundation. **The First Read Project aims to improve the developmental outcomes of children aged 0 to 4 years old** by strengthening children's home learning environments, providing age-appropriate play materials and books, and integrating early learning activities in existing community-led health and nutrition services in Luzon and Mindanao.

The endline evaluation consists of data from **approximately 300 caregivers and children surveyed at midline (2014) and endline (2015)** as well as **qualitative data from focus groups with First Read participants and parent volunteers**. These data are used to explore changes in caregiving knowledge, attitudes and practices and early childhood development in order to inform subsequent phases of First Read programming.

Overall, the results suggest that **caregivers have internalized the lessons of First Read regarding the importance of play, reading, and home-based support for early learning and psychosocial development**. However, although caregivers seem to be aware of the importance of adequate hygiene, regular medical check-ups and mealtime routines, malnutrition levels are high among the sampled population. **Of the children younger than 5 years old sampled at endline, 53% are stunted and 23% are wasted**. Further research is needed to validate these patterns, as the endline sample is not representative of the population of young children in Luzon and Mindanao.

Regarding child development, **children perform best in emergent numeracy and cognitive development domains, and are most at risk of falling behind in language and emergent literacy domains**. **There is therefore a clear need for continued early literacy programming**.

Several important differences between First Read participants and non-participants stand out. **First Read participants are almost twice as likely as non-participants to send their children to pre-school, kindergarten, or daycare**. Likewise, **First Read participants are more likely to have complete immunization and to have visited a health center in the last three months**. **First Read children also have higher emergent literacy and socio-emotional development skills** than non-First Read children. However, **in the absence of baseline data and without a comparison group these differences cannot necessarily be attributed to First Read**.

Equity analyses indicate that there is a **gender gap (favoring boys) in pre-primary school participation**, and **also according to geographic area** – being a girl and being from Luzon are both negatively associated with early education attendance. There is also a **gender gap in early childhood development outcomes** (again, favoring boys), especially for language, cognitive and socio-emotional development.

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I. Introduction

The foundations for cognitive, emotional, social and motor capabilities that prepare children for lifelong learning and development are established during the first five years of life (Phillips and Shonkoff 2000). In low-income countries, inadequate nutrition, lack of access to health and education services, and low levels of cognitive stimulation during these crucial early years prohibit many children from fulfilling their right to healthy development and lifelong learning (Grantham-McGregor et al. 2007). As a result, too many children enter primary school lacking the skills and knowledge necessary for success in the early primary grades (Snow, Burns & Griffin 1998). In these contexts, there is an urgent need for high quality early childhood care and development (ECCD) programs in order to support early learning and healthy development for all children.

This report presents the results of the endline evaluation of one such program: First Read, implemented by Save the Children in the Philippines, with funding from the Prudence UK Foundation. The First Read Project aims to improve the developmental outcomes of children aged 0 to 4 years old by strengthening children's home learning environments, providing age-appropriate play materials and books, and integrating early learning activities in existing community-led health and nutrition services.

The endline evaluation describes the results of a survey of caregivers and children conducted at midline (July-September 2014) and endline (December 2015 – January 2016). These are used to explore changes over time in caregiving knowledge and practices, health and nutrition, and early childhood development and association between these outcomes and participation in First Read. Qualitative data taken from focus group discussions with caregivers and First Read facilitators are used to contextualize these findings and identify programmatic strengths and weaknesses.

II. Project description

From 2013 to 2015, First Read targeted a direct reach of 24,535 children and 34,725 adults in 126 communities across 8 municipalities in Metro Manila (Luzon) and South Central Mindanao. First Read is committed to supporting the development of young children by ensuring that parents and caregivers have the knowledge and skills necessary to support their children's healthy development and early learning. At the same time, First Read partners with local governments to increase the provision and access of community-based ECCD programming.

The holistic approach of the First Read project is essential in building an enabling environment for children to develop and achieve the physical, mental and psychosocial wellbeing necessary to succeed in school. The specific objectives of the First Read project are as follows:

- Increase the knowledge, skills and confidence of parents and caregivers on early childhood care and stimulation

- Increase children's access to age-appropriate, indigenous play materials and books in the local languages and dialects
- Improve the health and nutrition status of children aged 0-4 years old, in partnership with community health centers (Barangay Health Centers)
- Improve the policy structures and mechanisms within Local Government Units (LGU) that support programs and services for children aged 0-4 years old

In order to achieve these goals, the project spearheaded three major activities in participating communities:

- **Parent Education Sessions (PES):** Parental educational classes which utilize a specialized 10-session module on parenting, early learning, and health and nutrition of children aged 0-4. PES aims to increase parents/ caregivers' knowledge and skills on early childhood care and development in order to help them become more confident in parenting and child-rearing. 3-5 meetings, spread in a month, are conducted to complete one batch of PES.
- **Play Group Sessions:** The Play Group sessions provide a venue for parents/ caregivers and their children to play and interact while being oriented on the proper use of toys for stimulation and techniques in early reading and story-telling. The Play Group tackles 5 topics derived from the PES module on child development, early learning, playing and reading. It takes 1-2 meetings to complete the sessions.
- **PES with Hearth:** These sessions integrate health and nutrition education with early childhood care and development, with the goal of emphasizing existing nutritional knowledge and practices that can be leveraged to reduce malnutrition. Topics include breast feeding, food preparation and cooking, and participants contribute fresh picked vegetables from their gardens to prepare and share with their children at the end of each session. The PES with Hearth also uses the PES module where the sessions are broken into 10-successive meetings. Children are weighed at day 1 and monitored for 24-days to identify changes in their nutritional status.

Upon attending these activities, participants were given books to be used at home so that they can apply the knowledge and skills they acquire. ECCD Resource Centers/ Corners are also being established within the communities to allow greater number of children to have access on stimulation and reading materials provided by First Read.

First Read activities are completed in two modalities. One is led by Parent Volunteers trained by First Read to roll out the activities in the communities, and the other is through mainstreaming in local government unit (LGU) programs, which target families with young children. For the first modality, potential beneficiaries or those families with children 0-4 years old who are invited by Parent Volunteers to join First Read. A project and ECCD orientation is provided to encourage them to attend the activities. For the second modality, all beneficiaries of LGU programs where

First Read is mainstreamed are included in the activities. A detailed timeline of the intervention timeline is described in Appendix A.

First Read areas were selected based on need (high poverty levels and marginalization). Within these areas, PES w/Hearth targets families with children 0 to 4 who are undernourished, while the other First Read activities are available to all families with children 0 to 4.

III. Methods

The endline evaluation of First Read explores caregiving knowledge and practices, children's health, nutrition, and early childhood development, as well as perceptions and attitudes regarding early childhood development and First Read among caregivers and First Read facilitators. To do so, the report draws on (1) quantitative data from a midline and endline survey of caregivers and children, and (2) qualitative data from focus group discussions with caregivers and with First Read facilitators.

3.1 Instruments

The caregiver and child survey tracked the same child/caregiver pairs at three points in time: baseline (2013), midline (July – September 2014) and endline (December 2015 – January 2016). The caregiver module includes information on the sociodemographic composition of the household, participation in First Read activities, caregivers' knowledge, attitude, and practices regarding ECCD, and the quality of the home learning environment (see table 1 below). Two instruments were used to assess children's development status: the Early Childhood Care and Development Milestone checklist (ECCD checklist) and a consolidated version of the International Development and Early Learning Assessment (IDELA). In addition, in order to assess nutritional status, children's height and weight were measured.

The ECCD checklist is currently used in public pre-schools and child development centers in the Philippines per the Department of Education Order No. 11 Series of 2014 to assess children's development in seven domains (gross motor, fine motor, self-help, receptive language, expressive language, cognitive and socio-emotional). IDELA, initially designed by Save the Children, covers five domains (gross motor, emergent literacy, emergent numeracy, socio-emotional development, and executive function) see below. IDELA also includes a measure of children's approaches to learning, based on their persistence and engagement throughout the assessment. Both tools are administered via a combination of direct interview/observation and parental/caregiver response. The tools are positively correlated, although a recent study suggests that the IDELA tool more precisely identifies score variance based on gender, home learning environment, and parent-child interactions (Cordova & Agar 2015).

Table 1: Caregiver module

Measure	Description
Demographic information and membership verification	Parental educational attainment and income, household size and possessions, age, languages spoken at home, participation in First Read activities
Health and nutrition	Use of health and ECCD facilities, knowledge of causes and treatments of common childhood illnesses and immunization, breastfeeding and nutrition practices
Early childhood development knowledge and practices	Knowledge of developmental milestones, child rearing and discipline practices, presence of toys and books and knowledge of age appropriate play and reading materials
Quality of the home observation	Direct observation of the physical environment and caregiver/child interactions

Table 2: Child development measures

Measure	Description
<i>Early Childhood Care and Development (ECCD) Milestone Checklist</i>	
Gross motor skills	13 items. Example: “Hops 1-3 steps on preferred foot”
Fine motor skills	11 items. Example: “Draws circle purposefully”
Self-help skills	27 items. Example: “Washes and dries hands without any help.”
Receptive language skills	5 items. Example: “Follows one-step instructions that include simple prepositions”
Expressive language skills	8 items. Example: “Speaks in grammatically correct 2-3 word sentences.”
Cognitive skills	21 items. Example: “Arranges items according to size First Read smallest to biggest.”
Socio-emotional skills	24 items. Example: “Waits for turn.”
<i>International Development and Early Learning Assessment (IDELA)</i>	
Gross motor	1 items: hopping (1 sub-item)
Fine motor	2 items: drawing a person (8 sub-items), folding a paper (1 sub-item)
Emergent literacy	2 items: oral vocabulary (2 sub-items), oral comprehension (5 sub-items)
Emergent math	2 items: comparison by size and shape (4 sub-items), shape identification (5 sub-items),
Executive function	1 items: working memory (3 sub-items),
Socio-emotional	2 items: personal awareness (6 sub-items), sharing/social conflict (3 sub-items),
<i>Nutritional status</i>	
Height	(in centimeters)
Weight	(in kilograms)

Both modules were implemented by a team of trained enumerators during approximately four weeks of fieldwork. The caregiver survey takes about 30 minutes to implement, while the child development modules take up to one and a half hours. In some cases, to avoid fatigue, the tests were completed in two separate home visits.

3.2 Sample selection

The First Read evaluation sample includes families with children younger than 6 years old residing in barangays participating in First Read. Within each barangay, survey respondents were randomly selected from the master list of all eligible families to form the baseline sample of 583 child/caregiver pairs (this master list was established by First Read implementers and parent volunteers in collaboration with LGU).¹ Of these, 341 were reached at midline, and 264 at endline, representing a relatively high attrition rate of about 45% from baseline to endline. There are multiple reasons for sample attrition. In Luzon, many respondents were not located due to inconsistencies in their names and contact information collected at baseline. There was also a high incidence of migration within the First Read areas—many families interviewed at baseline and midline had relocated to other municipalities by endline. In addition, 10% of respondents at midline and at endline refused to respond or decided to pre-terminate the interview. Due to these limitations, the findings of this evaluation are not necessarily representative of the First Read impact area in Luzon and Mindanao.

The sample includes families who participated in some or all of the First Read activities (PES, Play Group, and PD w/Hearth) as well as families who have yet to be incorporated into First Read programming. Importantly, participation was not constant from midline to endline: of the 148 of respondents who did not participate in First Read at midline, 44 had joined by endline, and of the 121 who did participate at midline, 87 participated at endline, but 30 claimed they had *not ever* participated in First Read at endline (3 could not be found).²

Thus, this design allows for an exploration of the association between participation in First Read and caregiver and child outcomes. However, given that there is no clearly defined nor consistent distinction between participant and comparison groups, it is not possible to estimate the causal impact of First Read. In other words, we cannot rule out the possibility that any relationship between participation in First Read and ECCD outcomes is due to factors unrelated to First Read, such as caregivers' motivation or prior ECCD knowledge. Moreover, given the short duration of the First Read activities, by 2015/16 (endline) a full two years had passed since the families who

¹ Midline and endline samples followed the sampling frame established at baseline (2013), but unfortunately the baseline data is not available.

² In some cases this is probably due to the fact that someone besides the primary caregiver was interviewed at endline, so he/or she may not have known about First Read.

joined First Read in 2013 participated in PES, Play Group or PES with Hearth sessions. Thus, any short-term effects of these activities are likely impossible to observe at endline.

The endline analysis also includes qualitative data, collected from focus groups conducted with two groups: 9 with Parent Volunteers (e.g., First Read facilitators) and 9 with caregivers. One barangay for every First Read-covered city/municipality was selected for the focus group discussion. The caregiver group included a mix of First Read participants from years 1 to 3 to allow variation on length of project exposure. Active facilitators were invited to be part of the Parent Volunteer group.

IV. Analysis

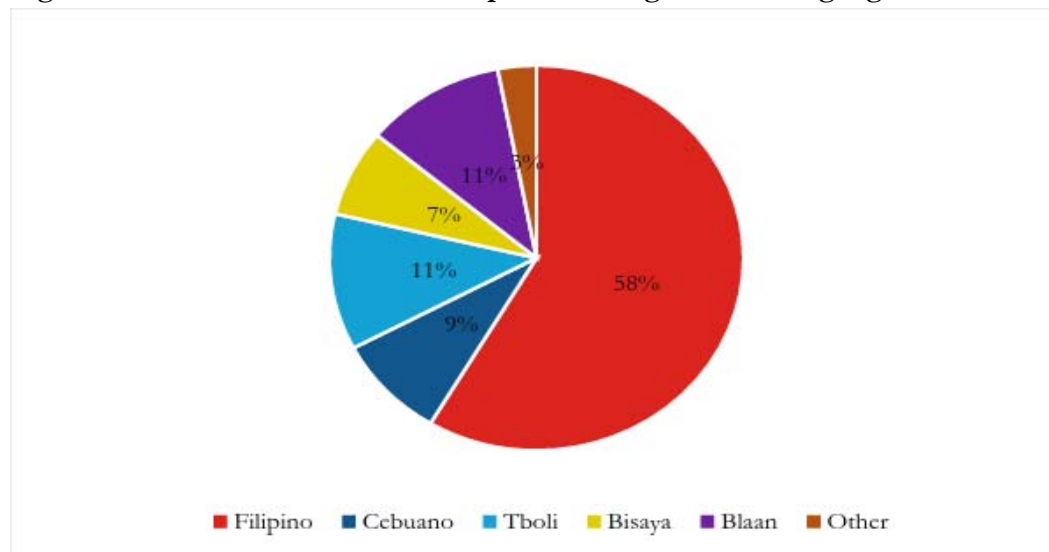
4.1 Sample description

Children’s average age at endline is 44 months (3.6 years), with a range of 28 months to 67 months. The sample is slightly more female (55%) than male, and primarily from Luzon –140 (61%) are from Luzon, versus and 90 (39%) from Mindanao.

84% of the primary caregivers are mothers, followed by grandparents (8%), fathers (3%) and aunts or uncles (2%).

Filipino is the primary language at spoken at home (see Figure 1), although about 36% of respondents speak at least two languages at home and 11% speak more than 3 languages. Home language is divided by area – respondents from Mindanao speak Filipino, and respondents from Luzon speak local languages other than Filipino.

Figure 1: Distribution of end line sample according to home language



Note: Data are from endline

Table 2 describes the educational and economic status of children’s parents. Slightly more than half of both mothers and fathers completed secondary school, while only about 1 in 4 completed higher education (including vocational training). Despite the fact that mothers and fathers have similar educational attainment levels, fathers are much more likely to have a job than mothers (93% versus 41%, respectively). This result is consistent with the national-level data where the Labor Force Participation Rate among males (48.9%) is higher than females (78.1%) (Philippines Commission on Women 2014).

Table 3: Parental education and employment characteristics

Father completed secondary education (%)	60%
Father completed higher education (%)	41%
Father has a job (%)	93%
Father's monthly income (pesos)	6,893.63 PHP
Father's monthly income (USD)	138 USD
Mother completed secondary education (%)	63%
Mother completed higher education (%)	39%
Mother has a job (%)	41%
Mother's monthly income (pesos)	6093.75 PHP
Mother's monthly income (USD)	122 USD
Household income (pesos)	8,695.50 PHP
Household income (USD)	173.91 USD

Note: Data are from endline

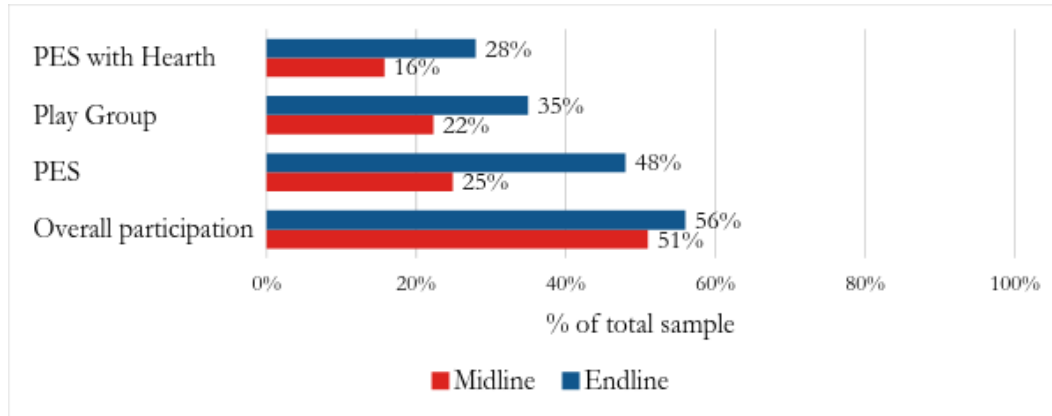
4.2 Participation in First Read

Overall, participation in First Read increased slightly from 51% at midline to 56% endline³. However, it is important to note that the responses for this section were based on respondents’ recollection. Since First Read only provides intervention to participants one time (those who benefited from the project in previous years will no longer be targeted for the succeeding implementation) the interval between baseline, midline and endline might have weakened respondents’ recollection regarding their participation in First Read.

As described in Section 2, First Read consists of three individual modalities: PES with Hearth, Play Group, and Parenting Sessions (PES). First Read families participated in one or any combination of these three activities. Figure 2 below displays participation rates at midline and endline in First Read overall and in the three First Read activities.

³ However, as mentioned, the evaluation sample is not necessarily representative of the total First Read impact area—the true percentage of families participating in First Read may be higher or lower.

Figure 2: Participation in First Read activities from midline to endline



At both midline and endline, a much greater percentage of respondents from Mindanao reported participating in First Read than from Luzon, as can be seen in Table 4 below, although participation did increase from midline to endline in both areas.

Table 4: Proportion of sample participating in First Read activities at midline and endline, by area

	Midline		Endline	
	Luzon	Mindanao	Luzon	Mindanao
Participated in First Read	40%	56%	45%	81%
Participated in PES	12%	45%	43%	61%
Participated in Play Group	12%	39%	27%	66%
Participated in PES Hearth	0%	42%	4%	51%

Qualitative data from the focus groups with parents indicate that one of the main reasons caregivers chose not to participate have to do with timing—caregivers who work found it hard to attend, and some caregivers found it hard to fit into their children’s school schedules. Another barrier is the attitude among some caregivers that programs like First Read should have some sort of material benefit. When asked why their neighbors did not attend, one respondent replied: *“They are asking if they will get something from that...Will we get money from that?”* This concern is not unique to the Philippines; public (free) programs often result in the expectation of a financial benefit, particularly if education-focused social programs are new to the community. Data from focus groups with Parent Volunteers echo these sentiment, *“I observed that they want to get something in return. Other than the knowledge they gained, they want something else,”* (Parent Volunteer, Malabon).

However, overall, the dedication and motivation of both Parent Volunteers and caregivers stand out. Even after First Read facilities were destroyed by the typhoon, for example, volunteers in Malabon found community spaces and private residences to hold the First Read sessions, and the sessions were well attended, even by parents and children from other communities who heard about the program through friends and relatives. At times, Parent Volunteers even used their own

resources to provide food during PES or Play Group sessions, “*Sometimes, even if there's no food, we buy bread ourselves. We just spend for it because we pity the mothers who stay for the sessions*” (Parent Volunteer).

Regarding implementation and participation, quantitative data from the endline survey indicate that in all three activities the number of sessions conducted and attended (according to caregivers’ self-reports) decreased substantially from midline to endline (see Figure 3). This could be related to the fact that in both Luzon and Mindanao only about half of the participants at midline were participants in 2015, the other half had completed the First Read sessions during the first three years of implementation (from 2012 to 2014), as can be seen in Figure 4, meaning that there may be a recall bias affecting endline data.

Figure 3: Participation in First Read sessions at midline and endline

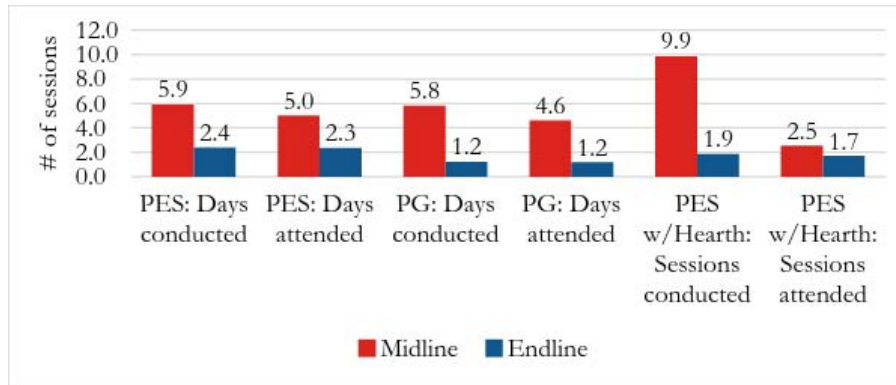
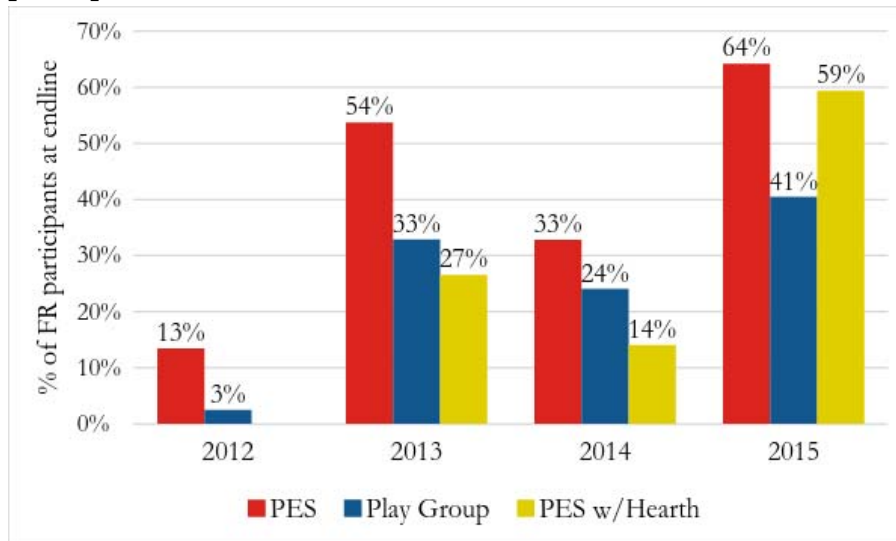


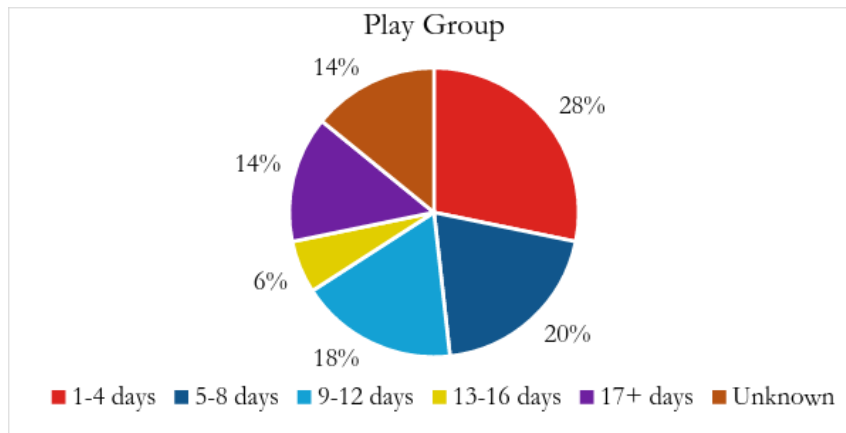
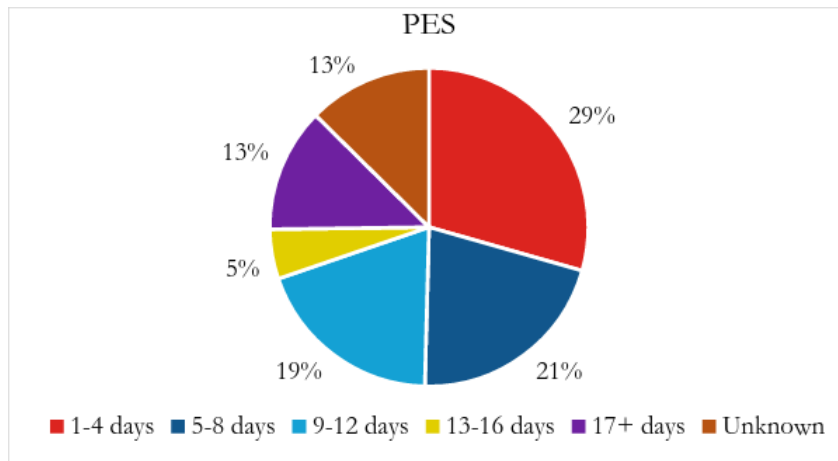
Figure 4: Distribution of First Read families at endline according to end date of participation

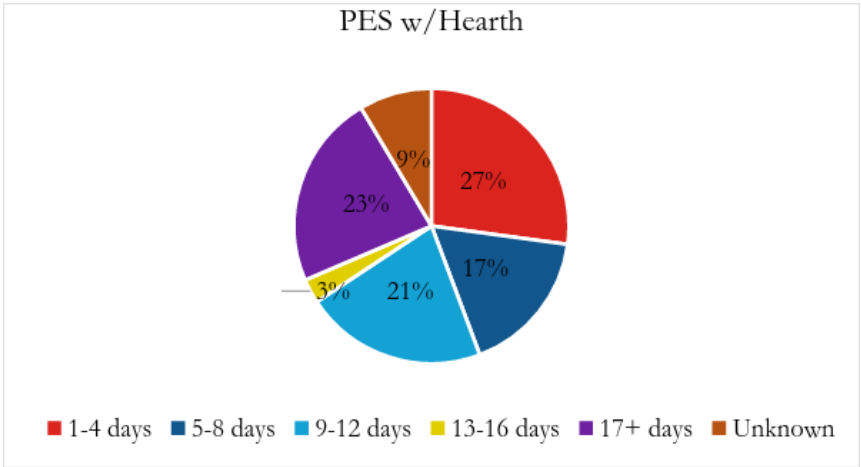


Moreover, among participants, the extent of engagement in First Read activities varied substantially, with around 30% of participants attending only 1 to 4 days of First Read

programming at endline and 14% to 20% attending at least 17 days (see Figure 5). Likewise, in focus group discussions Parent Volunteers mention delays in implementation stemming from the transfer of responsibility from Save the Children to local government partners.

Figure 5: Distribution of First Read participants at endline according to number of days attended

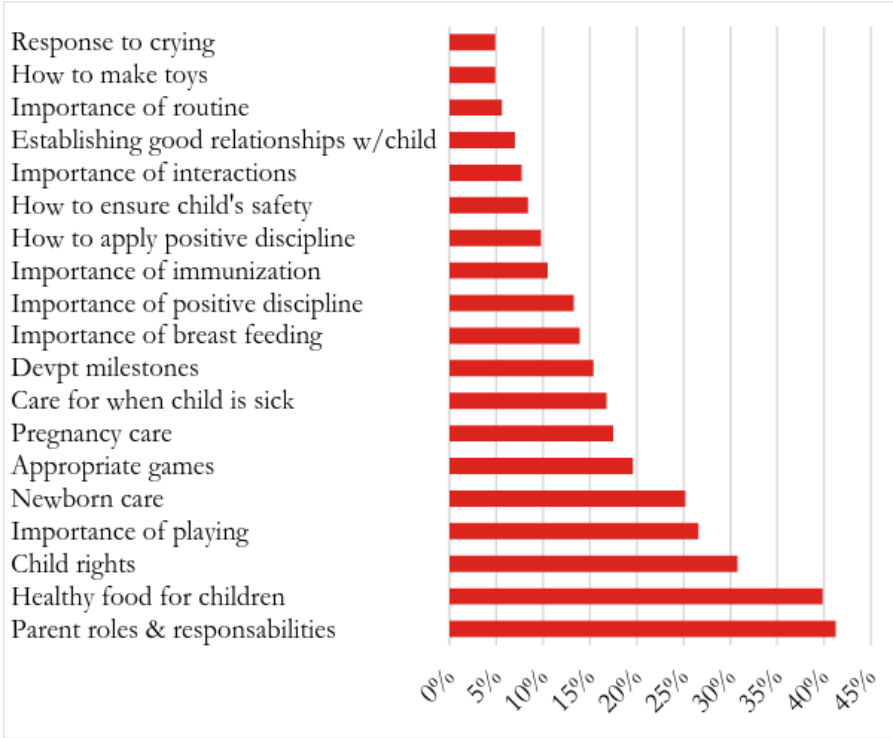




Note: Data presented include all three First Read activities: PES, Play Group, and PES w/Heath. Data are from endline.

In terms of the topics covered in First Read activities, the most common response was “parent roles and responsibilities” (41%) and “healthy food for children” (40%) and “child rights” (31%).

Figure 6: Topics covered in First Read activities, according to caregivers



Note: Data are from endline. Figure describes the non-prompted responses, in which respondents were asked to name the topics covered in First Read and enumerators marked off all mentioned activities.

As described in Section 3, participation in First Read was voluntary, although within each barangay the most vulnerable families were targeted by community health workers to join First Read

activities. Endline data suggest that these efforts succeeded – First Read parents have significantly lower income and educational attainment than the parents of children who do not participate in First Read. In addition, a comparison of means between participants and non-participants at endline suggest that female primary caregivers, and primary caregivers who are the child’s biological mother, are more likely to join First Read than primary caregivers who are male or who are not the child’s biological mother. Table 4 presents these differences.

Finally, although approximately 61% of the total sample is from Luzon, only about 46% of First Read participants are from Luzon. In other words, First Read participants are much more likely to be from Mindanao, despite the fact that the total sample distribution is skewed in the opposite direction.

Table 4: Differences between First Read participants and non-participants

	No First Read	First Read
Luzon	0.794	0.457***
Mindanao	0.206	0.543***
Child's age in months	43.72	45.01
Child is female	0.586	0.493
Number of children 0-4 in the household	1.821	1.437
Father has a job	0.882	0.969*
Father's monthly income	8633.1	5849.9**
Mother has a job	0.42	0.406
Mother's monthly income	6774.3	5512.8
Mother completed secondary education	0.756	0.500***
Father completed secondary education	0.744	0.444***
Household income	10827.8	7416.1*
Primary caregiver is female	0.571	0.915***
Primary caregiver is the mother	0.768	0.889*
Filipino is the home language	0.791	0.438***

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

4.3 Early Learning Opportunities

4.3.1 Pre-primary education

At midline, 43% of respondents report at least “visiting” daycare, and 13% reported at least “visiting” a neighborhood school. At endline, 58% of respondents report “visiting” a day care center and 32% (68) children go to school. The percentage attending school increases with age: 22% of two years old attend school, 50% of 4 year olds, and 100% of five year olds. Of those attending school at endline, 75% attend daycare, 3% attend preparatory, 9% attend Kinder 1, and 1% attends Kinder 2, (note: 10% did not respond). The average age children start attending school is 2.8 years old.

The primary reason caregivers do not send their young children to school is because they believe the child is too young (88%), 4% cannot afford pre-primary education, 3.5% say their child does not want to attend, 2% say the school is too far, and 1% do not want to send their child to school.

There are important differences in school participation between respondents in Luzon and Mindanao, and between First Read participants and non-participants, as described in Table 5.

However, an important clarification is necessary: Given that most of the First Read sample is located in Mindanao, the positive association between First Read participation and outcomes, and between Mindanao and outcomes, cannot be distinguished from each other. In other words, the line of causality is not clear—there could be external factors in Mindanao that explain the increased levels of school participation among First Read participants, who are primarily located in Mindanao. Conversely, the differences between Mindanao and Luzon may be due to First Read programming, which was concentrated in Mindanao.

Table 5: School participation, by area and First Read participation

	Luzon	Mindanao	No First Read	First Read
Child goes to school (%)	17%	57%***	20%	42%***
Age started school (years)	3	2.6***	2.9	2.8***

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

4.3.2 Quality of the home environment

Caregivers’ knowledge, attitudes and practices regarding play and discipline are used as a proxy of the quality of children’s home learning environments. On average, caregivers report playing with their children 2.5 hours per day. Overall, caregivers are aware of the benefits of play, as described in Table 6. However, more than half (incorrectly) believe that play “teaches children they should always win,” and very few (2%) correctly identified play as a form of socialization.

Table 6: Caregivers’ knowledge of the benefits of play

Playing is form of socialization	2%
Playing teaches competition	44%
Teaches child he/she should always win	54%
Teaches problem-solving	80%
Teaches discipline and self-control	85%
Teaches self-reliance	89%
Teaches social rules	92%
Increases awareness/understanding of environment	95%
Teaches how to manipulate/operate objects	96%
Teaches words and concepts	97%
Strengthens balance	98%

Note: Data are from endline. Responses are prompted, meaning the caregiver was asked whether or not he/she agrees with each item.

More than 95% of the sample agree that the following activities are forms of appropriate play for young children: “throwing/catching ball,” “playing with other children,” “playing using soft toys,” “singing and dancing,” and “drawing and coloring.” However, 26% said that “children should be forced to read and write.”

Nearly 100% of respondents report that the child owns each of the following types of toys: push/pull toys, mobiles, attribute toys, wooden toys, muscle-activity toys, stroller/walkers/tricycle, role playing toys, and toys designed to improve hand-eye coordination. Likewise, nearly 100% of respondents say that they play with their children in each the following ways: using commercial toys, playing games without toys, and using home-made toys.

Caregivers in Mindanao spend significantly fewer hours per day playing with their children than caregivers in Luzon (1.5 versus 3.2 hours), and caregivers from First Read are more familiar with the benefits of play than non-First Read families (see Table 7).

Table 7: Play practices and knowledge, by area and First Read Participation

	Luzon	Mindanao	No First Read	First Read
In a day how many hours to you play with child?	3.2	1.5***	2.6	2.4
Knowledge of benefits of play (% correct)	70%	70%	65%	72%*
Knowledge of appropriate forms of play (% correct)	54%	50%*	48%	51%

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

The caregiver survey also included a series of questions about the types of interactions that caregivers had with their children in the two weeks prior to data collection (Table 8). Encouragingly, caregivers’ reports of positive interactions are high across the board – 100% report talking or singing with their young child. However, negative forms of discipline, such as spanking and yelling, are also quite high – 78% report spanking their children, for example. However, First Read participants, as well as families in Mindanao, are less likely to report yelling at their children.

Table 8: Caregiver-child interactions, overall, by area and First Read participation

	Total	Luzon	Mindanao	No First Read	First Read
Talk or sing with child	100%	100%	100%	100%	100%
Feel frustrated with child	90%	88%	91%	87%	91%
Dance with child	95%	94%	95%	94%	95%
Read books to child	95%	94%	96%	92%	97%
Carry/cuddle child when he/she cried	95%	94%	96%	93%	96%
Massage infant/baby	83%	83%	83%	82%	84%
Eat together with child	100%	100%	100%	100%	100%
Feed child while talking/playing with child	80%	81%	79%	80%	80%
Take away privileges	55%	57%	53%	68%	47%**
Play with child using simple toys	98%	99%	98%	97%	99%
Play with child without toys	98%	99%	98%	98%	99%
Embrace/kiss/hug child	100%	100%	99%	100%	99%
Help child crawl/stand/walk	78%	79%	76%	82%	75%
Praise child	99%	99%	99%	100%	99%
Raise your voice/yell/scold child	75%	82%	62%***	86%	68%**
Spank child	78%	83%	69%*	83%	75%

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

Respondents overall support for negative discipline appears to have decreased from midline to endline, as exhibited in Table 9.

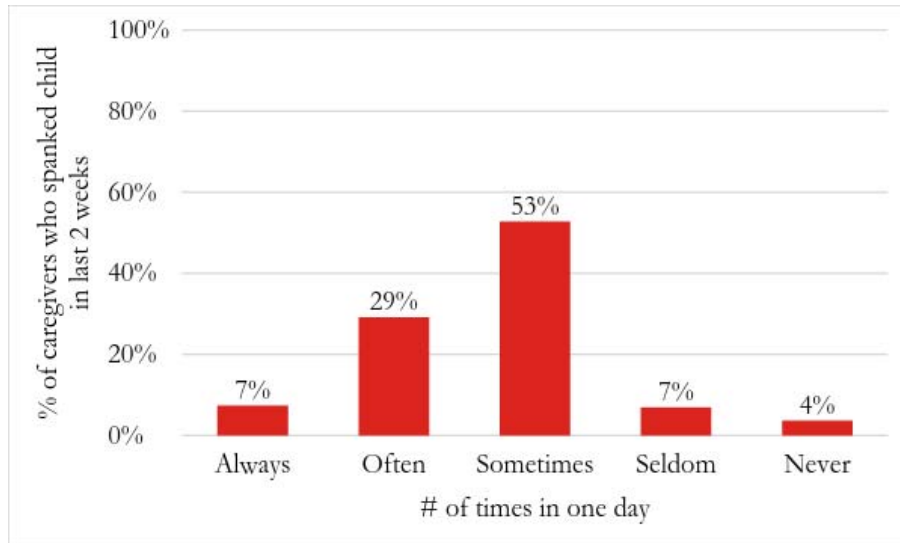
Table 9: Changes in attitudes towards discipline from midline to endline

	Midline	Endline
Most appropriate form of discipline is physical	8%	8%
I help my child if I criticize him/her	89%	59%***
My child should learn not to cry early on	70%	43%***

Note: Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

Of those who do spank their children, the majority report doing so “sometimes” (53%), as can be seen in Figure 7 below.

Figure 7: Frequency of spanking



Note: Data from endline

The only significant difference in attitudes towards discipline is between Luzon and Mindanao – 73% of caregivers agree that criticizing their child is a positive way to teach them, versus 9% in Luzon, as can be seen in Table 10.

Table 10: Attitudes towards discipline, by area and First Read Participation

	Luzon	Mindanao	No First Read	First Read
Most appropriate form of discipline is physical	9%	17%***	13%	9%
I help my child if I criticize him/her	91%	73%***	76%	84%
My child should learn not to cry early on	62%	60%	55%	62%

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

In addition to the caregiver questionnaire, survey enumerators also filled out an observational questionnaire at the end of the caregiver interview, modeled after the Home Inventory (Caldwell and Bradley, 2003). These questions are designed to objectively assess the quality of the cognitive and emotional support provided by a child’s family. For purposes of analysis, these 32 items are divided into three sub-scales: the physical environment (14 items) and two sub-scales of observed caregiver-child interactions.⁴

⁴ The first interactions sub-scale includes activities that it may or may not be possible to observe during a 1.5 hour household interview. For example, just because the enumerator does not observe the caregiver spanking the child during the course of the interview does not mean that the caregiver never spansks her or his child. The second interaction sub-scale more closely resembles Caldwell and Bradley’s Home instrument that has been shown to be a reliable and valid instrument in multiple international contexts. The items in

On average, households meet 71% of the physical environment factors included in the survey.

Table 11: Quality of the Physical Environment

No small objects scattered on the floor	78%
Electrical outlets and wiring are out of child's reach	69%
Electrical outlets are covered	44%
Heavy/sharp objects are out of child's reach	78%
Floors, walls, furniture's have no dangerous holes	81%
Stairs, windows and doors are neatly kept	74%
No visible toxic substances	79%
Mats and cardboards are placed where child can play	60%
Child is always within parent's visual range	93%
Child is not left by parent w/out supervision	92%
Diapers are changed when soiled	50%
Child is clothed with fitting and comfortable clothes	91%
Child is given clean toys/objects to play with	74%
HOME Physical Environment (total)	71%

Note: Data are from online.

Likewise, both sub-scales of observed parent-child interactions present an overall positive picture, as can be seen in Tables 12 and 13 below.

Table 12: Parent-child interactions (scale 1)

Parent did not shout at child	94%
Parent does not show extreme disgust /annoyance	96%
Child is not slapped/spanked	96%
Child is not teased, shouted, criticized	94%
Child and parent use respectful words while communicating with each other	86%
Child is calmed by parent when crying or having tantrums	64%
Parent calms child by giving child objects/toys to play with	64%
HOME Interactions Scale 1 (total)	85%

Note: Data are from online.

The second scale are things that can be directly observed during the interview, such as whether or not the caregiver talks to the child at least 2 times.

Table 13: Parent-child interactions (scale 2)

Parent talks to child at least 2x during visit	97%
Parent responds to needs of child	94%
Parents responds to child when child cries	62%
Child is praised by parent no less than 2x	79%
Voice of parents suggest positive feeling towards child	91%
Parent cuddles, embraces or kisses child more than 1x	70%
Parent smiles, tickles, sings to or claps at child	78%
Parent allows child to play, crawl, or walk	97%
Parent calls the child by his/her name or nickname	95%
Parent does not interfere or restrict child >3x during visit	92%
HOME Interactions Scale 2 (total)	85%

Note: Data are from endline.

Of note, caregivers' use of physical discipline and the quality of home interactions (both sub-scales) are significantly correlated: households with lower scores on the Home interactions scales are more likely to spank their children and to claim that the most important form of discipline is physical. There are no important differences in observed home quality between First Read participants and non-participants, but there is between Luzon and Mindanao – the quality of the home environment appears to be much higher in Mindanao. This is consistent with caregivers' greater support for positive forms of discipline in Mindanao, as well.

Table 14: Quality of the observed home environment, by area and First Read participation

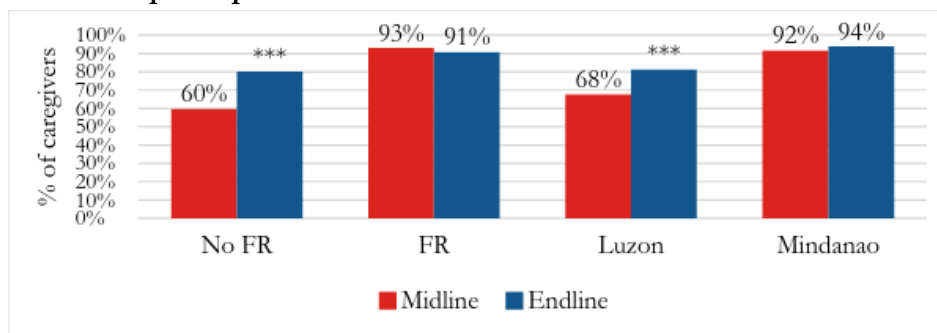
	Luzon	Mindanao	No First Read	First Read
HOME Physical Environment	69%	74%*	70%	71%
HOME Interactions	81%	91%***	83%	83%
HOME Observations	82%	90%**	83%	87%

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

4.3.3 Home literacy environment

A significantly higher percentage of First Read caregivers than non-First Read caregivers read to their children. However, the percentage of caregivers who read to their children increased substantially from midline to endline among non-First Read Participants. Of those who do read to their children, caregivers report spending about 50 minutes per day doing so on average (constant across groups).

Figure 8: Changes in the percent of caregivers who read to their children, by area and First Read participation



Note: Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

At endline, 52% of respondents (15% of non-participants and 73% of First Read participants) report receiving books from First Read. On average, 2.8 story books, 1.5 concept books, and 1.5 picture books, which makes sense considering that First Read distributed story books and concept books primarily. There is a significant difference between the percentage of respondents who received First Read books from Luzon (35%) and Mindanao (80%).

First Read is not the only source of reading inputs, however. 32% of respondents report buying books and 77% report borrowing books for their children. Appendix B presents additional information about caregivers' knowledge about books for children and book buying/borrowing practices.

Qualitative data provide some evidence of the changes in knowledge, attitudes and practices regarding child development and caregiving inspired by First Read. When asked to describe what they learned from First Read, focus groups respondents articulate the following:

- The understanding that children—especially young children—need to develop a strong bond with caregivers, which requires devoting time to children, listening to children, and playing with children, rather than letting them play by themselves.
 - “Before, the children are left on their own, now, when they ask, you have to answer,” (Caregiver, PES 2013).
 - “When she is in school, you have to guide her, teach her. During my time, parents just leave their children to study on their own. They won't teach you what to do” (Caregiver, PES 2014).
 - “Before, time for play was taken for granted. Now, we find time to play with the children” (Caregiver, PES 2013).
- To a somewhat lesser extent, the importance of reading with children, and the need for positive discipline.
 - “My child asks me to read books to him, but I am lazy to read. But now I know I should read to him,” (Caregiver, Play Group 2015).
 - “Before, when the child makes a petty mistake, I would shout at him/her. Now, I ask him/her what he/she did wrong,” (Caregiver, Play Group 2015).

Focus groups were only conducted with First Read participants, so it is hard to know how these perceptions might differ among caregivers who did not participate in First Read. Regardless, the fact that participants included in the focus groups are able to identify and discuss specific changes in their behavior resulting from First Read is encouraging.

4.4 Health and nutrition

A greater percentage of First Read participants and respondents from Mindanao use health services, especially Barangay Health Stations (BHS) /Barangay Health Center (BHC) and daycare centers. This is evident in the overall health practices, as well—First Read participants and respondents from Mindanao are more likely than non-participants and those from Luzon to have complete immunizations (see Tables 15 and 16 below).

Table 15: Use of health services, by area and First Read participation

	Overall	Luzon	Mindanao	No First Read	First Read
Did you consult BSH/SCK in last 3 months?	83%	76%	95%***	75%	88%*
<i>How many times?</i>	2.3	2.4	2.3	1.8	2.6**
Did you consult RHU/MHC/CHU in last 3 months?	25%	17%	39%**	17%	30%
<i>How many times?</i>	1.3	1.1	1.4	1.3	1.2
Did you go to the hospital in last 3 months?	32%	29%	37%	28%	34%
<i>How many times?</i>	1.9	2.4	1.1	2.1	1.8
Did you consult a faith healer in last 3 months?	41%	41%	43%	38%	43%
<i>How many times?</i>	1.9	1.7	2.4	1.8	2.1
Did you visit a day care center in last 3 months?	44%	25%	71%***	26%	53%**
<i>How many times?</i>	12.5	15.8	10.6	13.4	12.3
Did you go to an alternative day care center in last 3 months?	5%	3%	9%	3%	6%
<i>How many times?</i>	3.9	1.3	15.5*	2.5	4.7

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

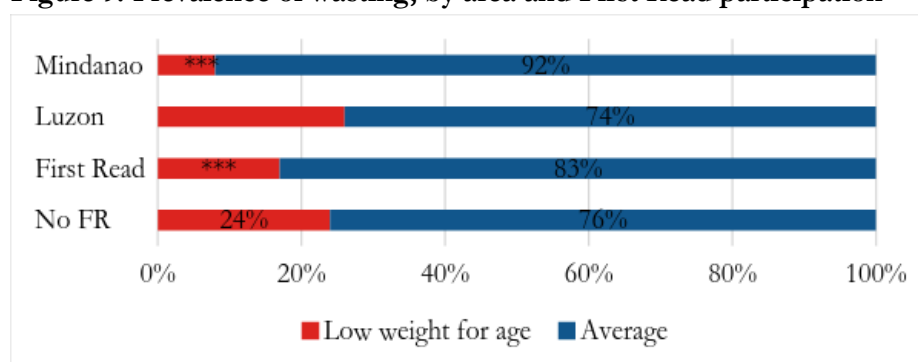
Table 16: Immunization and nutritional practices, overall, by area and First Read participation

	Overall	Luzon	Mindanao	No First Read	First Read
Complete immunization	85%	85%	96%*	76%	92%***
Months of exclusive breastfeeding	5.6	5.4	5.8	5.3	5.7
When should you feed child solid food?	6.2	6.0	6.5*	6.1	6.2

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

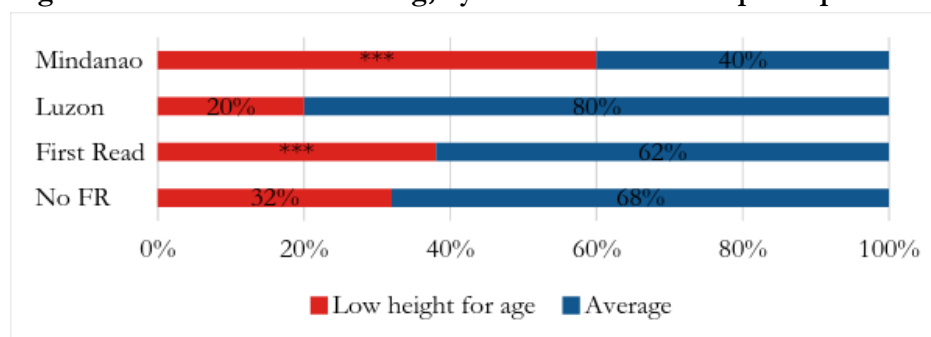
However, a different picture emerges from the analysis of children’s nutritional status⁵. Rates of acute malnutrition (wasting, defined as low weight for age) are significantly higher in Luzon than in Mindanao, and among Non-First Read participants. The opposite trend is true for chronic malnutrition (stunting, defined as low height for age)—the incidence of chronic malnutrition is significantly higher in Mindanao and among First Read participants (see Figures 9 and 10 below).

Figure 9: Prevalence of wasting, by area and First Read participation



Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

Figure 10: Prevalence of stunting, by area and First Read participation



Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

⁵ Nutritional status is based on World Health Organization (WHO) child growth standards calculated using height/length (centimeters), weight (kilograms), age in month and sex. Children older than 5 years old are excluded from this analysis, as the WHO guidelines only apply to children younger than 5.

The high prevalence of stunting among First Read participants likely reflects the fact that First Read targeting is based on need—community health workers recruited families with underweight or malnourished young children to participate in First Read activities (especially PES w/Hearth). The fact that wasting is more prevalent among respondents from Luzon suggests that this area may be experiencing an acute nutritional crisis among First Read participants, but again, it is important to emphasize that the First Read endline data are not representative of Luzon and Mindanao as a whole (national data do not provide any evidence that wasting is more prevalent in Luzon than Mindanao) (Save the Children 2015).

Regarding specific health and nutritional lessons from First Read, focus group respondents most frequently mention the need for complete immunization, proper hygiene (e.g., bathing and washing every day), sleep, and the importance of eating together as a family. A few caregivers mentioned that through First Read they learned to avoid junk food and ensure their children consume an adequate amount of fruits and vegetables. Several caregivers explain that traditional beliefs and practices remain prominent, mostly those related to hygiene. Some examples are the belief that “*children should not be bathed on Tuesdays because it will make them sick,*” and the belief that “*a mother should not take a bath within a month in order to avoid weaknesses brought about by childbirth.*”

4.5 Child development

This section describes child development outcomes based on the results of two assessment instruments: the ECCD Checklist and IDELA.

4.5.1 ECCD Checklist

The ECCD Checklist is used to assess whether children are achieving age-appropriate developmental milestones. At endline, the majority of children achieved age-appropriate development in all domains (gross motor, fine motor, self-help, receptive language, expressive language, cognitive and socio-emotional), although several domains stand out—namely, more than 20% of children are delayed in the self-help domain (compared to around 5% to 10% for the other domains), and about half of children achieve advanced development in the cognitive domain.

Table 17: Child developmental status (ECCD Checklist), overall, by area and First Read participation at endline

	Overall	Luzon	Mindanao	No First Read	First Read
Gross Motor Development					
Delayed	5%	4%	7%	4%	6%
Average	80%	79%	82%	79%	81%
Advanced	15%	18%	11%	17%	13%
Fine Motor Development					
Delayed	6%	6%	7%	4%	8%
Average	81%	85%	75%	84%	79%
Advanced	13%	10%	18%	12%	13%
Self Help					
Delayed	22%	22%	23%	22%	22%
Average	76%	76%	76%	75%	77%
Advanced	2%	2%	1%	3%	1%
Receptive Language					
Delayed	5%	5%	5%	6%	4%
Average	95%	95%	95%	94%	96%
Advanced	0%	0%	0%	0%	0%
Expressive Language					
Delayed	7%	10%	24%*	13%	3%**
Average	93%	90%	98%*	87%	97%**
Advanced	0%	0%	0%	0%	0%
Cognitive					
Delayed	3%	4%	2%	3%	3%
Average	46%	50%	40%	49%	44%
Advanced	51%	46%	58%	48%	53%
Socio-emotional					
Delayed	8%	10%	4%	7%	8%
Average	82%	81%	82%	90%	76%**
Advanced	11%	9%	15%	3%	16%**

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

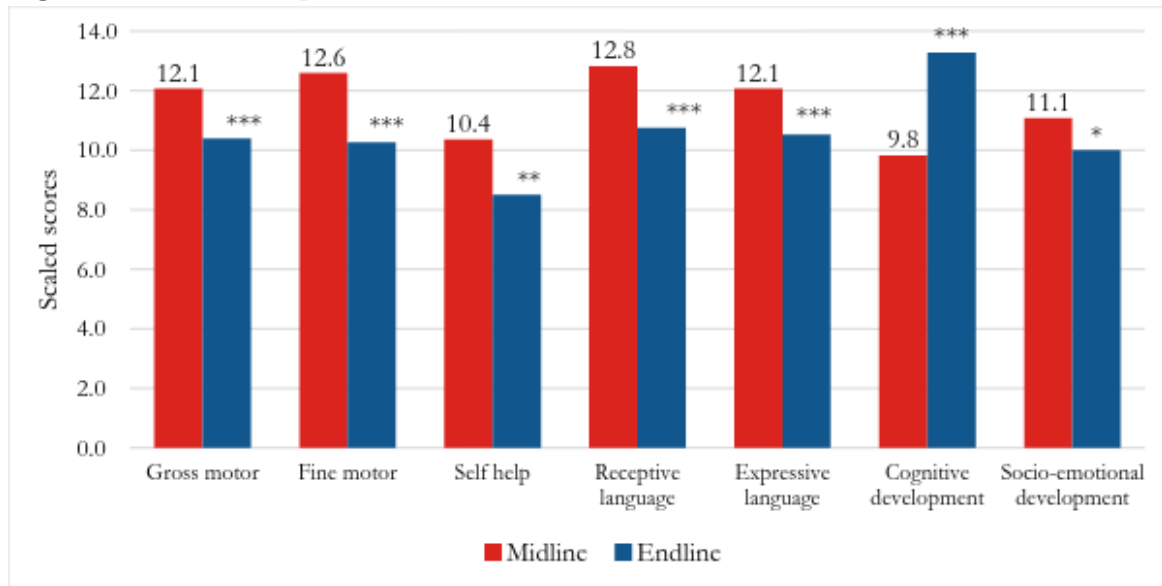
First Read children and children in Mindanao have higher levels of expressive language development, which is consistent with First Read's emphasis on early literacy.

Figure 11 compares average ECD scores at midline and endline for those children who have valid scores at both points, which is about 30% of the sample due to data entry/application errors at midline (only 150 children at midline could be matched to caregiver data). Average scores decreased across all domains except for cognitive development. However, given the reduced sample size, these trends are not necessarily representative of the total impact area.

It is important to emphasize that the negative trend in child development scores is by no means a negative impact of First Read. Rather, it is likely a reflection of the fact that child developmental delays become more pronounced (and easier to identify via tools like the ECCD Checklist) with age. Likewise, the study design does not allow for an impact estimate.

Moreover, it is also important to emphasize that First Read’s design primarily focuses on supporting the emergent literacy and numeracy of children through reading and playing. It does not provide direct intervention to support all the developmental domains as measured in the ECCD Checklist.

Figure 11: Child development at midline and endline



Note: Data displayed includes only those children with valid ECCD Checklist scores at midline and endline (Gross motor: N=72, Fine motor: N=66, Self-help: N=68; Receptive language: N=72, Expressive language: N=70, Cognitive development: N=67, Socio-emotional: N=51). Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

4.5.2 IDELA

The IDELA scores represent the number of activities for each domain that the child correctly achieves. Children in all groups perform highest in emergent numeracy, which corresponds to the relatively high levels of cognitive development found using the ECCD Checklist. However, children perform worst in emergent literacy—although there are statistically significant differences between groups. Namely, First Read participants achieve higher emergent literacy scores than non-participants. This is also the case for socio-emotional development and overall development.

Table 18: Child developmental status (IDELA), overall, by area and First Read participation

	Overall	Luzon	Mindanao	No First Read	First Read
Motor development (drawing a person, folding paper, hopping)	35%	35%	38%	31%	38%*
Emergent literacy (oral vocabulary, oral comprehension)	22%	22%	25%	19%	38%*
Emergent numeracy (comparison by size and length, shape identification)	61%	61%	66%	58%	64%
Socio-emotional (personal awareness, sharing/solving conflict,	38%	36%	44%**	32%	42%***
IDELA Score (overall development)	39%	38%	43%*	35%	42%**
Executive Function Score (working memory)	53%	51%	61%*	49%	56%
Approaches to Learning Score (persistence/interest/motivation)	38%	36%	44%*	35%	40%

Note: Data are from endline. Differences significant at $p < 0.05 = *$, $p < 0.01 = **$, $p < 0.001 = ***$

Again, it is encouraging to note that First Read participants score higher on emergent literacy, and future analyses in Phase 2 of First Read can explore the causal link between First Read, home literacy practices, and children’s emergent skills.

Focus group respondents were asked if they noticed any changes in their children’s behavior after applying what they learned in First Read. Most respondents mentioned that their children were more talkative and energetic— “*asking lots of questions,*” “*more alert,*” and more self-sufficient—able to take baths by themselves, for example, and “*talking like an adult.*” Without a baseline to compare these perceptions to, it is difficult to attribute these changes to First Read, but the fact that caregivers are able to articulate these changes suggests that caregivers have internalized First Read messaging surrounding early learning and child development.

4.6 Equity analysis

Multivariate regression analyses are used to examine the relationship between child development and early learning opportunities in the following dimensions of equity: sex, household size, mother’s education, home language, the quality of caregiver/child interactions, area of residence, and participation in First Read. Given the heterogeneous nature of First Read participation (see Section 4.2), the relationship between outcomes and First Read is explored using the number of First Read sessions (or days of First Read activities) that the caregiver attended at endline (equal to 0 for all non-participants).

Table 19 describes which factors are significant predictors of each developmental domain. A “+” indicates that the factor is positively associated with development, while “-” indicates a negative relationship. Only those that are statistically significant ($p < 0.05$) are shown (full results of the multivariate regression analyses can be found in Appendix D).

The following factors are consistently related to nutritional status and child development: sex, household size, mother’s education, home language, and area of residence⁶. The quality of parent/caregiver interactions (as measured by the Home observational scale) is also positively related to gross motor development, as is First Read participation.

Table 19: Predictors of children’s nutritional status and development

	Weight -for- age z- score	IDELA Overall Devpt	Gross Motor	Fine Motor	Self Help	Receptiv e Lang.	Expressiv e Language	Cognitiv e Devpt	Socio- emotiona l
Girls		-					-	-	-
Household size	-	-							
Household SES			-						
Mother's education	+	+						+	
Home language is Filipino		+		-	-			-	
Quality of caregiver/chil d interactions			+						
Luzon								-	
Number of First Read sessions attended			+						

Note: Child development data for individual domains are calculated using the ECCD Checklist. All models control for child’s age. Socio-economic status (SES) is measured as the number of household assets (TV, Internet, electricity, floor, etc.), standardized using the sample average. Mother’s education is equal to 1 if the mother completed at least secondary school, 0 if otherwise. The quality of caregiver/child interactions is a measure of observed interactions between caregivers and children (Home sub-scale 2).

Table 20 describes the factors that are significant predictors of the following early learning practices: school participation, the time caregivers spend playing and reading to their children, and the quality of caregiver/child interactions (HOME sub-scale 2). Here, the factors that stand out are sex, household size, mothers’ education, and area of residence.

⁶ Regression analyses do not include household income because doing so significantly reduces the sample size due to missing observations. Multivariate regressions including income (using the sample with complete observations) suggest that income is not significantly related with outcomes

Table 20: Predictors of early learning practices

	School participation	Hours spent playing with child/day	Minutes spent reading to child/day	Quality of caregiver/child interactions
Girls	-			
Household size		+	+	
Household SES				
Mother's education	+	+		
Quality of caregiver/child interactions				n/a
Luzon	-			
Number of First Read sessions attended				

Note: Data from endline. All models control for child's age. Socio-economic status (SES) is measured as the number of household assets (TV, Internet, electricity, floor, etc.), standardized using the sample average. Mother's education is equal to 1 if the mother completed at least secondary school, 0 if otherwise. The quality of caregiver/child interactions is a measure of observed interactions between caregivers and children (Home sub-scale 2).

VI. Results summary

Overall, First Read programming has been well targeted at families with a high need, particularly for nutritional support. Qualitative data indicate that the program has been well received, although participation has been uneven, with 50% of the participants attending 1-8 days of sessions, 24% attending 9-16 days and 13% attending more than 17 days. Quantitative and qualitative data on caregivers' attitudes, knowledge and practices suggest that caregivers have internalized the lessons of First Read regarding the importance of play, reading, and caregiver support for early learning and psychosocial development as reading and playing practices at home have increased.

Regarding health and nutrition, although caregivers seem to be aware of the importance of adequate hygiene, regular medical check-ups and mealtime routines, malnutrition levels are high among the sampled population. 53% of children younger than 5 years old are stunted and 23% are wasted. In Mindanao there is a higher prevalence of stunting, suggesting that malnutrition is a pressing concern from day zero (pregnancy), whereas in Luzon there is a higher prevalence of wasting—suggesting that there is an acute and relatively recent onset of nutritional deficiencies in Luzon (stunting indicates chronic malnutrition, while wasting indicates acute malnutrition). However, further research is needed to explore these patterns, as the First Read data are not statistically representative of the population of Mindanao and Luzon.

Regarding child development, children perform best in emergent numeracy and cognitive development domains, and worst in self-help and language/emergent literacy domains. There is therefore a clear need for continued early literacy programming. The data also demonstrate the

cumulative nature of developmental delays—children’s ECCD checklist scores decreased from midline to endline (for the sub-sample of children with scores at midline and endline).

Several important differences between First Read participants and non-participants stand out. Participants are almost twice as likely as non-participants to send their children to pre-school, kindergarten, or daycare. Likewise, First Read participants are more likely to have complete immunization and to have visited a health center in the last three months. First Read children also have higher emergent literacy and socio-emotional development skills than non-First Read children. However, in the absence of a comparison group and baseline data it is not possible to isolate the impact of First Read. Likewise, given that First Read participants in the endline sample are disproportionately located in Mindanao, the positive association between First Read participation and outcomes may be explained by external (unobservable) differences between Mindanao and Luzon, rather than to First Read participation. Conversely – the differences found between Luzon and Mindanao may be evidence of an impact of First Read – given the higher rates of First Read participation in Mindanao. A more balanced distribution of participants and non-participants between Luzon and Mindanao will be necessary to isolate the impact of First Read in subsequent phases.

Equity analyses demonstrate that there is a gender gap (favoring boys) and also according to geographic area in pre-primary school participation—being a girl and being from Luzon are both negatively associated with early education attendance. There is also a gender gap in childhood developmental outcomes (again, favoring boys), especially for language, cognitive and socio-emotional development.

VII. Program implications

As First Read move towards implementation for Phase 2, the above results will be considered as significant inputs into the design as well as strategies for implementation. Primarily, First Read should continue its work with parents and caregivers to build their capacity to provide appropriate care and support for their young children to enable them to grow and develop well. Health and nutrition sessions will be strengthened to address the seemingly chronic problem on malnutrition among young children. Furthermore, follow up sessions need to be conducted every year to reinforce key messages on parenting, literacy, health and nutrition.

On the other hand, results of child development assessment revealed that there is a need to strengthen the developmental activities with children at home and during playgroup sessions. Particularly, a revisit of the playgroup design should be conducted in terms of being able to address with more impact the different domains of child development. Phase 1 essentially is very much focused on emergent literacy and numeracy, and there were no other activities that targeted explicitly the other domains such as self-help, socio-emotional, etc. The activities of parents/caregivers at home should also be closely monitored to ensure that they are putting into practice what they learned from the parenting and playgroup sessions. Home visitations need to

be incorporated and peer-coaching and mentoring among parent-beneficiaries should be strengthened.

Lastly, there is a need to get more girl-children into the program, as indicated by the gender gap in pre-primary participation and child development outcomes. There is a need to strengthen the gender lens in the PES and playgroup modules, as well as in strategies employed in recruiting families and children to be enrolled in the program.

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Appendix A: Timeline of First Read activities

Activity	Luzon		Mindanao	
	<i>Modality</i>	<i>Timeline</i>	<i>Modality</i>	<i>Timeline</i>
Parenting Education Sessions (PES)	Parent Volunteers	<p><u>Description:</u> 10 sessions implemented in 4-5 meetings, each lasting 3-5 hours, over the course of 1 month.</p> <p><u>Duration:</u> October 2013 – January 2015</p>	Parent Volunteers	<p><u>Description:</u> 10 sessions implemented in 4-5 meetings, each lasting 3-5 hours, over the course of 1 month.</p> <p><u>Duration:</u> October 2013- January 2014</p>
	Local Government Unit	<p><u>Description:</u> Dependent on the implementation scheme of partner LGU or program.</p> <p><u>Duration:</u> April 2014 – January 2016</p>	Local Government Unit	<p><u>Description:</u> Dependent on the implementation scheme of partner LGU or program.</p> <p><u>Duration:</u> April 2014 – Jan 2016</p>
Play Group	Parent Volunteers	<p><u>Description:</u> 5 sessions implemented in</p>	Parent Volunteers	<p><u>Description:</u> 5 sessions implemented in 1-3 meetings, each lasting approx. 1.5 hours, over the course of 1-2 weeks.</p>
	Local Government Unit	<p>1-3 meetings, each lasting approx. 1.5 hours, over the course of 1-2 weeks.</p> <p><u>Duration:</u> October 2013 – January 2016</p>	Local Government Unit	<p><u>Duration:</u> October 2013 – January 2016</p>

PES with Hearth	<i>Modality</i>	<i>Timeline</i>	<i>Modality</i>	<i>Timeline</i>
	Parent Volunteers	N/A		Parent Volunteers
Local Government Unit	N/A		Local Government Unit	<p><u>Description:</u> The PES with parents and feeding of children runs for 12 consecutive days. However, children are monitored for their weight, height and Mid-Upper Arm Circumference (MUAC) for 24 days after participation in PES with Hearth.</p> <p><u>Duration:</u> March 2014 – January 2016</p>

Appendix B: Practices related to book buying and borrowing at endline

Table B1: Caregivers' knowledge of appropriate books for children

Big, simple, colorful pictures	98%
Uses idioms and flowery words	41%
Repetitive phrases	95%
Simple topics	94%
Characters with animals and objects	98%
Printed on thick paper	90%
Many and confusing pictures	90%
Short and easy to understand	100%

Table B2: Source of books for children

Did you buy any children's books this year?	32%
How many books did you buy?	3.8
Bookshop in community	11%
Bookshop in nearby town	16%
Library, school committee	0%
ECCD learning center	0%
Friends/relatives	0%
NGO	0%
Did you borrow any children's books since First Read started?	77%
How many books did you borrow?	3.0
Bookshop in community	0%
Bookshop in nearby town	0%
Library, school committee	3%
ECCD learning center	9%
Friends/relatives	8%
NGO	3%
Where did you borrow books - others	12%

Appendix C: IDELA Sub-test Scores

Table C1: IDELA Sub-test scores

	Mean	Min	Max	Count
% Personal Information Correct	0.46	0	1	245
% Size Questions Correct	0.80	0	1	245
% Shape Questions Correct	0.43	0	1	245
% Conflict Questions Correct	0.30	0	1	245
% Memory Questions Correct	0.53	0	1	245
% Vocab Expression Words	0.13	0	0.6	245
% Listening Comp Questions Correct	0.32	0	1	245
% Drawing Points	0.24	0	1	245
% Total Folding Score	0.39	0	1.75	245
% Total Hopping Score	0.41	0	1	245
% Persistence on tasks	0.25	0	0.5	245

Appendix D: Multivariate regression analyses

Table D1: Relationship between nutritional status and background characteristics

	Probability of wasting	Probability of stunting	Weight-for- length/age z- score	Height-for-age z-score
	Beta (standard error)	Beta (standard error)	Beta (standard error)	Beta (standard error)
Child's age (months)	-0.01	0.02	-0.02	0.01
	-0.02	-0.04	-0.01	-0.04
Child's sex (female)	0.27	-0.67	-0.53	0.43
	-0.38	-0.41	-0.44	-0.31
Household size	0.178***	-0.03	-0.12	0.07
	-0.05	-0.07	-0.07	-0.08
Socioeconomic status	0.691*	-0.28	-0.01	-0.29
	-0.27	-0.18	-0.18	-0.45
Mother's education	-0.02	-0.55	0.23	0.03
	-0.33	-0.50	-0.23	-0.60
Home language (Filipino)	-1.26	-1.37	2.68	0.46
	-1.36	-1.79	-2.89	-0.56
Area (Luzon)	2.21	-0.20	-3.87	1.88
	-1.51	-2.05	-2.85	-1.61
Number of First Read sessions attended	0.01	-0.01	0.00	0.00
	-0.03	-0.02	-0.02	-0.02
Constant	-3.432*	0.02	2.392*	-3.96
	-1.37	-2.07	-0.91	-1.99
N	177	181	177	181

Robust standard errors, clustered at the school level. Values shown are beta coefficients. Models 1 and 2 are logit regression models, and models 3 and 4 are OLS linear regression models. Socio-economic status (SES) is measured as the number of household assets (TV, Internet, electricity, floor, etc.), standardized using the sample average. Mother's education is equal to 1 if the mother completed at least secondary school, 0 if otherwise. All data is from endline, except for SES, which is from midline.

Table D2: Relationship between child development (IDELA) and background characteristics

	Overall development (IDELA)	Gross Motor	Fine Motor	Self Help	Receptive Language	Expressive Language	Cognitive Development	Socio-emotional
	Beta (standard error)	Beta (standard error)	Beta (standard error)	Beta (standard error)	Beta (standard error)	Beta (standard error)	Beta (standard error)	Beta (standard error)
Child's age (months)	0.013***	-0.036	-0.024	-0.248***	-0.035	-0.066	-0.106	-0.057*
	-0.002	-0.04	-0.034	-0.029	-0.021	-0.043	-0.06	-0.027
Sex (female)	-0.054***	-0.091	0.056	-0.219	-0.381	-0.600*	-1.287***	-1.379**
	-0.014	-0.213	-0.314	-0.462	-0.304	-0.247	-0.335	-0.37
Household size	-0.009*	-0.110*	-0.134	-0.124	-0.035	-0.113	-0.167	-0.092
	-0.004	-0.048	-0.09	-0.096	-0.06	-0.094	-0.101	-0.112
Socioeconomic status	0.001	0.107	-0.302	0.048	0.097	-0.017	0.152	-0.09
	-0.017	-0.147	-0.24	-0.218	-0.139	-0.172	-0.304	-0.326
Mother's education	0.061***	0.368	0.716	0.48	0.175	0.467	1.211*	0.496
	-0.015	-0.534	-0.397	-0.745	-0.228	-0.417	-0.525	-0.557
Home language (Filipino)	-0.004	1.805	-1.049*	-2.029**	1.259	1.081	2.532*	-0.924
	-0.148	-1.476	-0.504	-0.651	-1.5	-2.001	-1.209	-0.544
Quality of caregiver/child interactions	0.055	2.695*	1.545	-0.798	-0.475	-1.375	0.495	-0.093
	-0.069	-1.196	-1.369	-1.491	-1.073	-1.122	-2.004	-1.309
Area (Luzon)	-0.032	-1.627	1.097	1.304	-1.386	-1.879	-3.953**	-0.625
	-0.158	-1.796	-0.591	-1.215	-1.55	-1.974	-1.358	-0.698
Number of First Read sessions attended	0.001	0.041*	0.012	0.015	0.014	0.02	-0.024	-0.012

	-0.001	-0.016	-0.02	-0.02	-0.008	-0.01	-0.03	-0.019
Constant	-0.162	10.387***	10.724***	21.191***	13.485***	16.018***	19.630***	15.024***
	-0.132	-2.079	-2.431	-1.942	-1.647	-2.584	-3.643	-1.869
N	188	183	170	181	182	178	179	179

Robust standard errors, clustered at the school level. Values shown are beta coefficients. All models are OLS linear regression models. Socio-economic status (SES) is measured as the number of household assets (TV, Internet, electricity, floor, etc.), standardized using the sample average. Mother's education is equal to 1 if the mother completed at least secondary school, 0 if otherwise. The quality of caregiver/child interactions is a measure of observed interactions between caregivers and children (Home sub-scale 2). All data is from endline, except for SES, which is from midline.

Table D3: Relationship between early learning opportunities and background characteristics

	School participation	Hours spent playing/day	Minutes spent reading/day	Quality of caregiver-child interactions
	Beta (standard error)	Beta (standard error)	Beta (standard error)	Beta (standard error)
Child's age (months)	0.191***	0.00	-0.01	0.00
	-0.05	-0.03	-0.55	0.00
Child's sex (female)	-1.038*	-0.13	7.25	-0.01
	-0.47	-0.24	-8.22	-0.04
Household size	-0.18	0.196***	4.602**	0.00
	-0.10	-0.05	-1.60	-0.01
Socioeconomic status	0.06	0.15	-2.43	-0.01
	-0.21	-0.09	-2.39	-0.01
Mother's education	2.337**	0.760***	-9.05	0.03
	-0.71	-0.20	-5.05	-0.03
Home language (Filipino)	12.871***	-0.30	-6.14	0.19
	-1.03	-0.60	-12.16	-0.15
Quality of caregiver-child interactions	1.17	-1.09	-19.51	
	-0.98	-0.88	-17.52	
Area (Luzon)	-16.710***	0.93	8.84	-0.29
	-1.01	-0.57	-17.82	-0.17
Number of First Read sessions attended	0.02	0.01	0.00	0.00

	-0.04	-0.02	-0.29	0.00
Constant	-8.272***	1.30	37.24	0.950***
	-2.38	-1.31	-41.61	-0.12
N	172	138	158	188

Robust standard errors, clustered at the school level. Values shown are beta coefficients and effect sizes in standard deviations. All models are OLS linear regression models. Socio-economic status (SES) is measured as the number of household assets (TV, Internet, electricity, floor, etc.), standardized using the sample average. Mother's education is equal to 1 if the mother completed at least secondary school, 0 if otherwise. The quality of caregiver/child interactions is a measure of observed interactions between caregivers and children (Home sub-scale 2). All data is from endline, except for SES, which is from midline.