Report on baseline study to support

PLAN Cambodia's Integrated ECCD Projects in

Siem Reap, Tbong Khmum and Ratanakiri provinces

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Executive Summary

This report presents key findings from a baseline study designed to support monitoring and evaluation of Plan International (Cambodia's) integrated ECCD projects in Siem Reap (SR), Tbong Khmum (TK) and Ratanakiri (RK) provinces. The study was designed to provide an overview of the current situation in each province with regard to:

- Three to five year old children's developmental status (as measured by an adapted version of the East Asia Pacific Early Childhood Development Scales – EAP-ECDS, which incorporates seven domains: Cognitive Development, Socio-Emotional Development, Motor Development, Language and Emergent Literacy, Health, Hygiene and Safety, Cultural Knowledge and Participation, and Approaches to Learning);
- Health status of children aged 0-5 years, as measured by anthropometric surveys;
- Family environments of children aged 0-5 years, as measured through the PLAN Parental Knowledge, Attitudes and Practices (KAP) survey, which includes items on parental awareness of and habits related to the 12 Key Family Practices; parent perceptions of early stimulation and the importance of early childhood education, and parental self-efficacy / confidence;
- Community leaders' perceptions on the extent to which their communities can be seen to be child friendly, as measured by an adapted version of the Child Friendly Community Self-Assessment Tool;
- Preschool 'quality' (as measured by the Cambodia Early Childhood Education Environment rating scale for community preschools (CECEE) and preschool teachers' confidence levels (as measured by a teacher self-efficacy scale).

This study serves two key purposes: in Tbong Khmum and Ratanakiri, where Integrated ECCD programmes were first implemented towards the end of 2015, the data presented here (collected in January 2016) provides baseline information; in Siem Reap, where the programmes have been in place for a longer period of time (since 2011), the study provides post-intervention data. For each of the key areas outlined above, data was collected from two groups: an 'experimental group' (involving villages where ECCD projects are currently in place) and a 'control' group (involving villages where there is no ECCD intervention in place currently). The purpose of this approach is to provide evidence of impact, through comparison across these two groups.

Key findings are reported here for Early Child Development Status; Family Environment of 0-5 year olds, Village chief reports on Child-friendly Communities, and Preschool observations and Teacher Interviews separately, with a brief section on implications for development of an Outcomes Monitoring System.

Early Child Development Status

(Related to broad CSP Outcome 1 – Girls and boys, especially the most marginalised, grow up healthy and happy, and are ready for school).

In Ratanakiri (RK) and Tbong Khmum (TK), where Community Preschools (CPS), have only recently been established:

- Older children achieved higher scores than younger children on all domains of the adapted EAP-ECDS scale, indicating that the scale provides a useful measure of child development for the purposes of this project, as it is designed to measure developmental change.
- No differences across experimental and control groups were found for children in these two provinces. This is to be expected, as the CPS in RK and TK have not been operational long enough to have had any impact on experimental group children attending them.

In Siem Reap (SR) – where CPS have been operational for some time:

- As in the other two provinces, older children scored higher than younger children on all domains.
- Unlike the case in RK and TK, children in the experimental groups scored higher than children in the control group on all domains, indicating that CPS in this province are having a positive impact on children's developmental status. Again, this would be expected as these programmes have been operational for some time.

- Children aged 3-6 in locations where programmes have been in place for some time (ie. 'experimental' group) were found to be less likely to suffer from stunting than their counterparts in control groups within Siem Reap.

Across all provinces:

- Anthropometric surveys indicated 'high level' prevalence of stunting (chronic malnutrition), wasting (acute malnutrition) and underweight, as based on the cut-off points in the WHO classification of the severity of malnutrition. This prevalence reflects the existence of long term undernutrition and highlights the need to prioritize stunting prevention interventions.

Family Environment of 0-5 year olds

(Related to CSP Outcome 1.1 – Parents and caregivers provide positive stimulation and support to learning of children aged 0-5).

Findings from the KAP survey provide valuable insights into possible areas for greater focus, in terms of filling apparent 'gaps' in parental awareness / practices:

In terms of hygiene and sanitation, across the provinces no significant differences in parent awareness were found between experimental and control groups.

Across all provinces:

- Approximately 50% of parents report using pumped or well water; almost all parents surveyed believe that the water they use is clean and approximately one third believe that they can tell whether it is clean or not based on its appearance.
- Over 20% of parents in experimental groups across the three provinces say they 'never' treat their water.
- A maximum of 35% of parents (this figure was reported among parents in SR) in the experimental groups reported washing their hands before handling food.

*One finding of note, related to sanitation, is that a large number of participants report 'shame' and 'bad smell' as challenges associated with open defecation (whereas a much small number of parents saw environmental pollution as a problem). This finding could be drawn upon to inform programmes designed to result in behaviour change: if parents see shame and bad smell as challenges, it may be useful to capitalise on these in the development of messages designed to persuade parents about the importance of hygiene.

In terms of child health and nutrition

- Analysis of valid responses from mothers surveyed indicate that between 73 % (control group TK) and 98% (experimental group SR) of mothers breastfeed their young babies, with the highest percentage reported among experimental group parents in SR.
- Between 36 (RK control group) to 79% of parents across both experimental and control groups report having received information about breastfeeding, again with the highest percentage reported among experimental group parents in RK*.
- The most commonly reported childhood illnesses reported were 'fever' and 'diarrhoea' (suggesting that parent awareness messages, again, need to incorporate linkage between these two illnesses and hygiene practices to link into parental concerns).
- Large numbers of parents, across provinces and across groups, report that health centres are an important source of information about child health and of treatment for their children, including for vaccinations. However, large numbers of parents in RK also report that their children received vaccinations through 'outreach activities', indicating that the sources of support (and therefore most appropriate means of communicating health-related messages) may differ across provinces.

*A notable finding related to child health / nutrition and maternal health is that mothers in the RK experimental groups appear to have greater awareness and access to health-related support than mothers in any of the other groups across all provinces. This is somewhat

unexpected and further investigation is recommended, in terms of understanding what current interventions are taking place and what makes them so apparently effective.

In terms of maternal health

- Across all provinces and across experimental and control groups, between a low of 44% (RK – control group) and a high of 82% (RK – experimental group) of mothers reported having seen a health professional for antenatal care during their most recent pregnancy. Again, this figure is notably higher for mothers in the experimental group in RK than for mothers in any of the other groups, indicating effective interventions in RK.
- Mothers draw on different support sources in different provinces: for mothers in RK and SR, most were seen by midwives. For mothers in TK, the person most often see was a female nurse. Again, suggesting that health-related messages are delivered by different health professionals across different provinces.

In terms of parental awareness of the importance of early stimulation and parent-child interaction

- Across all provinces, parents in the experimental groups generally demonstrated stronger awareness about, and participation in, the importance of early stimulation than parents in control groups, particularly among parents in SR and TK experimental groups. This could suggest that if current interventions / parent awareness programmes related to early stimulation and child development are in place, they are having an impact (therefore, perhaps health-related messages regarding hygiene and sanitation could be more strongly incorporated into these programmes).
- Between 47 % (RK) and 60% (TK) of parents in experimental groups reported that they negotiate and communicate with their children as a form of discipline. However, large numbers of parents also report using physical punishment.
- Across experimental groups in all three provinces, over 90% of parents report that their child attends preschool, which is to be expected. Notably, 25% of parents in the experimental group in TK reported that their child does not attend preschool and 73% of these reported that this is because it is too far away.
- Whereas large numbers of parents in TK and SR reported that their child's preschools have a variety of toys, only a small number of RK report the same. This supports anecdotal reports from data collectors, who also reported that CPS in RK were not so well resourced.
- There is strong support for CPS among parents in experimental groups across all provinces with 80-90% of parents reporting that it is 'important' or 'very important'. Awareness of the importance of CPS has also, based on parents' responses, increased as a result of their children's attendance at CPS, indicating that parents can see the benefits of their children attending preschool.
- Parents in experimental groups across all three provinces appear to be (i) more involved in ECCE activities in the commune (ie. have been invited to attend a meeting to discuss issues related to ECCE) and (ii) more aware of 'appropriate' parenting practices, as measured by the KAP survey.
- Based on items related to parents confidence in their own knowledge and skills, parents in the experimental group in RK appear to be significantly more confident than parents in the control group in that province. No differences were found across groups in other provinces. This, again, is notable, given the greater awareness of child health and nutrition among parents in the experimental group in RK noted earlier.

Village Chief: Child-friendly Communities

(Related to CSP outcome 1.3 Commune Councils and village leaders provide support to early stimulation and quality learning outcomes for girls and boys aged 0-5).

No discernible patterns across experimental and control group communes were found in village chiefs' responses to this tool. One notable finding was the limited availability of health and social care reported by all village chiefs. Given that parents report health clinics as important sources of child-related health issues, there could be implications attached to this finding.

Preschool observations and Teacher interviews

(Related to CSP outcome 1.2 Community based pre-school (CPS) teachers and parent group leaders have the capacity and commitment to support early stimulation and quality learning outcomes for girls and boys aged 0-5).

While the CPS in all three provinces appear to have had a positive impact on child development and parent awareness, the observational data indicate that there is room for improvements to 'quality', as measured across the five areas (Space and furnishing; Language reasoning; Interaction; Programme structure, and Parents and staff) covered in the CECEE tool.

This finding is supported by data from teacher interviews, which suggest that teachers feel the need for further training and monitoring, are burdened by low financial incentives and in general do not seem to feel strongly supported by their communities. All teachers mentioned facilities; resources; confidence in managing and planning classes, and child attendance as challenges in their teaching.

In conclusion, there are key findings from the baseline study that provide evidence of positive impact where programmes are operating, as well as areas for future focus. These will be incorporated in development of the Outcomes Monitoring System to be developed for on-going use, as follow-up to the baseline study.

Introduction / Background

This report presents key findings from a baseline study designed to support monitoring and evaluation of Plan International (Cambodia's integrated ECCD projects in Siem Reap, Tbong Khmum and Ratanakiri provinces. The suite of integrated projects outlined in Plan Cambodia's ECCD intervention programme presents an ambitious, innovative approach to enhance early childhood learning and community environments by strengthening communities' capacity to provide coherent, effective and holistic supports (please see Appendix A for further information). There are two key discernible goals underpinning the ECCD projects, these being:

1. Building capacity within communities, involving partnership between Commune Councils; Ministry of Education District-and Province-level officials; health workers; parents and preschool teachers, and

2. Early stimulation and learning, Nutrition and WASH through parenting support programmes to promote early stimulation, health care, nutrition and sanitation; teacher training and capacity building to support enhanced quality in preschools.

The combination of these projects is designed to establish *integrated, effective and sustainable* approaches to supporting early childhood care and development in targeted communities for 0-6 year olds, through close collaboration with and capacity building of commune councils and key local stakeholders, including preschool teachers, parents, DoEYS, MoEYS, health workers and commune council members.

Research questions and methodology

This study serves multiple purposes: first, it provides a snapshot on the current status of ECCD in participating and control-group communities, with particular focus on four stakeholder groups targeted in the Integrated ECCD projects: parents; children; preschool teachers and village chiefs. This data will provide baseline data against which to monitor both process and outcome impacts of the ECCD projects. The second, related aim, is to provide a framework from which to develop on-going monitoring and evaluation mechanisms in the two provinces where Integrated ECCD projects have recently been introduced.

The third purpose of this study is to provide post-intervention data for programmes in Siem Reap, where Integrated ECCD projects have been in place for some time.

The fourth purpose, which is unique to this study, is to provide opportunities for programme staff working within Plan to gain research skills, in preparation for their future roles in monitoring and evaluation. The approach of involving programme staff in evaluation research has many benefits. However, there are also important implications for interpretation of findings, some of which are discussed in the Study Limitations section.

The questions developed for the purpose of this baseline study draw heavily on key results / objectives outlined in proposals submitted by Plan to funders of the Integrated ECCD projects:

1. ECCD services and training aiming at behaviour changes and empowerment of the community members have been provided / conducted;
2. Commune Councils (CC) can make informed choices on ECCD using the Child-Friendly Community Methodology;
3. Children aged 3-5 have improved access to preschool services;
4. Advocacy activities have been implemented at the national level in order to replicate the integrated ECCD approach outside the project area.*

**Outlined in Grant Application to the European Commission.*

1. The pre-school institutions set up by communes have created a long-term positive stimulating environment of high quality for all children aged 3-6 years;
2. The commune councils and the local department of the Ministry of Education have been strengthened to provide more effective support for teacher development and management of ECCD services;
3. The parent groups set up by the communes have ensured a positive long-term change in behaviour in terms of parenting to the benefit of the 0-3 age group.

**Outlined in 'Consolidation of care for young children by strengthening communes in Siem Reap province', Cambodia's proposal to DGD.*

Drawing on the objectives outlined above, the baseline study was guided by the following research questions:

1. What is the current status of children's health and well-being (reflected in anthropometric data)?
2. What is the current status of parents' perceptions in relation to the 12 key family practices to support young children's well-being and development, covered in training / parent support programmes (reflected in the KAP questionnaire)?
3. What is the current status of children's access to preschooling (reflected in KAP questionnaire & attendance rates)
4. What is the current status of quality of teaching and learning environments in preschools (reflected in results from the Cambodia Early Childhood Education Environment rating scale; teacher reports)?
5. What is the current status of parents' and teachers' sense of efficacy in delivering / supporting young children's all-round development (reflected in adapted items from Upstart Parents survey – parents; teacher self-efficacy reports
6. How 'child-friendly' are participating and control communities (as measured via the Child-friendly Communities measure)?

Methodology

Sampling framework and preparation

This study adopted a comparison group design, involving 'experimental' groups (children and parents from villages where the Integrated ECCD Programmes are in operation) and 'control' groups (children and parents from villages where there is no Programme currently) in Ratanakiri, Siem Reap, and Tbong Khmum, respectively. 'Control' groups were selected on the basis of there being no current Community Preschool available to children. This design, which facilitates measurement of impact by comparing outcomes across communities where Integrated ECCD projects are in operation against communities where there are no projects, could support future pre-test / post-test comparisons if required.

The sampling framework was determined on the basis of multiple considerations, including logistical needs and requirements (i.e. timing and availability of data collectors and skills required). In each province, we randomly selected (i) 10% of the total number of villages where Integrated ECCD programmes are currently in place and (ii) the same number where there are no programme currently in place for inclusion in experimental and control groups, respectively. That is, 4 villages in Ratanakiri (2 villages with ECCD, and 2 villages without ECCD), 6 villages in Tbong Khmum (3 villages with ECCD, and 3 villages without ECCD), and 16 villages in Siem Reap (8 villages with ECCD and 8 village without ECCD) were randomly selected to participate in this study. In each village in Ratanakiri and Tbong Khmum, we randomly selected 5 children for each age group (age 0 to 5) for participation. Due to the considerably higher number of villages to be recruited in Siem Reap, as well as limitations in available researcher resources, we randomly selected 3 children for each age group from each village in this province. Hence, we aimed to recruit a total of 588 children aged 0 to 5 (and/or their parents) in this study. With a set minimum detectable effect size of .25, this sample size can achieve a power of .98 with an alpha of .01

In view of the large quantity of baseline data required for this study (information from a range of key stakeholders, as well as observational ratings of preschool quality and health-related data were required), and the substantial demands on programme staff

involved in data collection, this study adopted a primarily quantitative, structured approach to data collection, utilising structured interviews. Basic qualitative data was collected where practicable (for example, the teacher interview schedule included open-ended questions concerning challenges to teaching and learning that teachers are experiencing). In addition, in order to capture qualitative information on the contexts (villages and communes) in which data collection was taking place, data collectors were encouraged to complete 'researcher reflections'. A Researcher Reflective Log tool developed for this study provided guidance to data collectors in making notes on the physical environment encountered, interactions between key stakeholder (if observable), the strength of relationships between villagers, and reflections on the data collection process / use of tools. While some data collectors completed these tools, providing valuable insights into the villages visited and process of data collection, others were unable to do so due to time constraints and (possibly) reluctance to report.

All parent and teacher data was collected via structured interviews rather than self-report measures. Due to challenges associated with literacy and unfamiliarity with completing forms, self-report methods were considered inappropriate. Further detail on research tools is presented below. A team of data collectors, consisting of PLAN Cambodia field staff and province-based coordinators and staff from the local NGO's supporting implementation of the Integrated ECCD Programmes, were prepared for data collection during a five-day training workshop. Training on the objectives of the baseline study, purposes of monitoring and evaluation and use of data collection tools was provided during the workshop. The training included techniques of anthropometric measurement; implementation of the early childhood assessment tool; interview techniques, and sessions on ethical conduct in data collection. A nutrition survey consultant led the training for use of instruments to collect anthropometric data and participated in initial supervision of data collection.

Following the workshop, all tools were trialled during a 'pilot' session at a local preschool, which was followed by team discussions on the use of tools and revision of items prior to data collection in the provinces. All teams were accompanied by members of the research design and training team during the initial phases of data collection in each province.

Participants / Tools

Early Childhood Development

We developed child assessment items based on the short-form East Asia-Pacific Child Development Scales (EAP-ECDS). A total of 33 items tapping children's development in seven different domains, i.e., Cognitive Development, Socio-Emotional Development, Motor Development, Language and Emergent Literacy, Health, Hygiene and Safety, Cultural Knowledge and Participation, and Approaches to Learning. All items were administered to children with a fixed sequence in individual assessment sessions. The EAP-ECDS tool is designed to provide a global, holistic measure of children's development. Although it measures domains that are often incorporated into preschool curricula, it is not designed as a curriculum assessment tool, but rather as a measure of children's overall development. This means that it can reflect the impact of various factors on children's development, ranging from parental awareness, to availability of child friendly services and access to learning resources.

During training, data collectors were reminded that the child assessment tool is not designed as a measure of achievement, but as a tool for tracking children's development, emphasising that accurate reporting is key for effective use of the tool. Whilst a recommendation was made for staff working in specific provinces to be assigned to data collection in another province in order to maximise impartiality, logistical constraints raised by programme staff prevented this from happening. Assessments were administered among children aged 3 to 5 only, as children aged below 3 years do not generally attend any form of preschooling. A total of 281 children aged 3 to 5 participated in child assessments. Fifteen children were removed from the analyses due to lack of completion of at least one domain of the child assessment tasks. Three 2-year-olds also participated in the child assessment tasks and were removed from the analyses. As a result, the following analyses are focused on the remaining 263 children (M_{age} = 3.98, SD_{age} = 0.80) who had complete data for at least one domain of the scale. Detailed information for the 263 children can be found in Table 1.

Table 1 Sample distribution of children included in the analyses related to child development

		Ratanakiri		Siem Reap		Tbong Khmum	
		Experimental Group	Control Group	Experimental Group	Control Group	Experimental Group	Control Group
3	Males	1	1	8	8	6	5

years old	Females	5	3	17	17	8	9
4 years old	Males	5	2	7	9	4	6
	Females	8	2	18	17	7	7
5 years old	Males	2	6	9	6	7	6
	Females	3	2	11	14	9	8
Total		24	16	70	71	41	41

Anthropometric data

Key anthropometric information for children under five years was collected, including weight of the child using Uniscale; head circumference using cloth tabs measurements; length for children aged under two years, and height for children over two years. The anthropometric survey form, completed by trained field data collectors, was attached to the main study tool (KAP survey tool) to record all measurements. The form was developed in Khmer language for field data collectors. The questionnaire included date of birth of participants, confirmation of date verification document (yellow card), weight, height, and head circumference.

Family Environment of Children Aged 0-5

Parent Knowledge, Attitudes and Practices (KAP) Survey. Data on parents' knowledge, attitudes and practices related to (i) the 12 Key Family Practices outlined by the World Health Organisation (WHO); (ii) aspects of maternal and child health collected for the Cambodia Demographic and Health Survey, and (iii) parents' attitudes towards early stimulation and early childhood education, were collected using a structured interview tool that was developed as part of a previous baseline study commissioned by PLAN Cambodia. In addition, items adapted from the Upstart Parent Survey, a validated tool designed to evaluate impact of parenting programmes (Benzies, Clarke, Barker & Mychasiuk, 2013) were included, as a measure of parents' self-efficacy / confidence. The original KAP Survey was available in Khmer. Items from the Upstart Parent Survey were translated into Khmer by an expert in education. Back translation was carried out in consultation with the data collection team.

The KAP survey is divided into six modules (Respondent & household characteristics; Knowledge and practice of key family practices; Knowledge and practice of early simulation and protection for children under the age of 6; Attitudes towards and perceptions of ECCD / ECE and key family practices; Access to and quality of ECCD / ECE services and household involvement, and Parenting knowledge and skills), with 'Practices' measured through questions that ask respondents about their daily habits (for example, 'Do you use soap to wash your hands'?) .

Guided by the sampling plan, we recruited 572 parents for the parent Knowledge, Attitudes and Practices (KAP) survey. The KAP survey is designed primarily for mothers, as it includes a range of questions related to breastfeeding practices. For the purposes of this baseline study, a decision was made by the data collection team NOT to impose pre-requisites on participation (i.e. not to restrict data collection to mothers), partially in order to obtain some idea of who may be acting as 'primary caregivers' for children participation in the study. While the majority of participants are mothers, worth noting is the large number of 'non mothers' who completed the survey, particularly in Siem Reap (almost 20%) and Tbong Khmum (up to 22%). This is of interest for several reasons. First, it indicates that children in these provinces are receiving care from a number of family members and that parenting groups may need to account for this diversity. For the purposes of analysis, it is important to note that the large number of 'non mother' participants may have 'skewed' findings, particularly those related to knowledge on child birth and early nutrition practices.

The mean ages of parents who completed the survey in each of the provinces were: 28.75 (ranged from 17 to 55) in Ratanakiri; 32.39 (ranged from 18 to 81) in Siem Reap, and 33.20 (ranged from 16 to 72) in Tbong Khmum. Information on the participants can be found in Table 2.

Table 2 Information on the interviewees in the KAP survey

	Ratanakiri(n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control

	%	%	%	%	%	%
Reporter's relation with the child						
Mother	98.2	100.0	82.5	81.0	77.5	86.4
Father	1.8		7.0	4.0	5.6	5.1
Grandmother			8.4	11.5	14.6	1.7
Grandfather			0.7	1.7	1.1	1.7
Sibling			0.7	1.7	1.1	5.1
Ethnic background						
Khmer	1.8		100.0	100.0	67.4	100.0
Kreoung		42.3				
Prou	50.9					
Charay		57.7				
Tompoun						
Kachok	47.3					
Kaveat						
Laos						
Muslim					32.6	
Child's age						
0-1	20.0	5.8	15.4	5.7	16.9	11.9
1-2	10.9	21.2	16.1	19.0	16.9	11.9
2-3	20.0	17.3	18.2	21.3	16.9	16.9
3-4	12.7	15.4	16.1	19.5	15.7	16.9
4-5	23.6	21.2	18.9	15.5	16.9	22.0
5-6	12.7	19.2	14.7	19.0	16.9	20.3
Parents' highest qualification						
Primary school	32.7	11.5	52.4	55.7	75.3	66.1
Secondary school	1.8		8.4	14.4	11.2	18.6
High school			3.5		3.4	3.4
Illiteracy	65.5	86.5	35.9	29.9	10.1	11.9

Village Chief Interview Protocol

Village Chiefs were interviewed using an adapted version of the Child Friendly Community Self-Assessment Tool, which collects information on service providers' perceptions of the extent to which communities are child-friendly. The original tool was designed by the Childwatch International Research Network for international use and is downloadable from http://www.childwatch.uio.no/projects/activities/child-friendly-cities-and-communities-research-project/finaltoolkit2011.html. Items were translated into Khmer by an expert in education and translation was carried out in consultation with the data collection team.

The number of village chiefs interviewed in this study in Ratanakiri, Siem Reap, and Tbong Khmum were 3, 15, and 6, respectively, reflecting the number of villages included in this study and the sampling strategy applied. Table 3 shows the number of villages included in the experimental and control groups in each province.

Table 3 Number of villages in the experimental and control group in each province

Province	Number of Villages in the Experimental Group	Number of Villages in the Control Group
Ratanakiri	2	1
Siem Reap	9	7
Tbong Khmum	3	3

Preschool Observations

Cambodia Early Childhood Education Environment rating scale for community preschools (CECEE): The CECEE for community preschools is an observation tool currently used by government for monitoring and evaluation of community preschools in Cambodia. The tool was used in this study to assess community preschool 'quality' (as defined by items included in this tool), with observations carried out by data collectors during visits to the CPS. The number of preschools observed in Ratanakiri, Siem Reap, and Tbong Khmum was 2, 9, and 3, respectively, reflecting the number of villages included where Community Preschools (CPS) are currently operating.

Teacher Interviews

Teachers were interviewed using a version of the short form Teachers' Sense of Efficacy Scale, developed by Tschannen-Moran & Woolfolk Hoy (2001). Items were adapted to reflect early childhood teaching and learning environments. Items were translated into Khmer by en expert in education and back-translation was carried out in consultation with the data collection team. Teacher interviews also included three additional open-ended questions on successes and challenges, as well as suggestions for improving early childhood education settings.

The number of preschool teachers interviewed in Ratanakiri, Siem Reap, and Tbong Khmum was 2, 9, and 3, respectively. One preschool teacher from each participating CPS in each province was included in the study. Detailed background information on the participating teachers is presented in Table 4.

Table 4 Background information of the teachers interviewed in three provinces

Province	# of teachers interviewed (male)	Ethnicity	Highest Qualifications	Received ECE training
Ratanakiri	2 (0)	1 Kachak 1 Prov	Both were graduates of primary school	Both received.
Siem Reap	9 (4)	All Khmer	3 primary school 4 secondary school 2 high school	8 received
Tbong Khmum	3 (0)	3 Khmer 1 Muslim	1 primary school 2 secondary school	All received

Ethical considerations and child protection

The protocols, questionnaires, participant informed consent forms, and other requested documents, along with any subsequent modifications, were reviewed and approved by the National Ethics Committee for Health Research (NECHR – Ref number 029NECHR / 25/01/2016) in Cambodia. Official consent was gained from all participants, with adult consent gained for child participants. All participants were reminded that taking part in this study was voluntary. In addition, participants were given the opportunity to refuse to answer or discontinue their participation at any time for any reason without any consequences.

During the data collection workshop, a dedicated session on ethical practice in research and data collection was conducted. Data collectors were reminded of their distinct roles as (i) programme staff and (ii) researchers, with emphasis on the importance of confidentiality, impartiality and recognizing the authority of research participants in recording data.

Completed tools were collected by Plan provincial officers in each of the three provinces, and returned to the coordinating researcher of the project, based in Phnom Penh for secure storage.

Analysis and Results

Early Child Development

Relates to the following CSP outcome 1 - Girls and boys, especially the most marginalised, grow up healthy and happy, and are ready for school.

The percentage of missing values for child data is high in all three provinces. This means that there are many gaps in answers provided by children who participated in the research. This might be due to the fact that the majority of children in the baseline study did not have experience of preschool learning contexts (in Tbong Khmum and Ratanakiri, some even in experimental groups had not yet attended CPS as the CPS were newly established). This unfamiliarity with the school-like assessment tasks that are used in the EAP-ECDS, as well as little experience of interacting with unfamiliar adults, is likely to have influenced children's participation. In **Ratanakiri**, only around 60% of the variables have data from all participants and only 20% of the participants completed all items in the child assessment. The related percentages for **Siem Reap** are 21% and 43.26%, respectively. In **Tbong Khmum**, around 28% of the variables have data from all participants and only 55% of the participants completed all items in the child assessment. Multiple imputation process was adopted to impute the missing data. The datasets were imputed five times and the mean of the estimates was calculated and reported.

Seven 3 (Age) X 2 (Gender) X 2 (Group) ANOVAs were conducted with children's scores in each domain as dependent variables for the three provinces of Ratanakiri, Siem Reap, and Tbong Khmum, respectively. Analysis of Variance (ANOVA) is a statistical test that can measure differences across groups involved in data collection (in this case the different groups included children of different ages, different genders, as well as differences across the 'experimental' and 'control' groups).

For **Ratanakiri**, significant age effects (ie. significant differences in children's performance across age groups) were found in domains of Cognitive Development, Language and Emergent Literacy, Health, Hygiene, and Safety, and Approaches to Learning, as older children performed significantly better than younger children in these domains. This is to be expected, as the EAP-ECDS is designed to measure age differences in performance on the test, therefore older children are expected to be able to achieve higher results. No other significant effects were found, indicating that children performed equally whether they had attended CPS or not, which is unsurprising given the short amount of time (less than 2 months) that CPS had been in operation in this province at the time of data collection.

For **Siem Reap**, the group effects (ie. differences across 'experimental' and 'control' groups) were consistently found in all domains, indicating children who had attended CPS and therefore had ECE experience had a significantly better performance in all the seven domains than those who had not attended CPS. The significant age effects were also detected in all domains except Socio-Emotional Development, as older children performed significantly better than younger children. A significant gender effect was found in the domain of Approaches to Learning, as females performed significantly better than males. This finding reflects evidence that developmentally, girls generally may benefit from advanced social and cognitive skills during the early years (Diprete & Jennings 2012).

For **Tbong Khmum,** as in Ratanakiri, the ANOVAs yielded significant age effects for all domains as older children outperformed younger ones in all the seven domains. However, no differences were found across 'experimental' and 'control' groups. The results of ANOVAs with imputed data can be found in Table 5. Significant statistical differences between groups are denoted by asterisks (***) beside the data.

Table 5 Age, Gender and Group differences in child development

	Age		Gender		Group	
Ratanakiri	F (2, 30)	η_p^2	F (1, 30)	η_p^2	F (1, 30)	η_p^2
Cognitive Development	3.34	0.19**	0.13	0.01	0.39	0.01
Socio-Emotional Development	2.51	0.15	0.18	0.00	2.85	0.09
Motor Development	0.78	0.05	0.01	0.00	0.90	0.03

Language and Emergent Literacy	4.78	0.25**	0.42	0.02	0.03	0.00
Health, Hygiene, and Safety	4.00	0.22**	0.23	0.00	0.01	0.00
Cultural Knowledge and Participation	2.17	0.13	0.68	0.02	1.13	0.04
Approaches To Learning	5.73	0.29***	1.88	0.06	0.37	0.01
Siem Reap	*F* (2, 129)	η_p^2	*F* (1, 129)	η_p^2	*F* (1, 129)	η_p^2
Cognitive Development	10.9014	0.14***	2.55	0.02	31.87	0.20***
Socio-Emotional Development	2.9282	0.04	0.25	0.00	30.34	0.19***
Motor Development	5.9946	0.09***	0.15	0.00	18.85	0.13***
Language and Emergent Literacy	7.7916	0.11***	3.17	0.02	57.85	0.31***
Health, Hygiene, and Safety	6.0978	0.09***	0.06	0.00	16.86	0.12***
Cultural Knowledge and Participation	3.2434	0.05**	1.05	0.01	69.62	0.35***
Approaches To Learning	5.4582	0.08***	9.10	0.07***	23.46	0.15***
Tbong Khmum	*F* (2, 70)	η_p^2	*F* (1, 70)	η_p^2	*F* (1, 70)	η_p^2
Cognitive Development	38.55	0.52***	0.28	0.00	2.61	0.04
Socio-Emotional Development	13.75	0.28**	0.03	0.00	0.67	0.01
Motor Development	9.80	0.22**	3.78	0.05	0.01	0
Language and Emergent Literacy	21.82	0.38***	1.65	0.02	3.79	0.05
Health, Hygiene, and Safety	22.50	0.39***	0.63	0.01	0.87	0.01
Cultural Knowledge and Participation	13.29	0.28**	3.66	0.05	3.49	0.05
Approaches To Learning	26.12	0.43***	0.06	0.00	4.24	0.06

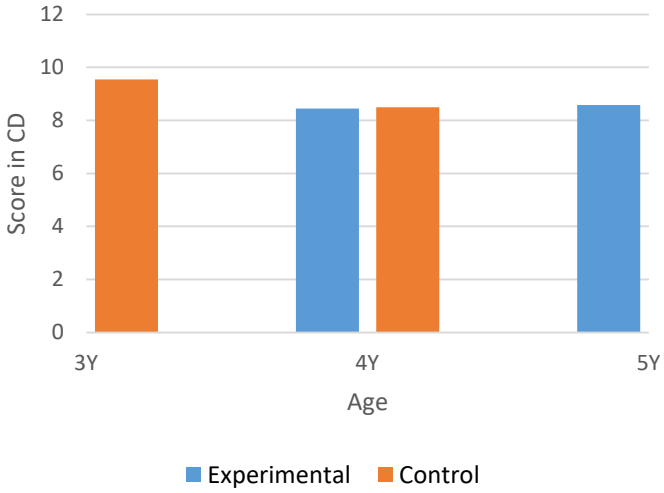
Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Means of the estimates of imputed datasets are presented.

Figures accompanied by *** denote significant statistical differences between groups.

Figures 1 to 21 present graphs showing children's performance in different domains in each province aggregated by age and ECE experience.

Figure 1 Cognitive Development in Ratanakiri **Cognitive Development in Siem Reap**



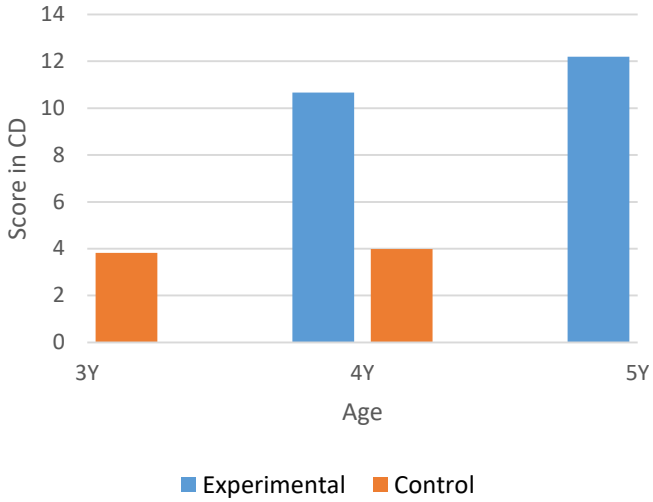
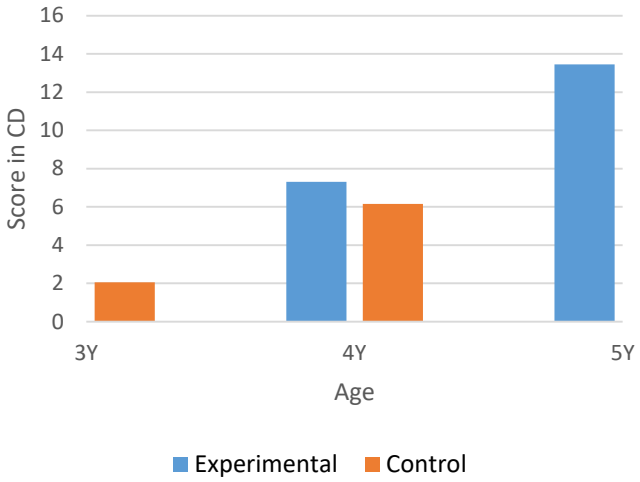


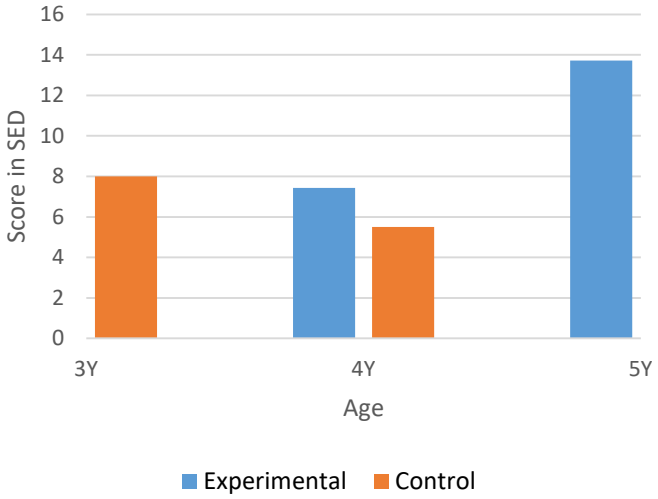
Figure 2 Cognitive Development in Tbong Khmum



Worthy of note here is the considerable difference in scores on the Cognitive Development domain in Siem Reap, between 'experimental' and 'control' groups, indicating a significant impact of CPS on children who participated in the study.

Figure 3 Socio-Emotional Development in Ratanakiri

Figure 4 Socio-Emotional Development in Siem Reap



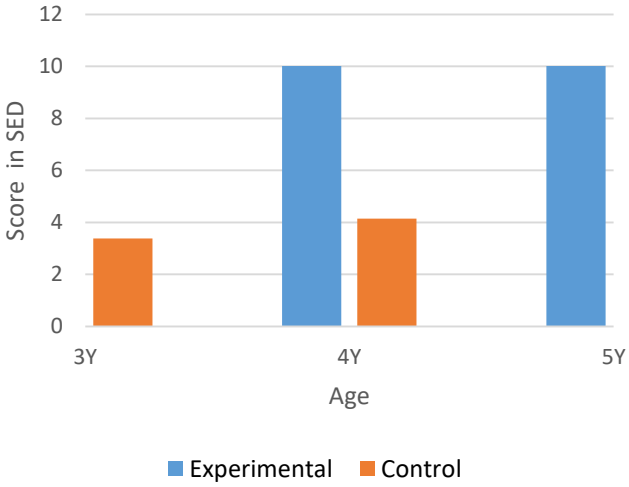


Figure 5 Socio-Emotional Development in Tbong Khmum

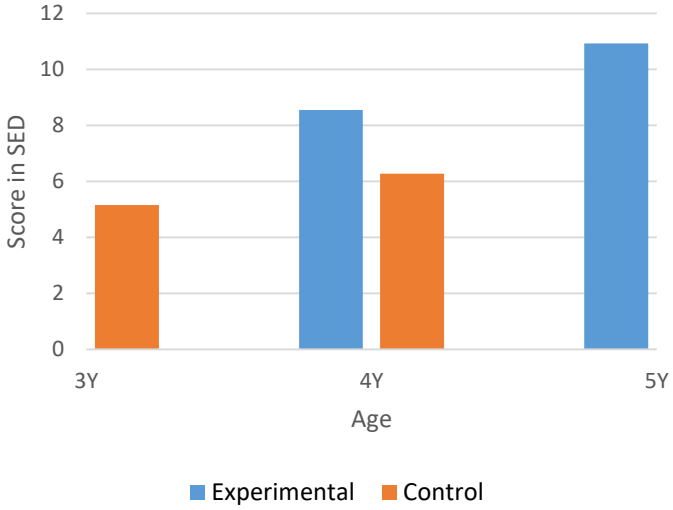
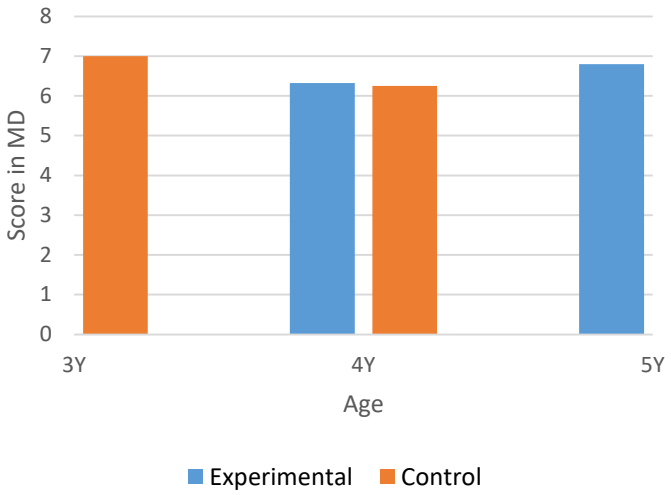


Figure 6 Motor Development in Ratanakiri

Figure 7 Motor Development in Siem Reap



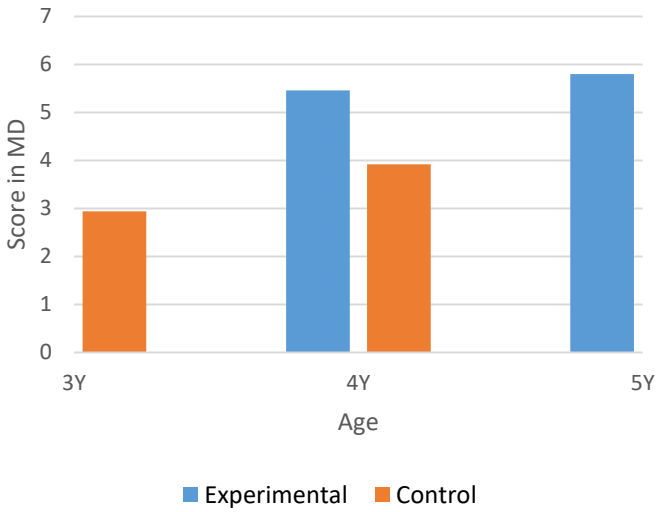


Figure 8 Motor Development in Tbong Khmum

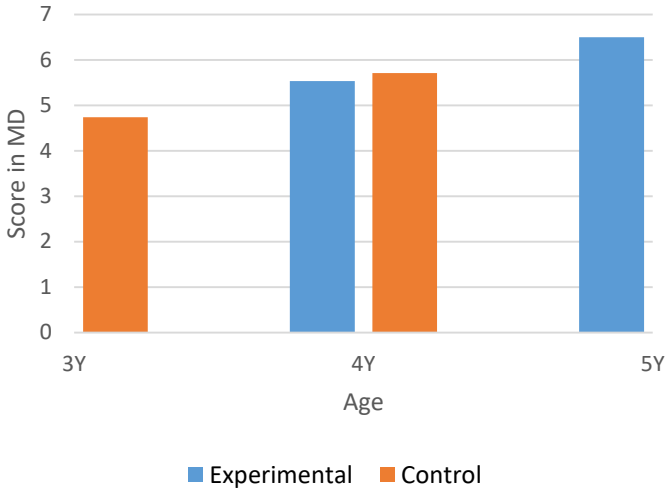
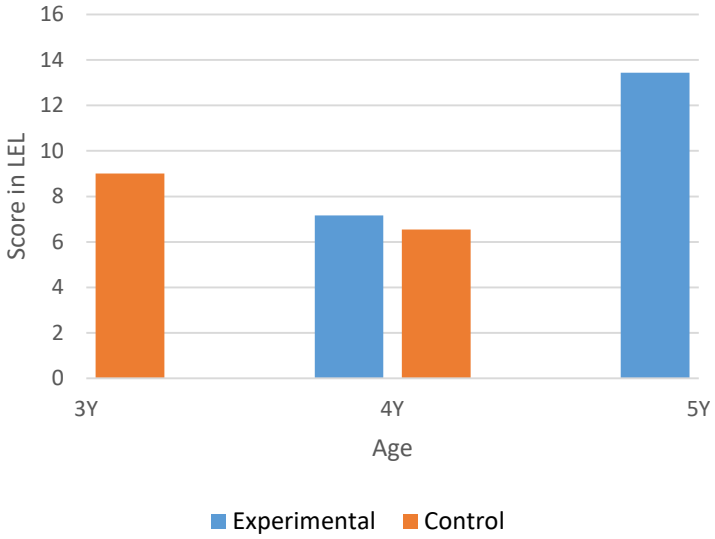


Figure 9 Language and Emergent Literacy in Ratanakiri

Figure 10 Language and Emergent Literacy in Siem Reap



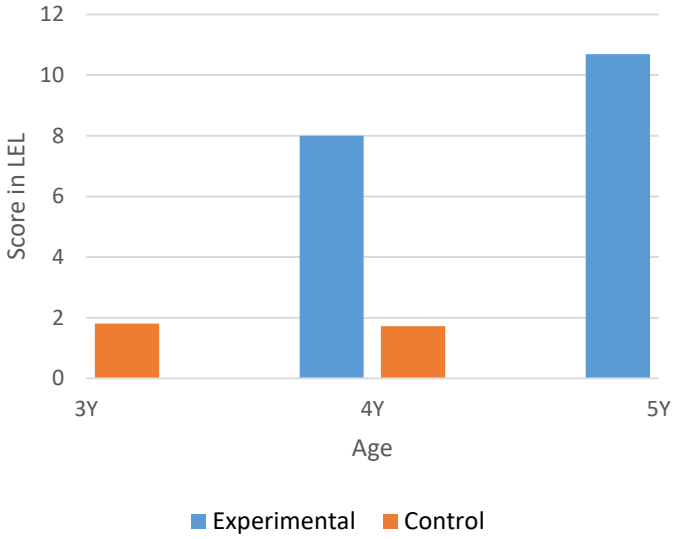
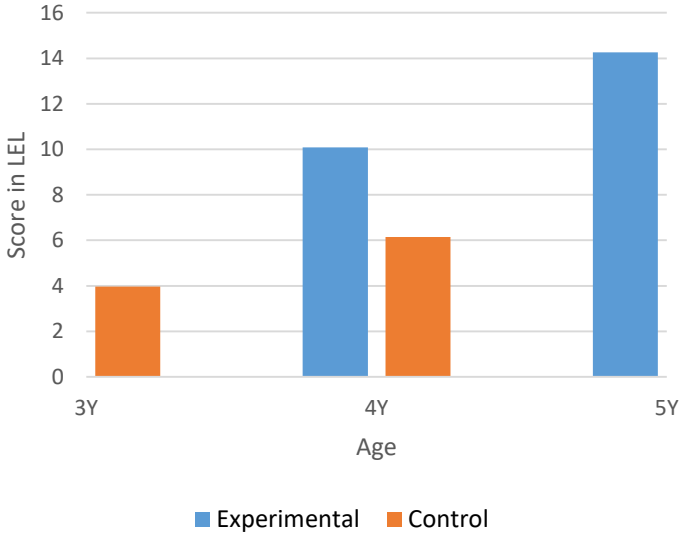


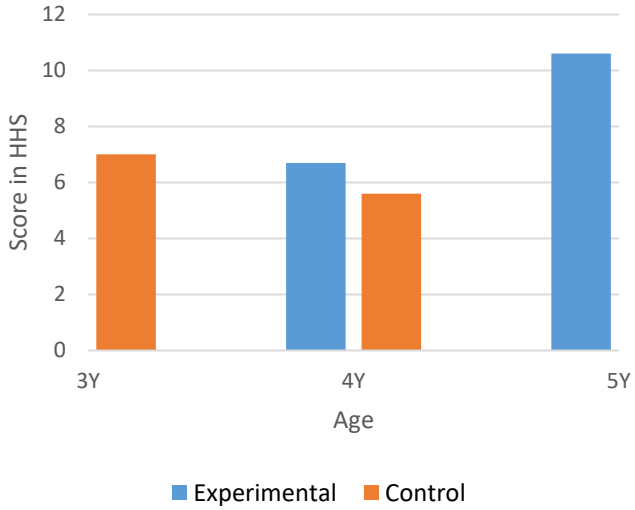
Figure 11 Language and Emergent Literacy in Tbong Khmum



Once again, it is worth noting the large difference in scores on the Language and Literacy domain across 'experimental' and 'control' groups in Siem Reap, given the likely emphasis on literacy that exists in CPS programmes. This indicates that CPS are contributing to CSP Outcome 1. Caution also should, however, be expressed: in adopting a modified version of the EAP-ECDS as a tool for monitoring and evaluation, it needs to be made clear that items and domains must not be used by CPS as a curriculum guide as this would reduce the validity of the EAP-ECDS as an independent measure of children's development.

Figure 12 Health, Hygiene, and Safety in Ratanakiri

Figure 13 Health, Hygiene, and Safety in Siem Reap



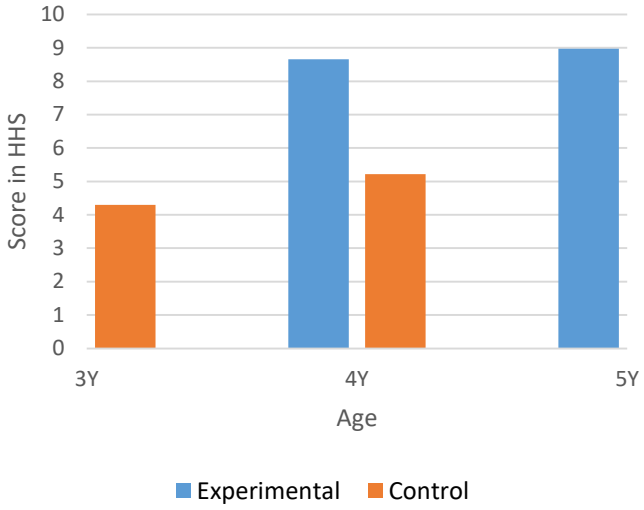


Figure 14 Health, Hygiene, and Safety in Tbong Khmum

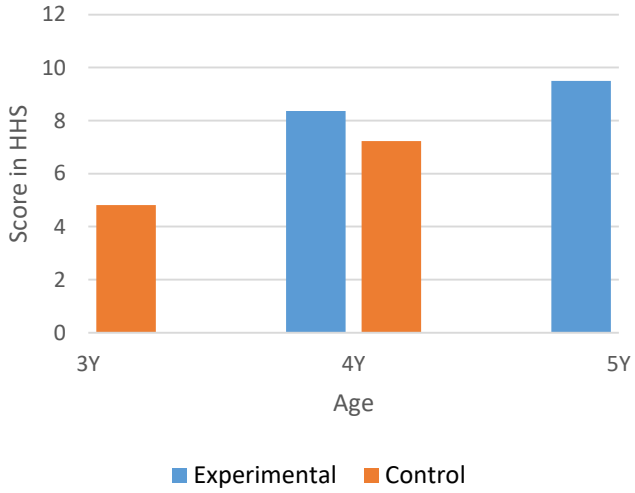


Figure 15 Cultural Knowledge and Participation in Ratanakiri

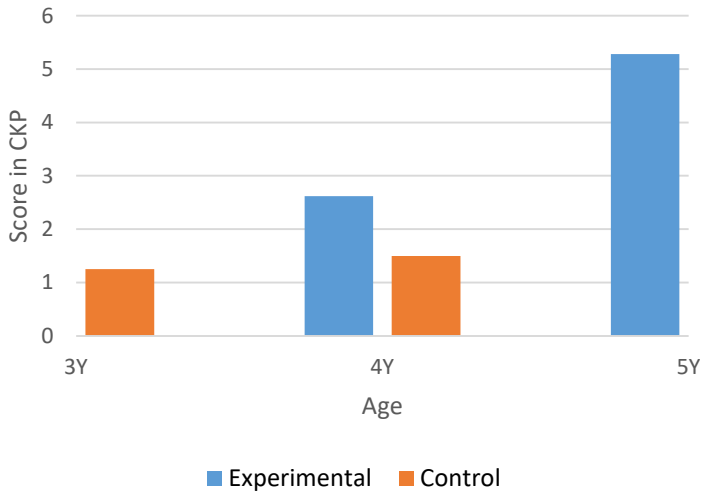


Figure 16 Cultural Knowledge and Participation in Siem Reap

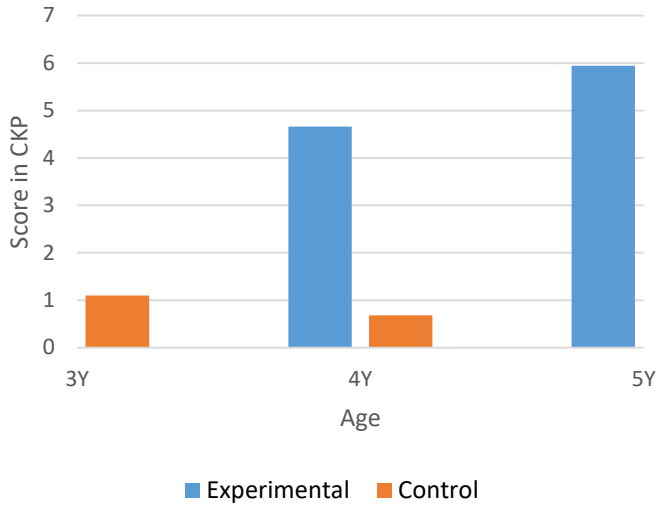


Figure 17 Cultural Knowledge and Participation in Tbong Khmum

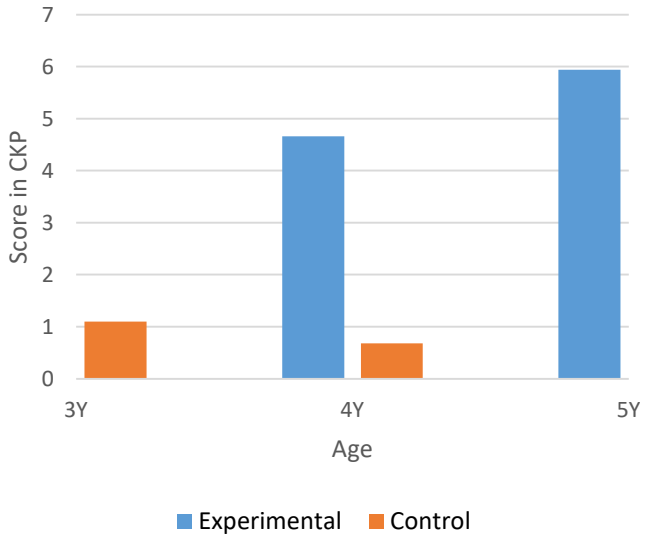
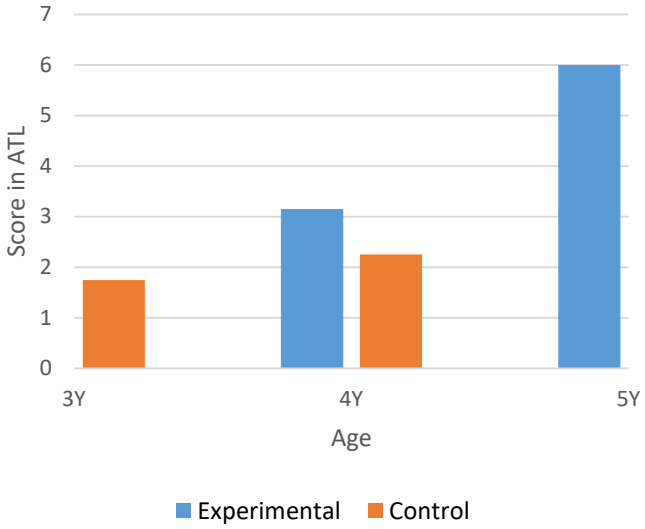


Figure 18 Approaches To Learning in Ratanakiri

Figure 19 Approaches To Learning in Siem Reap



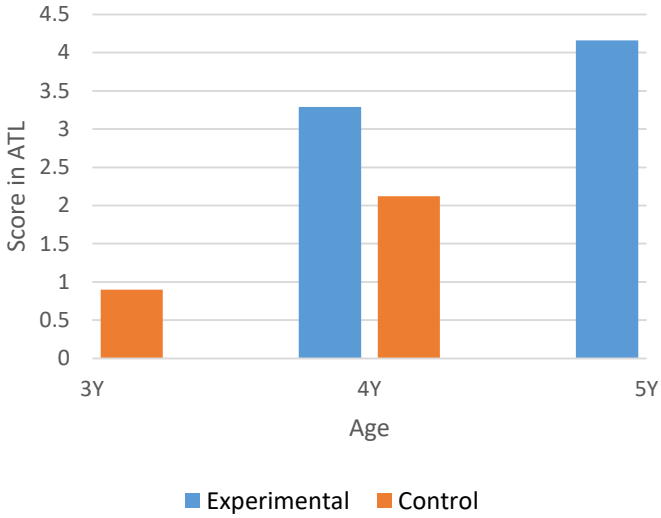
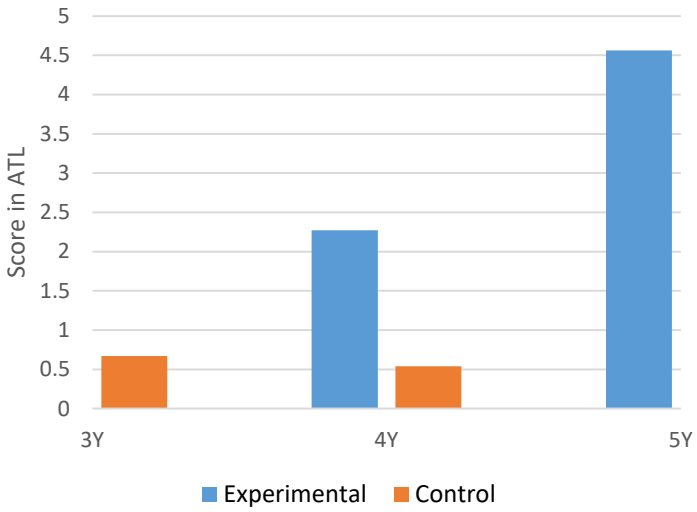


Figure 20 Approaches To Learning in Tbong Khmum



The difference in scores on the 'Approaches to Learning' domain between 5 year olds in 'experimental' and 'control' groups in Siem Reap is of interest, as it may have implications for school readiness (ie. indicating that children who have attended CPS are better prepared for entry into primary school, as they have acquired important learning skills), providing support for the current interventions.

Comparisons across experimental groups

We also compared the performance of children in the experimental groups across provinces using a series of 3 (Age) X 2 (Gender) X 3 (Province) ANOVAs with domain scores as dependent variables. Missing data were imputed using the multiple imputation approach. Significant province effects were only detected in children's performance in Motor Development ($F(2, 117) = 3.12$, $p = .048$) and Cultural Knowledge and Participation ($F(2, 117) = 4.52$, $p = .017$). Post-hoc analyses indicated that there were no significant differences of CPS children's performance in Motor Development between Ratanakiri and Tbong Khmum. However, the CPS children from these two provinces performed significantly better in Motor Development than those from Siem Reap. In contrast, the performance in Cultural

knowledge and Participation of the CPS children from Siem Reap were significantly better than those from Ratanakiri and Tbong Khmum (See Figure 22).

Figure 21 CPS Children's performance in Motor Development across three provinces

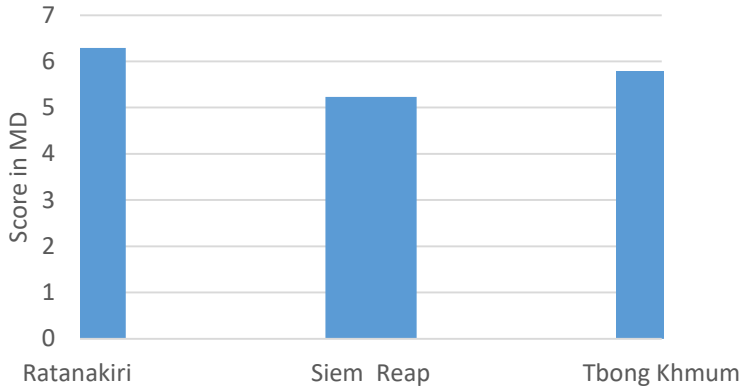
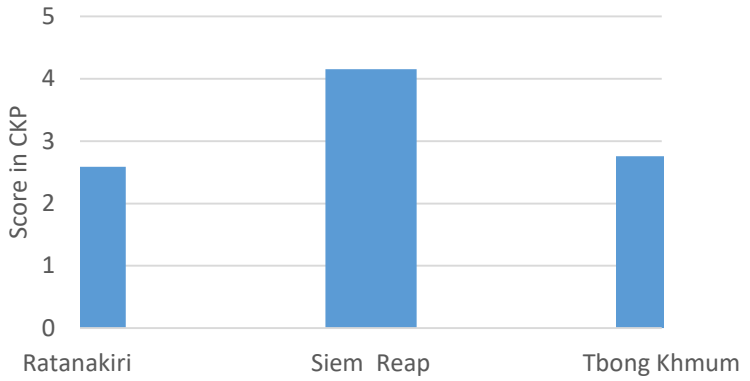


Figure 22 CPS Children's performance in Cultural Knowledge and Participation across three provinces



Anthropometric data

The proportion of malnutrition measured was calculated using cut-off points from the WHO 2006 growth references to determine the prevalence of wasting, stunting and underweight using the definitions below:

Weight-for-height (Wasting): is an indicator that describes the current nutritional status by comparing the body mass to body height as per WHO criteria. It measures acute malnutrition, where the child's body weight is too low in relation to height. Children with weight-for-height Z-scores below two standard deviations (-2 SD) from the mean of the reference population are considered thin for their height, and are wasted. Children who are below three standard deviations (-3 SD) from the mean of the reference population are considered severely wasted – a marker of severe acute malnutrition.

Height-for-age (Stunting): is an indicator of linear growth retardation and collective growth inconsistencies, reflecting failure to receive adequate nutrition over a long period of time. This measurement may be affected by chronic illness. Children with a height-for-age Z-score below two standard deviations (-2 SD) from the mean of the reference population are considered "short for their age" (stunted) and are chronically malnourished. Children who are below three standard deviations (-3 SD) from the mean of the reference population are considered severely stunted.

Weight-for-age (Underweight): is an index used to investigate whether a child is underweight, and may reflect both short and long term changes in nutritional status. Children whose weight-for-age are below two standard deviations from the reference population are classified as underweight and children below three standard deviations are classified as severely underweight.

Table 6 shows the characteristics of participants in the study, by gender. The mean age of children in the study was 30.8 months (95% CI; 29.3 – 32.4). Mean age of males was 28.4 months and females was 32.8 months. This difference is not statistically significant with p-value of 0.005. The overall mean weight of children under five years was 10.9 kg with no difference between males and females. The mean height of participants was 84.6 centimeters (83.9 for male and 85.1 for female). Eighty eight percent of children in the study had a yellow card to verify the date of birth and only 1.1% (5 children) reported having a disability.

Table 6 Comparison of characteristics of study participant between males and females

Characteristics of participants	Total	Males	Females	p-value*
Mean age in months (SD)	30.8 (16.9)	28.4 (16.7)	32.8 (16.8)	0.005
Mean weight in Kilogram (SD)	10.9 (3.0)	10.9 (3.1)	10.9 (3.0)	0.57
Mean height in centimeter (SD)	84.6 (13.3)	83.9 (13.6)	85.1 (13.0)	0.46
Number of Children with yellow card (%)	395 (87.8)	178 (45.1)	217 (54.9)	0.57
Number of Children with disability (%)	5 (1.1)	2 (40.0)	3 (60.0)	0.81

**Statistical significance at p-value <0.005*

Prevalence of malnutrition among children under 5 years old

Anthropometric results presented in this report applied the WHO growth reference standards of 2006. Overall, 32.6% of the participants (150 children) were stunted, 25.9% were underweight and 10.2% were experiencing wasting. Among those children with wasting, 17.4% were from Ratanakiri province, 8.6% from Siem Reap, and 8.5% from Tbong Khmum. In regards to stunting, the highest prevalence was in Ratanakiri province at 50.0%, followed by Siem Reap (31.3%) and Tbong Khmum (24.1%). In regards to underweight children, the highest prevalence was in Ratanakiri at 44.2% then in Tbong Khmum at 23.4% and Siem Reap 20.6%.

Table 7 Prevalence of malnutrition among children under 5 years old

Name of province	Wasting n (%)	Stunting n (%)	Underweight n (%)
Tbong Khmum	12 (8.5)	34 (24.1)	33 (23.4)

Siem Reap	20 (8.6)	73 (31.3)	48 (20.6)
Ratanakiri	15 (17.4)	43 (50.0)	38 (44.2)
Total	**47 (10.2)**	**150 (32.6)**	**119 (25.9)**

Table 8 shows the comparison of malnutrition prevalence between children under two years and from two to five years of age. It is seen that prevalence of wasting was high among children age under two years at 13.7% compared to those aged more than two years at 8.1%, while the prevalence of stunting was higher among children aged from two to under five years at 36.1%, compared to those aged less than two years at 26.9%. There were significant differences in prevalence of wasting and stunting between children age under two years and children aged two to under five years with p-value of 0.05 for wasting and 0.03 for stunting. However, there was no significant difference in prevalence of underweight between children aged under two years and from two to under five years (22.3% and 28.1% respectively) with p-value of 0.16.

Table 8 Prevalence of malnutrition by age of under 2 years and from 2 to under five years

Malnutrition Indicators	**less than 2 years n (%)**	**Two years to less than 5 years n (%)**	**p value**
Wasting	24 (13.7)	23 (8.1)	0.05
Stunting	47 (26.9)	103 (36.1)	0.03
Underweight	39 (22.3)	80 (28.1)	0.16

Table 9 shows the prevalence of malnutrition as classified by WHO cut-off points into moderate and severe categories, comparing males and females aged less than five years old. Overall, the prevalence of severe wasting (weight for height z-score <-3 SD), severe stunting (height for age z-score <-3 SD) and severe underweight (weight for age z-score <-3 SD) was 1.3%, 11.8% and 6.1% respectively. The prevalence of moderate wasting (weight for height z-score <-2 SD and >=-3 SD) was 8.9%, moderate stunting (height for age z-score <-2 SD and >=-3 SD) was 20.4%, and moderate underweight (weight for age z-score <-2 SD and >=-3 SD) was 19.8%. Females tended to be more severely underweight and severely stunted compared to males. However, no statistically significant difference between both groups was noted.

Table 9 Prevalence of classified malnutrition between males and females aged under 5 years

Severity of malnutrition	**Total n (%)**	**Male n (%)**	**Female n (%)**	**p value**
Wasting (whz < -2 SD)				
Moderate wasting (<-2 SD and >=-3 SD)	41 (8.9)	24 (11.4)	17 (6.8)	0.55
Severe wasting (<-3 SD)	6 (1.3)	3 (1.4)	3 (1.2)	

Stunting (haz<-2 SD)				
Moderate stunting (<-2 SD and >=-3 SD)	93 (20.4)	42 (20.1)	51 (20.6)	0.21
Severe stunting (<-3 SD)	54 (11.8)	24 (11.5)	30 (12.1)	
Underweight (waz < -2 SD)				
Moderate underweight (<-2 SD and >=-3 SD)	91 (19.8)	42 (20.0)	49 (19.6)	0.97
Severe underweight (<-3 SD)	28 (6.1)	10 (4.8)	18 (7.2)	

We further compared the growth status of children between the experimental group and the control group in each province. From the descriptive analyses, the percentages of children having malnutrition status (stunting or underweight) were likely to increase in the older group of children than in the younger group (see Table 10).

Chi-square tests of goodness-of-fit were conducted to examine the differences in terms of the probability of suffering from stunting or underweight between the two groups in different provinces. No differences were detected when we pooled children of different age groups together in the analyses. Therefore, separate analyses were conducted for children aged 0-3 and 3-6 groups in each province. A significant difference was detected in the age group of 3-6 in Siem Reap, showing children in the experimental group were less likely to have stunting than those in the control group, χ^2 (1, N = 148) = 4.71, p < .05.

We also compared the percentages of stunting and underweight children in the experimental groups across three provinces. The results indicated that children under three in the experimental group of Tbong Khmum were more likely to suffer from stunting and underweight than their counterparts in Ratanakiri and Siem Reap (stunting: χ^2 (1, N = 136) = 11.01, p < .01; underweight: χ^2 (1, N = 136) = 17.53, p < .001). For those aged 3-6, those in the experimental group of Tbong Khmum were found to be more likely to suffer from stunting than those from the other two provinces (χ^2 (1, N = 140) = 6.33, p < .05).

Table 10 Percentage of stunting and under-weight children in each province

Province	Age Group	Stunting		Underweight	
		Control Group n (%)	Experimental n (%)	Control Group n (%)	Experimental Group n (%)
Ratanakiri	0-3 (42 in control group; 43 in experimental group)	8 (19.05%)	6 (13.95%)	9 (21.42%)	7 (16.28%)
	3-6 (42 in control group; 44 in experimental group)	17 (40.48%)	14 (31.82%)	17 (40.48%)	16 (36.36%)
Siem Reap	0-3 (67 in control group; 65 in experimental group)	16 (23.88%)	23 (35.38%)	12 (17.91%)	8 (12.31%)
	3-6 (76 in control group; 72 in experimental group)	33 (43.42%)	19 (26.39%)	26 (34.21%)	19 (26.39)
Tbong Khmum	0-3 (20 in control group; 28 in experimental group)	7 (35.00%)	14 (50.00%)	8 (40.00%)	14 (50.00%)
	3-6 (29 in control group; 24 in	18 (62.07%)	13 (54.17%)	10 (34.48%)	12 (50.00%)

	experimental group)				

Family Environment of Children Aged 0-5

(Related to CSP Outcome 1.1 – Parents and caregivers provide positive stimulation and support to learning of children aged 0-5).

We present the main findings for each Module below.

Module 1: Respondent and household characteristics

A family asset index (max=21) was established based on whether or not the interviewee reported owning particular furniture, electronic devices, and vehicles. There were no differences in family assets between the experimental and control groups in Ratanakiri and Tbong Khmum; but those in the control group had a higher score on the family asset index than the experimental group in Siem Reap (see Figure 24). Table 11 shows details of the materials used to build the roof, floor, and walls of the houses reported in the three provinces.

Figure 23 Family assets in different provinces

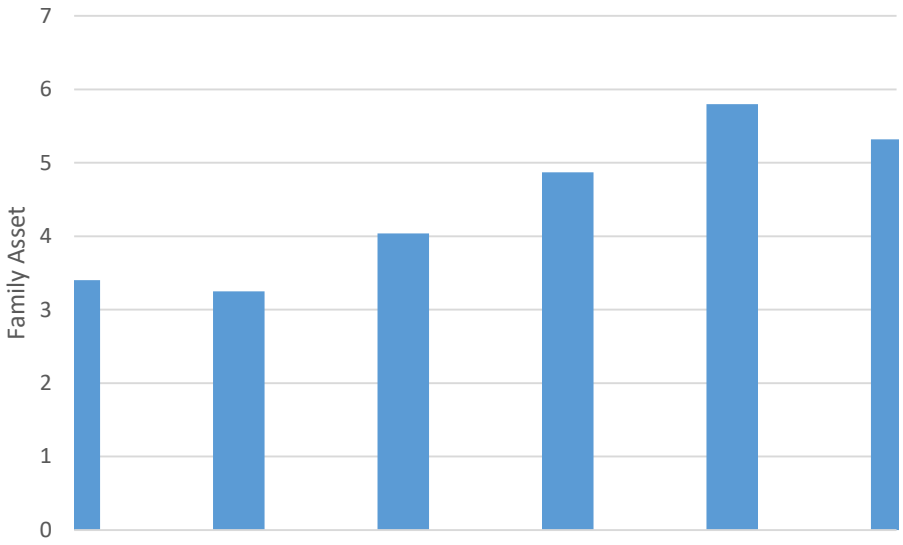


Table 11 Materials used to build the house (roof, floor, and walls) in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
at is the roof of your house made of?						
amboo/Thatch/Palm	18.2	23.1	15.4	16.1	3.4	13.6
ood/Plywood		1.9	0.7	9.2	14.6	13.6
es	1.8		25.2	20.7	36.0	22.0
ncrete/Brick/Stone			0.7	1.1		
alvanized n/aluminium/other metal	76.4	75.0	53.8	50.6	39.3	44.1
sbestos cement sheets			4.2	2.3	5.6	6.8
astic/synthetic material sheets	1.8					
at is the floor of your house made of?						
rth, clay	12.7	13.5	7.0	4.6	15.7	13.6
ood/Bamboo planks	40.0	30.8	25.9	30.5	60.7	71.2
ncrete/Brick/Stone	1.8		7.0	7.5	14.6	1.7
rquet, polished wood	43.6	55.8	58.7	53.4	3.4	11.9
lished stone, marble			0.7	1.1	2.2	
ramic tiles	1.8		0.7	2.9	2.2	1.7
at are the walls of your house made of?						
amboo/Thatch/Reeds/Palm	23.6	28.8	37.8	20.1	30.3	40.7
rth	1.8					
ood/Plywood	49.1	65.4	49.0	69.5	48.3	39.0
ncrete/Brick/Stone	1.8		7.0	5.7	4.5	3.4
alvanized n/Aluminium/Other metal	1.8	3.8	5.6	4.0	16.9	16.9
estos cement sheets	1.8		0.7			
vaged/Improvised materials	16.4			0.6		

Module 2: Knowledge and practice of key family practices

(Key Family Practices covered here: Hygiene; Exclusive breastfeeding; Complementary feeding; Home care for illness; Home treatment for infections; Care seeking; Compliance with health advice; Antenatal care; Micronutrients; Immunization).

Hygiene and Sanitation

Water sources

Only around half of the parents reported that they use protected water (pumped water and water from a protected well) as drinking water in all three provinces. The majority of the respondents believed that their drinking water was clean. Around one-third of the parents believed that the water was safe to drink if it looked clean. Some parents responded that they decided whether the water was safe to drink based on its temperature. More details can be found in Table 12.

Table 12 Water sources in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
Water source in the rainy season						

River/lake/pond	29.1	34.6	3.5	10.9	1.1	0
Water from the rice field	1.8	0	0	0.6	0	
Rain water	12.7	3.8	8.4	20.7	0	0
Protected well	9.1	1.9	9.8	9.2	24.7	20.3
Unprotected well	16.4	15.4	28.0	28.2	34.8	25.4
Pumped water	30.9	42.3	46.9	27.0	37.1	49.2
Other	0	1.9	2.8	3.4	2.2	5.1
Water source in the dry season						
River	43.6	38.5	8.4	23.0	0	0
Water from the rice field	0	0	0	0	0	0
Rain water	0	0	0	0.6	0	0
Protected well	9.1	1.9	11.2	10.3	27.0	22.0
Unprotected well	16.4	9.6	29.4	28.7	33.7	25.4
Pumped water	30.9	50.0	48.3	33.3	0	47.5
Other	0	0	2.8	4.0	2.2	5.1
Is your drinking water safe to drink?						
Yes	72.7	65.4	69.2	65.5	71.9	76.3
No.	20.0	44.5	22.4	23.6	18.0	15.3
Don't know	7.3	23.1	8.4	10.9	10.1	8.5
How do you know the water is safe?						
Water is clean	32.7	25.0	28.7	28.7	39.3	44.1
Water comes from the tap	3.6	5.8	3.5	3.4	2.2	0
Water has no bacteria	3.6	3.8	1.4	3.4	11.2	11.9
Water is cold/hot	27.3	13.5	21.7	13.2	16.9	5.1
Other	5.5	9.6	9.8	12.6	3.4	11.9
Don't know/declined	0	7.7	4.2	4.0	0	3.4
How do you know the water is not safe?						
Water is dirty	36.4	30.8	23.1	27.0	37.1	37.3
From a bad source	7.3	7.7	27.3	15.5	11.2	8.5
Water has bacteria	5.5	0	8.4	4.0	9.0	13.6
Water is cold/hot	3.6	1.9	4.9	2.9	5.6	5.1
Others	9.1	7.7	1.4	12.1	3.4	8.5
Don't know/declined	10.9	17.3	3.5	4.6	6.7	3.4

Water treatment

Most parents reported that they treat their drinking water either always or sometimes. The most common method of treating drinking water in all three provinces was boiling. In Siem Reap and Tbong Khmum, more than one-third of parents also reported using water filters to treat their drinking water (see Table 13).

Table 13 Water treatment in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
Whether or not treat your drinking water						
Yes, always	61.8	67.3	55.9	52.9	66.3	71.2
Yes, sometimes	12.7	5.8	19.6	8.6	9.0	6.8
No, never	21.8	21.2	23.1	37.9	22.5	22.0
Other				0	0	

Don't know/declined	3.6	5.8	1.4	0.6	2.2	
How do you treat your drinking water						
Boiling	85.5	82.7	53.8	56.9	51.7	50.8
Use water filter	7.3	3.8	39.2	29.9	39.3	37.3
Put medicals	0	0	0	0.6	1.1	1.7
Other	1.8	13.5	1.4	2.3	4.5	5.1
Don't know/Declined	5.5	0	5.6	10.3	3.4	5.1

Hand washing

Between 27% and 44% of parents reported that they wash hands before handling food, and between 28-51% reported that they wash hands before eating. No patterns of higher numbers of parents in experimental groups reporting handwashing were found. For children aged 5 or younger, the most common time to wash hands was before eating and around 60% parents in all three provinces reported the same. Only 10% to 25% of the parents in the three provinces reported that their children aged 5 or younger washed their hands after going to the toilet and/or playing outside, although it is worthy of note that parents report that their children wash their hands after going to the toilet more regularly than they themselves do. Most of the parents reported that they used soap or ash to wash hands, although the percentage in Ratanakiri was relatively lower compared to that in Siem Reap and Tbong Khmum. More information can be found in Table 14.

Table 14 Hand washing in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
When do you usually wash your hands?						
Before handling food	34.5	44.2	35.0	38.5	27.0	27.1
Before eating	40.0	34.6	28.0	39.1	44.9	50.8
Before feeding the children	7.3	3.8	7.0	6.3		3.4
After going to the toilet	12.7	1.9	14.0	7.5	10.1	8.5
After eating	3.6	1.9	6.3	1.7	6.7	5.1
After preparing food		3.8	2.1	3.4	3.4	3.4
After work	1.8	3.8	4.9	1.1	4.5	1.7
After disposing children's faeces		1.9	2.1	1.1	3.4	0
Don't wash my hands		3.8	0	1.1		0
Other			0			0
Don't know/Declined		3.8	0.7	1.1		0
When do your children aged 5 or younger generally wash their hands?						
Before eating	65.5	57.7	58.0	48.3	58.4	64.4
After going to the toilet	16.4	23.1	25.9	25.3	12.4	11.9
After playing outside	14.5	13.5	12.6	22.4	25.8	16.9
Other		3.8	2.8	2.9	3.4	6.8
Don't know/Declined	3.6	1.9	0.7	1.1		0
Do you use soap or ash to wash your hands?						
Yes, always	74.5	38.5	65.0	63.8	80.9	84.7
Yes, sometimes	12.7	28.8	31.5	29.9	15.7	11.9
No, never	12.7	32.7	3.5	6.3	3.4	3.4

Waste disposal

The majority of the respondents reported that they dispose of solid waste by burning and then by throwing it somewhere around the house, especially in Siem Reap and Tbong Khmum. There were also quite a few families in Ratanakiri who dispose of solid waste by throwing it in the forest or river. Methods of disposing of children's faeces varied among the three provinces. In Ratanakiri, around half of the parents in the control group reported throwing children's faeces in the forest or river and another 40% reported throwing it

somewhere around the house. Around one-third of parents in the experimental group reported disposing of children's faeces by burning, one-fourth by throwing it in the forest or river, and another one-fourth by burying it. More than half of the parents in Siem Reap reported that they dispose of children's faeces by burning it. And around half of the parents in Tbong Khmum reported that they dispose of children's faeces by burying it. More information can be found in Table 15.

Table 15 Waste disposal in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
How do you dispose of solid water						
Throw somewhere around the house	12.7	26.9	9.8	16.1	10.1	6.8
Burn	69.1	30.8	81.8	74.7	73.0	84.7
Throw in the forest/river	10.9	38.5	1.4	1.7		3.4
Bury	5.5	1.9	4.2	5.7	16.9	
Other	1.8	0	1.4	0.6		1.7
Don't know/Declined	0	0				
How do you dispose of child faeces?						
Throw somewhere around the house	16.4	40.4	9.8	18.4	9.0	8.5
Burn	34.5	5.8	53.8	35.1	29.2	37.3
Throw in the forest/river	25.5	53.8	7.7	5.7	4.5	5.1
Bury	23.6		28.7	40.2	57.3	45.8
Other				0.6		
Don't know/Declined						3.4

Sanitation facilities

Only a very limited number of households reported having a toilet facility in the household. The most frequently mentioned reason for not having a toilet at home was the high cost, especially in Siem Reap and Tbong Khmum. In Ratanakiri, the major reason for not having a toilet in a house also included a lack of manpower or labour and some other unspecified reasons. For those having a toilet at home, parents usually defecated at the toilet at home. While for others, they usually chose open land or forest for defecation. Some parents also used a public toilet. For young children, some children defecated in the home toilet. But still around half of the children were reported to defecate in open land or forest and/or around the house. The majority of the parents reported that it was problematic not having a toilet at home, although the percentage for the control group in Ratanakiri was only 55.8%. Parents raised different reasons for open defecation and the more frequently mentioned challenges reported by parents in relation to open defecation included distance concerns, difficult in the rainy season, shame, bad smell, and flies (see Table 16). No correlations between adults' attitude toward open defection and the defection locations for themselves as well as their kids were found.

Table 16 Sanitation facilities in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
Toilet facility in the households						
Flush latrine	12.7	1.9	62.9	39.1	43.8	47.5
Pit latrine with slab	23.6	9.6		1.1		3.4
Pit latrine without slab or open pit	12.7	3.8		1.1	1.1	
Latrine overhanging field or						1.7

water						
None	50.9	82.7	37.1	58.6	55.1	47.5
Other		1.9				
Don't know/Declined						
Why do you not have a toilet in the household?						
Don't need one	11.5	11.6	3.7	1.0	2.0	3.6
Cannot afford/expensive	53.8	23.3	87.0	91.2	93.9	85.7
No manpower or labour	15.4	20.9	1.9	1.0		3.6
Don't know how to build	3.8	2.3				
Lack of land		2.3	1.9	2.0		
Other	7.7	37.2	5.6	3.9	4.1	7.1
Don't know/Declined	7.7	2.3		1.0		
Where do the adults normally defecate?						
Toilet at home	38.2	13.5	60.1	36.4	41.6	44.1
Public toilet/pit latrine or shared with others	10.9	1.9	7.7	6.9	11.2	13.6
Open land or forest	47.3	80.8	23.8	37.4	33.7	40.7
River side		1.9	0.7	0.6		
Around the house	1.8	1.9	7.0	16.1	13.5	1.7
Other			0.7	2.6		
Don't know/Declined						
Where do your children aged 6 or younger normally defecate?						
Toilet at home	29.1	9.6	52.4	34.5	33.7	37.3
Public toilet/pit latrine or shared with others	10.9	1.9	5.6	6.9	13.5	8.5
Open land or forest	41.8	59.6	16.8	21.8	21.3	25.4
River side		1.9		0.6	1.1	1.7
Around the house	14.5	26.9	23.1	32.8	27.0	16.9
Other			2.1	3.4	3.4	10.2
Don't know/Declined						
Are there problems related to open defecation?						
Yes	89.1	55.8	91.6	91.4	91.0	96.6
No	10.9	42.3	5.6	6.9	5.6	1.7
Don't know/Declined		1.9	2.8	1.7	3.4	1.7
What are the problems?						
Need to walk far	10.9	3.8	24.5	14.4	6.7	13.6
Difficult in rainy season	12.7	1.9	18.2	17.2	11.2	6.8
No privacy	1.8	1.9	2.1	0.6	3.4	
Shame	10.9	17.3	9.8	8.6	13.5	13.6
Bad smell	30.9	19.2	23.1	22.4	36.0	33.9
Attracts flies	9.1	3.8	9.8	10.3	6.7	13.6
Environment gets polluted	3.6	1.9	2.8	5.2	7.9	6.8
Water gets polluted	1.8		0.7		2.2	
Other	5.5	5.8	0.7	12.6	3.4	8.5

Malaria

The majority of the households in Ratanakiri and Siem Reap and more than half of the households in Tbong Khmum reported having long-lasting insecticidal nets. Most of these households got the nets from either NGO or government. Almost all children in the households with long-lasting insecticidal nets were reported to sleep under the nets.

Table 17 Use of long-lasting insecticidal nets in three provinces

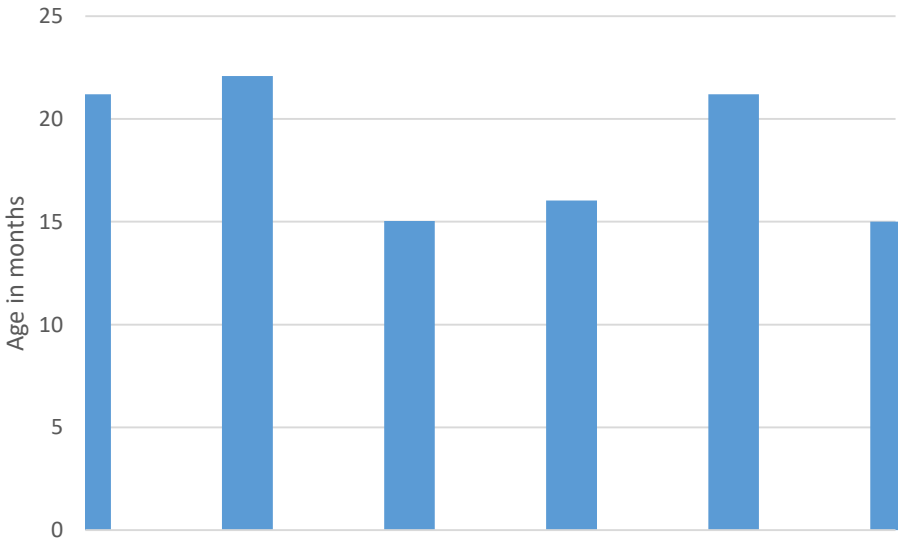
	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
Do you have any long-lasting insecticidal nets in your household?						
Yes	90.9	96.2	85.3	82.2	65.2	52.5
No	9.1	3.8	13.1	17.8	32.6	47.5
Don't Know/Declined			1.4		2.2	
Where did you get the nets from?						
Market	4.0	2.0	14.8	14.7	10.3	6.5
NGO	26.0	16.0	50.0	33.6	46.6	32.3
Government/local authorities	68.0	66.0	32.8	46.9	39.7	54.8
Relative/Friend	2.0	2.0	2.5	2.1	1.7	6.5
Other:		2.0		0.7	1.7	
Don't know/Declined		12.0		2.1		
Do all your children sleep under the nets?						
Yes	100.0	100.0	99.2	100	96.6	96.8
No			0.8		3.4	3.2
Don't Know/Declined						

Nutrition

Breastfeeding

As noted earlier, there were many instances of the KAP survey having been completed by caregivers other than mothers, including fathers and grandparents. Because (i) breastfeeding data is most reliably reported by mothers and (ii) there were high rates of missing data in this section, for the data related to breastfeeding, we present both raw percentages and 'valid responses'. We did not include the items where the rates of missing data are higher than 90%, in these analyses. Most mothers (between 73 and 98%) reported that their children were fed with breastmilk. Reasons for stopping breastfeeding varied. The mean ages of stopping breastfeeding in different groups are presented below in Figure 25. Again, it should be noted that a lot of respondents did not provide related information.

Figure 24 Mean age of child when breastfeeding stopped across groups and provinces



The unexpected result in Siem Reap (mothers in experimental groups indicating earlier termination of breastfeeding than mothers in all other groups) could be partially explained by lifestyle patterns. As indicated in Table 18 below, up to 37% of valid responses from mothers in Siem Reap indicated high numbers of mothers stopping breastfeeding due to work demands.

For most mothers, the 'food' of choice to supplement breast feeding was 'milk other than breast milk' (between approximately 20 – 40%), followed by porridge and water. Only a very small number of mothers reported choosing infant formula.

Table 18 Breastfeeding patterns across three provinces

	Ratanakiri (n=106)		Siem Reap (n=259)		Tbong Khmum (n=120)	
	Experimental	Control	Experimental	Control	Experimental	Control
	% (valid %)	% (valid %)	% (valid %)	% (valid %)	% (valid %)	% (valid %)
ood or liquids given to a baby younger than 6 months						
Breast milk	61.1 (76.7)	40.4 (65.6)	58.5 (86.3)	52.5 (78.7)	47.8 (86.8)	47.1 (92.3)
Other liquid, like milk, ugar water, etc.	3.7 (4.7)	1.9 (3.1)	3.4 (5.0)	7.1 (10.6)	2.9 (5.3)	
emi-solid or solid food	14.8 (18.6)	19.2 (31.3)	5.1 (7.5)	6.4 (9.6)	4.3 (7.9)	3.9 (7.7)
d you breastfeed the child participating in this survey?						
Yes	75.9 (95.3)	55.8 (90.6)	65.3 (97.5)	57.4 (86.2)	42.0 (78.4)	37.3 (73.1)
No	3.7 (4.7)	5.8 (9.4)	1.7 (2.5)	9.2 (13.8)	11.6 (21.6)	13.7 (26.9)
Why did you stop breastfeeding?						
Child was too old	3.7 (12.5)	3.8 (14.3)	7.6 (28.1)	9.2 (36.1)	15.9 (73.3)	7.8 (57.1)
Child stopped m/herself	7.4 (25.0)	7.7 (28.6)	2.5 (9.4)	3.5 (13.9)	1.4 (6.7)	
No breast milk	1.9 (6.3)	1.9 (7.1)	0.8 (3.1)	0.7 (2.8)		2.0 (14.3)
Child did not like my ilk		1.9 (7.1)	0.8 (3.1)	0.7 (2.8)		
Child was sick			0.8 (3.1)	0.7 (2.8)		2.0 (14.3)
Mother was sick	1.9 (6.3)	1.9 (7.1)	0.8 (3.1)			
Someone advise it						
Mother had to work	5.6 (18.8)		10.2 (37.5)	7.8 (30.6)	1.4 (6.7)	2.0 (14.3)
Became pregnant again	5.6 (18.8)	7.7 (28.6)	2.5 (9.4)	1.4 (5.6)		
What semi-solid or soft food did you give your child participating in this survey when you first started giving other oods besides breast milk?						
Milk (other than breast ilk)	13.0 (21.2)	11.5 (26.1)	14.4 (24.6)	9.2 (17.3)	8.7 (20.0)	15.7 (38.1)
nfant formula (powder ilk)			2.5 (4.3)	2.8 (5.3)	4.3 (10.0)	3.9 (9.5)
Plain water	22.2 (36.4)	9.6 (21.7)	10.2 (17.4)	14.2 (26.7)	5.8 (13.3)	
Water with sugar nd/or salt	1.9 (3.0)		2.5 (4.3)	2.8 (5.3)		
Fruit juice	5.6 (9.1)	5.8 (13.0)	3.4 (5.8)	2.8 (5.3)	5.8 (13.3)	
Porridge	7.4 (12.1)	7.7 (17.4)	16.9 (29.0)	14.9 (28.0)	11.6 (26.7)	13.7 (33.3)
Other solid, semi-solid r soft foods	11.1 (18.2)	9.6 (21.7)	8.5 (14.5)	5.7 (10.7)	7.2 (16.7)	7.8 (19.0)
Why did you give that semi-solid or soft food?						
Baby liked it	22.2 (36.4)	17.3 (39.1)	6.8 (11.8)	9.9 (18.7)	7.2 (16.7)	7.8 (19.0)
Someone advised it	5.6 (9.1)		2.5 (4.4)	2.1 (4.0)	4.3 (10.0)	2.0 (4.8)
Good for baby	18.5 (30.3)	1.9 (4.3)	28.8 (50.0)	16.3 (30.7)	8.7 (20.0)	17.6 (42.9)
t is traditional	1.9 (3.0)		4.2 (7.4)	7.8 (14.7)	2.9 (6.7)	3.9 (9.5)
Child was thirsty/hungry	9.3 (15.2)	17.3 (39.1)	12.7 (22.1)	12.8 (24.0)	18.8 (43.3)	9.8 (23.8)
Other	1.9 (3.0)	3.8 (8.7)	0.8 (1.5)	1.4 (2.7)	1.4 (3.3)	

The following table shows information on parents' knowledge and information sources on breastfeeding and complementary feeding. Among those who provided valid responses for related questions, between 36% - 79% mothers in both the experimental and control groups reported that they have received information about breastfeeding and complementary feeding. In Ratanakiri, a much larger number of mothers reported having received information in the experimental group (79%) than in the control groups (36%). In Siem Reap, 60% of mothers in the control group and 76% of mothers in the experimental groups reported that they had received relevant information. Health professionals were reported as important sources of information on breastfeeding and complementary feeding in Tbong Khmum and Siem Reap, whereas community members were reported as important source in Ratanakiri.

Table 19 Information sources on breastfeeding and complementary feeding across three provinces

	Ratanakiri (n=106)		Siem Reap (n=259)		Tbong Khmum (n=120)	
	Experimental	Control	Experimental	Control	Experimental	Control
	% (valid %)	% (valid %)	% (valid %)	% (valid %)	% (valid %)	% (valid %)
e you received information about breastfeeding?						
	63.0 (79.1)	21.2 (35.5)	51.7 (76.3)	39.7 (60.2)	31.9 (59.5)	27.5 (53.8)
	14.8 (18.6)	28.8 (48.4)	15.3 (22.5)	24.8 (37.6)	20.3 (37.8)	21.6 (42.3)
n't know/Declined	1.9 (2.3)	9.6 (16.1)	0.8 (1.3)	1.4 (2.2)	1.4 (2.7)	
n whom did you receive this information the first time?						
ther	3.7 (5.9)	1.9 (9.1)	4.2 (8.2)	2.8 (7.1)	2.9 (9.1)	2.0 (7.1)
er relative	3.7 (5.9)	1.9 (9.1)	1.7 (3.3)	0.7 (1.8)		2.0 (7.1)
mmunity member	20.4 (32.4)	1.9 (9.1)	2.5 (4.9)			2.0 (7.1)
ditional birth attended	1.9 (2.9)		0.8 (1.6)	3.5 (8.9)		
lth professional	7.4 (11.8)	5.8 (27.3)	24.6 (47.5)	20.6 (51.8)	24.6 (77.3)	17.6 (64.3)
ff from NGO	16.7 (26.5)	5.8 (27.3)	17.8 (34.4)	9.2 (23.2)	2.9 (9.1)	3.9 (14.3)
ff from government	5.6 (8.8)	1.9 (9.1)				
n't know/Declined	1.9 (2.9)	1.9 (9.1)				
e you ever received information about complementary feeding?						
	50.0 (62.8)	28.8 (48.4)	49.2 (73.4)	44.7 (67.7)	37.7 (70.3)	33.3 (65.4)
	16.7 (20.9)	11.5 (19.4)	10.2 (15.2)	14.2 (21.5)	13.0 (24.3)	11.8 (23.1)
n't know/Declined	13.0 (16.3)	19.2 (32.3)	7.6 (11.4)		2.9 (5.4)	5.9 (11.5)
n whom did you receive that information about complementary feeding for the first time?						
ther	1.9 (3.4)	3.8 (12.5)	3.4 (6.9)	1.4 (3.2)	2.9 (7.7)	
er relative	1.9 (3.4)		2.5 (5.2)	0.7 (1.6)	1.4 (3.8)	2.0 (5.9)
mmunity member	18.5 (34.5)	5.8 (18.8)	2.5 (5.2)	4.3 (9.5)	1.4 (3.8)	2.0 (5.9)
ditional birth attended	1.9 (3.4)			0.7 (1.6)		
lth professional	5.6 (10.3)	7.7 (25.0)	11.9 (24.1)	17.7 (39.7)	29.0 (76.9)	19.6 (58.8)
ff from NGO	16.7 (31.0)	7.7 (25.0)	28.0 (56.9)	17.7 (39.7)	1.4 (3.8)	5.9 (17.6)
ff from government	5.6 (10.3)	3.8 (12.5)			1.4 (3.8)	
n't know/Declined		1.9 (6.3)				

Basic knowledge of child health

Parents were also asked about their basic knowledge about child health. Most of the parents reported that immediate medical care was needed if their child became feverish. Fever and diarrhoea were the two most frequently mentioned diseases by parents across the provinces.

Table 20 Parents' basic knowledge of child health in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
s of symptoms to seek medical care right away						
d not able to drink or stfeed	1.8	1.9	9.1	5.2	1.1	
d becomes sicker		5.8	4.2	9.2	6.7	5.1
d develops a fever	70.9	67.3	52.4	58.0	71.9	67.8
d has fast breathing	7.3	5.8	9.1	9.8	9.0	5.1
d has difficulty breathing	7.3		11.2	6.9	4.5	5.1
d has blood in stool			0.7	1.1		

d is drinking poorly						
n't know/Declined	3.6	5.8	0.7		1.1	
mon diseases for young children younger than 6 years old						
laria	5.5	19.2	5.6	6.9	1.1	8.5
gue		1.9	11.9	16.1	9.0	18.6
rrhoea	34.5	28.8	23.1	26.4	16.9	
n disease	12.7	32.7	6.3	1.7	2.2	3.4
dache/fever	29.1		33.6	27.6	31.5	32.2
mach-ache	1.8	1.9	1.4	2.9	10.1	1.7
umonia	5.5		3.5	2.9	16.9	13.6
ath disease			4.2	2.3	3.4	10.2
n't know/Declined			2.8	4.0	1.1	3.4

Child Health status

Parents were asked about the actions they take when their children are sick. Most parents reported that they give more water to the sick child. Some parents give more food to the sick child to eat, while some give less. Health centres were reported as important across all three provinces for families to get useful advice when their children are sick.

Table 21 Actions and help-seeking when children were sick in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
g water to sick child						
e nothing to drink		1.9	0.7			1.7
e less to drink	25.5	11.5	3.5	5.2	16.9	20.3
e the same amount to drink	14.5	21.2	21.0	36.2	36.0	25.4
e more to drink	56.4	57.7	73.4	55.2	44.9	52.5
n't know/Declined	3.6	5.8	1.4	3.4	2.2	
g food to sick child						
e nothing to eat	1.8	5.8	2.1	0.6	2.2	5.1
e less to eat	41.8	42.3	4.9	14.4	36.0	37.3
e the same amount to eat	10.9	21.2	25.2	35.6	39.3	37.3
e more to eat	41.8	26.9	66.4	47.1	20.2	18.6
n't know/Declined	3.6	1.9	1.4	2.3	2.2	1.7
place to get advice when child is sick						
lth centre	81.8	76.9	87.4	81.0	61.8	55.9
rmacy	1.8	5.8	0.7	1.1	2.2	
ate clinic	5.5	3.8		10.9	31.5	33.9
p						1.7
pital	1.8		11.9	5.7	3.4	6.8
ditional healer		5.8				
mmunity health volunteer						1.7
n't know/Declined		1.9		0.6		

Parents were further asked about diseases their children had suffered from recently, as well as the treatment they provided. Around half of the parents in each province reported that their children had suffered from fever in the last few days and around 10 to 20 percent of the children had experienced coughing. The majority of parents in each province reported that they would take their sick child to the health centre and some reported that they would look after the child at home. Around one-third of the parents in the control group of Ratanakiri reported that they would pray to the spirit for their sick child.

Table 22 Child disease and treatment in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ase in the last few days						
rrhoea	21.8	11.5	14.0	14.4	7.9	8.5
er	49.1	42.3	53.1	47.7	40.4	45.8
ghing	18.2	21.2	12.6	16.1	21.3	22.0
mach ache	3.6	1.9	4.9	4.6	9.0	5.1
dache		5.8	1.4	2.9	3.4	
n't know/Declined	3.6	13.5	0.7	1.7		
tment for the child						
hing	1.8	1.9		1.1		
e care at home	10.9	5.8	6.3	15.5	12.4	11.9
e to the health centre	70.9	36.5	88.1	70.7	75.3	69.5
e to traditional healer		1.9		0.6		
y to the spirit	5.5	32.7				
n't know/Declined	3.6	9.6	0.7	1.7		1.7

In Siem Reap and Tbong Khmum, almost all children had received vaccinations, although only around 25% of the parents in the control group of Ratanakiri were able to present a yellow card and the rate of children in the control group in Ratanakiri receiving vaccinations was about 70%. Those who reported they had vaccinations for their children were also asked about specific vaccinations. We found that there were still some children who have not received particular types of vaccinations. The situation was relatively better in Tbong Khmum and Siem Reap than in Ratanakiri (particularly among control group parents and children). In all provinces, the vaccination rate of JE was the lowest compared with the percentages of children who received other types of vaccinations. Few parents provided reasons for not having all vaccinations for their children. But among the valid responses, issues related to the time available for vaccinations and their understanding of the importance of vaccinations were reported.

Table 23 Child vaccination in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
inations						
	90.9	69.2	98.6	99.4	98.9	100.0
	9.1	26.9	0.7	0.6	1.1	
n't know/Declined		1.9	0.7			
place to get vaccinations						
reach activities	56.0	75.0	11.2	19.1	21.6	37.3
lth centre	42.0	22.2	83.2	78.6	78.4	62.7
pital	2.0	2.8	4.2	1.7		
ate clinic				0.6		
n't know/Declined						
ther having a yellow card						
, see it	45.5	25.0	85.3	87.4	93.3	91.5
, not see it	36.4	36.5	12.7	11.5	5.6	8.5
	5.5	1.9	0.7	0.6		
n't know/Declined	3.6	3.8				
inations received (for those having received vaccinations)						
G	78.0	69.4	97.2	97.1	97.7	98.3
oB Birth Dose	40.0	38.9	87.2	91.9	93.2	94.9

/1	76.0	61.1	95.0	94.2	100.0	94.9
/2	58.0	52.8	90.1	90.8	93.2	91.5
/3	56.0	38.9	84.4	89.0	89.8	88.1
- HepB-Hib1	68.0	58.3	92.9	93.6	97.7	93.2
- HepB-Hib2	56.0	52.8	88.7	90.8	92.0	89.8
- HepB-Hib3	52.0	38.9	86.5	86.7	88.6	86.4
asles	48.0	33.3	75.2	74.6	86.4	83.1
	22.0	13.9	51.1	44.5	78.1	83.1
reasons for not receiving all vaccinations (for those not receiving all vaccinations)						
time to go		5.6	7.1	2.3	2.3	1.7
n't know when to go	8.0	8.3	6.4	9.8	2.3	
lth centre was closed	2.0			0.6		
cinations will make the child		2.8	0.7	2.9	2.3	
ugh the child had obtained accinations	2.0	2.8	4.3	2.3		1.7
money			2.1	2.3		
n't know/Declined	8.0	5.6	9.9	9.8	2.3	

Maternal Health (last pregnancy)

Parents (mothers) were asked about their experiences during their most recent pregnancy. The following table presents information related to mothers' reported antenatal care visits during their most recent pregnancy. More than half of the parents reported that they received antenatal care from health professionals, with as many as 82% of mothers in the experimental group in Ratanakiri having received antenatal care. Among those who saw professionals for antenatal care, mothers in Ratanakiri and Siem Reap were more likely to see midwives than a female nurse, whereas those in Tbong Khmum were more likely to see female nurses then midwives. This indicates that, across different provinces, different sets of health workers are likely to work closely with parents and community members.

All parents except those in the control group of Ratanakiri reported that, during antenatal care visits, they tended to receive information on pregnancy-related danger signs, nutrition intake during pregnancy and important micro-nutrients during pregnancy. Only around half of the mothers reported that they took iron tablets during last pregnancy, although the rate was notably higher among mothers in the experimental group in Ratanakiri than that in all other groups. Among the mothers who had ever taken iron tablets, most of them took 90 tablets. The weight gained during pregnancy varied among groups. But more than 70% of the mothers in the control group in Ratanakiri could not provide exact information on the relevant information.

Table 24 Maternal health during last pregnancy in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ther or not saw health professional for antenatal care						
	81.8	44.2	63.6	55.7	50.6	50.8
	14.5	32.7	36.4	0.6	1.1	49.2
n't know/Declined						
person you saw (for those having seen the health professionals)						
lwife	57.8	87.0	69.2	77.3	31.1	33.3
ctor			4.4			
nale nurse	40.0	4.3	19.8	20.6	66.7	66.7
le nurse			1.1		2.2	
ditional birth attendant	2.2	8.7	2.2			
n't know/Declined			2.2	1.0		
th information received during antenatal care visit (for those having seen the health professionals)						

gnancy-related danger signs	33.3	17.4	30.8	30.9	37.8	30.0
rition intake during nancy	31.1	17.4	40.7	40.2	33.3	50.0
nily planning	2.2	4.3	4.4	1.0	2.2	3.3
ro-nutrients during nancy	13.3	30.4	9.9	18.6	17.8	13.3
iative and exclusive stfeeding	8.9		8.8	8.2	4.4	
child deliver by skilled birth ndant	8.9	21.7	2.2	1.0	4.4	3.3
ther or not took iron tablets						
	81.8	34.6	63.6	54.0	51.7	50.8
	14.5	34.6		0.6		
n't know/Declined		7.7				
many iron tablets taken? (for those taking iron tablets)						
tablets	76.5	20.0	96.6	93.6	90.7	100.0
	8.8					
n't know/Declined	14.7	80.0	3.4	6.4	9.3	
ght gained during last pregnancy						
n't gain weight	3.6	1.9	0.7	2.3	2.2	1.7
s than 3kg	25.5		17.5	12.6	13.5	8.5
kg	16.4		23.1	25.3	13.5	22.0
kg	9.1		10.5	1.7	4.5	1.7
12kg	7.3		2.8	4.0	6.7	6.8
15kg	1.8		0.7	1.7	3.4	10.2
re than 15kg		1.9	0.7	1.1	4.5	
n't know/Declined	30.9	73.1	6.3	6.3	3.4	

Mothers were also asked about information on their last delivery. In Ratanakiri, most parents reported that they delivered the child participating in this study at home and with the help of traditional birth attendants. But in Siem Reap and Tbong Khmum, parents were more likely to deliver the child with the help of midwives or female nurses and to give birth to children at health centres or hospitals. More than half of the parents reported that the child weighed more than 2.5kg at birth. In all provinces, the rates of receiving post-natal care were less than 50% and the percentage was particularly low for the control group in Ratanakiri. The majority of the mothers who received post-natal care in Ratanakiri and Siem Reap reported that they went to the midwives for post-natal care services. While most parents in Tbong Khmum, again, reported going to nurses for post-natal support.

Table 25 Information of mothers' last delivery in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
person who assisted with the delivery						
sehold member	1.8	1.9		44.3	1.1	
er relative/friend	1.8					
wife	20.0	7.7	52.4		23.6	28.8
tor			2.1	1.7	4.5	1.7
nale nurse			7.7	5.2	22.5	20.3
e nurse						
ditional birth attendant	70.9	67.3	1.4	4.0		
n't know/Declined						
place to give birth						
nome	81.8	69.2	2.8	4.0		

lth centre	10.9	3.8	46.9	43.7	38.2	39.0
pital	3.6	3.8	12.6	5.7	10.1	1.7
ate clinic				1.1	3.4	8.5
n't know/Declined						
's weight at birth						
s than 2.5kg	5.5	3.8	2.8	4.6	3.4	1.7
re than 2.5kg	34.5	73.1	60.1	47.1	47.2	49.2
n't know/Declined	54.5		0.7	2.9	1.1	
ou receive post-natal care?						
	43.6	9.6	47.6	42.5	31.5	23.7
	47.5	65.4	15.4	22.1	20.2	53.3
n't know/Declined	5.5	1.9				
whom did you receive post-natal care?						
lwife	62.5	60.0	77.9	74.3	39.3	14.3
tor			5.9		3.6	21.4
nale nurse	29.2	20.0	16.2	18.9	53.6	64.3
le nurse	4.2			2.7	3.6	
ditional birth attendant	4.2	20.0		2.7		
n't know/Declined						

Nutrition of children (all children younger than 5 years old)

Parents reported that their children ate from one time to 15 times a day with the mean of around three times in all provinces. The most frequently provided medicine supplement given to young children was Vitamin A and medicine to treat worms. The percentages of children who did not receive any medicine in the last 6 months were higher in Ratanakiri than in Siem Reap and Tbong Khmum (see Table 26). Around 60% to 80% of parents in Siem Reap and Tbong Khmum reported that they could track their children's growth. However, this percentage in Ratanakiri was low, especially for the parents in the control group (13.5%). For those who stated that they knew whether their children grew well, they were most likely to base their knowledge on daily observations (such as eating) and information from the yellow card.

Table 26 Nutrition of children in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
icine / supplement given to child						
mmin A	34.5	13.5	45.5	44.3	46.1	61.0
S	16.4	7.7	13.3	13.2	11.2	6.8
c tablet	3.6	3.8	7.7	5.7	4.5	3.4
ronutrient powder	3.6		2.8	3.4	14.6	5.1
dicine to treat worms	18.2	15.4	21.7	14.9	13.5	8.5
ne	23.6	59.6	7.7	17.8	9.0	15.3
ou know whether your child grows well or not?						
	41.8	13.5	69.2	59.2	67.4	76.3
	57.4	86.5	30.8	40.8	32.6	20.4
helps to see how child grows (for those stating they knew whether child grew well or not)						
ow card	30.4	42.9	44.4	35.0	30.0	13.3
lth staff only informed ng immunization	17.4		11.1	17.5	8.3	26.7
er	52.2	57.1	34.3	41.7	61.7	56.8
n't know/Declined			10.1	4.9		2.3

Module 3: Knowledge and practice of early stimulation learning and protection of children aged under 6

(Key family practice included here: Psychosocial development)

Birth registration

For the youngest children (aged 0-1), parents reported on various issues related to birth registration and confirmation (see Table 27). All children aged 0-1 in the control group of Ratanakiri were not registered and only 30% of 0-1-year-olds in the experimental group of Ratanakiri were registered. The percentages in Siem Reap and Tbong Khmum were much higher but there were still reportedly about 20-30% unregistered children. The percentages of children having a birth confirmation were even lower in all three provinces (lower than 25%). For those reported as not having a birth certificate, their explanations for not having their children registered including cost issue (too expensive), logistic issues (too far), service issues (tried but no one there), and their limited awareness of birth registration (did not know the birth should be registered, did not know where to register), and some un-listed reasons, such as too busy, do not want to do so, no one in the commune helped etc.

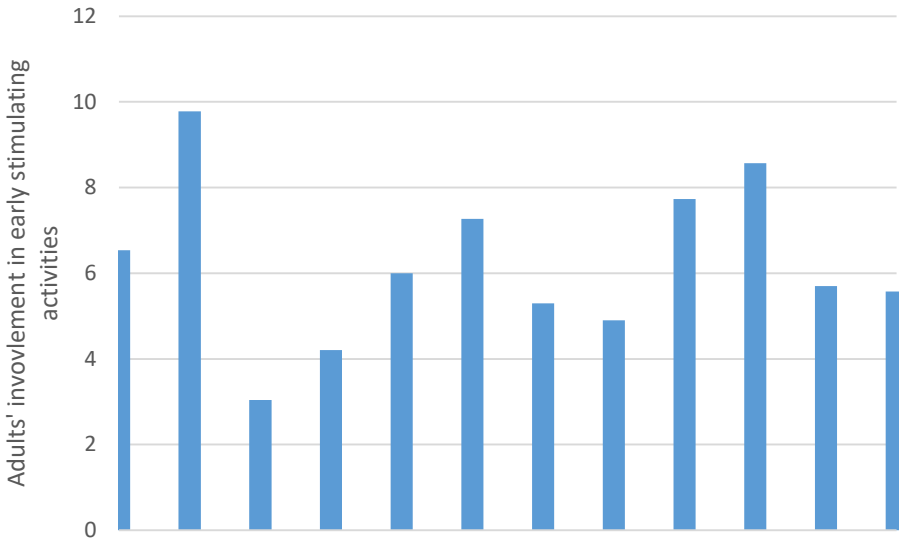
Table 27 Birth registration in three provinces

	Ratanakiri (n=17)		Siem Reap (n=51)		Tbong Khmum (n=23)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
e a birth certificate or not?						
, birth registration within 30 after birth and seen	20.0		57.7	64.0	69.2	60.0
, birth registration after 30 after birth and seen	10.0		38.5	12.0	15.4	10.0
birth registration	70.0	100.0	3.8	24.0	15.4	30.0
n't know/Declined						
e a birth confirmation or not?						
, seen	10.0		7.7	12.0	23.1	20.0
, not seen			11.5			
birth confirmation						
n't know/Declined				4.0		
ons for not having a birth certificate (for those reported as not having a birth certificate)						
expensive	14.3	28.6				
far		14.3				33.3
d but no one there				16.7	100.0	
not know it should be tered		42.9		16.7		66.7
not want to pay fine				16.7		
s not know where to register						
important						
er	71.4	14.3		50.0		
n't know/Declined	14.3					

Early childhood stimulation

Parents were asked whether or not mother, father, and other family members were involved in any of 10 identified positive practices with children at home. A score (max=30) showing adults' involvement in all these practices was created. As shown in Figure 26, in all provinces, parents in the experimental group were more likely to adopt these activities than those in the control group (Ratanakiri: $F(1, 101) = 21.56$, $p = .000$; Siem Reap: $F(1, 309) = 18.09$, $p = .000$; Tbong Khmum: $F(1, 142) = 25.70$, $p = .000$). Parents in Ratanakiri were more likely to play with children aged 3-5 than with 0-3-year-olds but no differences were found between the activities provided to children aged 0-3 and 3-5 in the other two provinces (Ratanakiri: $F(1, 101) = 5.09$, $p = .026$; Siem Reap: $F(1, 309) = 1.46$, $p = .228$; Tbong Khmum: $F(1, 142) = 0.52$, $p = .471$).

Figure 25 Adults' involvement in stimulation activities with children



Parents were further asked the details of their involvement. As shown in Table 28, the majority of the parents reported that they played with the child in the last 3 days and the percentages are higher in Siem Reap and Tbong Khmum than in Ratanakiri. Among these parents, most parents played with their children 1 to 4 times in the last 3 days. They played different activities with children. Parents in Ratanakiri were more likely to use home-made toys and household objects while parents in Siem Reap and Tbong Khmum tended to use home-made toys or manufactured toys.

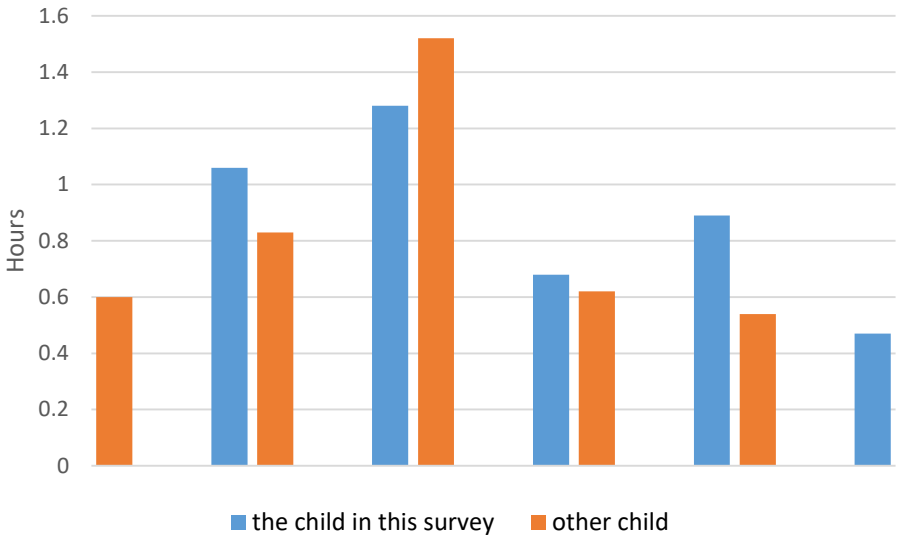
Table 28 Details of parents' involvement in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ed with the child in the last 3 days						
	78.2	57.7	93.0	86.8	95.5	89.8
	21.8	38.5	7.0	13.2	4.5	10.2
n't know/Declined		3.8				
uency of parents' involvement in the last 3 days						
r 2 times	14.0	43.3	32.3	27.8	34.1	39.6
r 4 times	44.2	30.0	46.6	60.3	48.2	35.8
r 6 times	9.3	6.7	6.0	1.3	4.7	3.8
re than 6 times	32.6	16.7	14.3	10.6	12.9	20.8
n't know/Declined		3.3	0.8			
vities involved in the last 3 days						
ing him/her outside the e	25.6	20.0	23.3	30.5	22.4	18.9
wing	18.6		9.8	5.3	10.6	7.5
ying a game	14.0	20.0	36.8	31.8	34.1	37.7
pping hands	23.3	23.3	13.5	12.6	18.8	15.1
-a-boo	4.7	30.0	12.8	15.9	11.8	15.1
played with the child						
me-made toys	44.2	53.3	51.1	49.0	36.5	41.5
s from a shop or ufactured toys	20.9	10.0	21.1	39.1	51.8	26.4
sehold objects	34.9	36.7	27.8	11.9	11.8	32.1

Care and development

As shown in Figure 27 below, the average time that parents left their young child at home alone varied among the three provinces.

Figure 26 Length of time parents left children at home alone in three provinces



Parents were also asked about their understanding of child learning and development. As shown in Table 29 below, most parents believed that children start to have emotions and sentiment between 6 to 11 months and children start to learn to repeat and imitate between 6 to 11 months. However, higher numbers of parents in experimental groups in Siem Reap and Tbong Khmum acknowledge that babies aged 0-5 months also can recognise emotions.

Table 29 Parents' understanding of child learning and development in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
age when a child starts to have emotions and sentiment						
months	14.5	19.2	21.7	6.9	32.6	15.3
1 months	30.9	30.8	48.3	44.8	42.7	30.5
years	32.7	17.3	14.0	19.5	12.4	28.8
years	12.7	19.2	11.2	21.3	7.9	22.0
er than 5 years	1.8	3.8	2.1	3.4	3.4	1.7
't know/Declined	5.5	9.6	2.8	3.4	1.1	1.7
age when a child starts to learn to repeat/imitate						
months	1.8	7.7	7.7	1.7	29.2	10.2

1 months	20.0	19.2	46.9	41.4	31.5	50.8
years	34.5	26.9	28.0	14.4	28.1	18.6
years	29.1	19.2	14.0	32.2	9.0	16.9
er than 5 years	5.5	11.5	2.1	5.2	1.1	
n't know/Declined	9.1	15.4	1.4	4.6	1.1	3.4

Child discipline

Around half of the parents reported that they would show love or hug children to make them stop crying. However, around 20% of parents reported that they scold, spank or yield to children in such situations. When children did not listen or do something wrong, around half of the parents reported that they would explain to children what they did wrong. However, the percentage was low in the control group of Ratanakiri (11.5%). Similarly, a high number of parents reported that they shout or slap children and the percentage was relatively higher in the control group of Ratanakiri (32.7% for shouting and 34.6% for slapping). Parents reported other strategies to make children stop crying and responses when children do something wrong, including giving cakes to the child, taking children somewhere else, breastfeeding children, etc. Around half of the parents reported that they had argued with their spouse in front of children.

Table 30 Child discipline in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ons to make child stop crying						
e/hug	41.8	46.2	68.5	63.0	65.2	81.4
ore/Nothing		7.7		0.6		
t/scold	7.3	5.8	2.1	6.9		5.1
d to demand	7.3	15.4	21.0	13.8	16.9	1.7
e to the doctor			2.8	0.6	1.1	
what is wrong	5.5		1.4	2.3	3.4	1.7
er	38.2	25.0	4.2	12.6	13.5	10.2
n't know/Declined						
ons when child does not listen or does something wrong						
ut/scold	12.7	32.7	18.2	24.7	11.2	16.9
p/Hit with hand	12.7	34.6	7.7	17.2	5.6	15.3
t with an object	9.1	7.7	8.4	6.9	7.9	5.1
lain them what they did ng	47.3	11.5	52.4	39.1	59.6	40.7
er	16.4	7.7	9.1	9.8	15.7	22.0
n't know/Declined	1.8	5.8	4.2	1.7		
nts argue in front of children						
often	3.6	21.2	2.1	5.2	4.5	5.1
sometimes	50.9	50.0	42.7	50.0	38.2	39.0
never	45.5	28.8	48.3	43.1	55.1	50.8
n't know/Declined			7.0		2.2	5.1

Accidents and injuries

Less than half of the parents reported that the child participating in this study had ever had an accident. Among them, most children had cut themselves, or fallen from a tree, bicycle, or house. Parents usually warned children about dangers or supervised them while playing to prevent children from being injured (see Table 31).

Table 31 Child accidents and injuries in three provinces

	Ratanakiri (n=107)	Siem Reap (n=317)	Tbong Khmum (n=148)

	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ory of having an accident						
	43.6	63.5	36.4	43.7	34.8	50.8
	54.5	34.6	63.6	55.7	64.0	49.2
n't know/Declined	1.8	1.9				
ils of last accident (for those having an accident)						
him/herself with a sharp ct	33.3	60.6	34.6	36.8	23.3	3.3
from tree/bicycle/house	20.8	21.2	30.8	34.2	41.9	26.7
in the water	4.2		3.8	1.3		
ffic accident	4.2	3.0	1.9	2.6	6.5	3.3
ned him/herself	16.7	9.1	19.2	5.3	3.2	13.3
er	16.7	6.1	7.7	19.7	22.6	46.7
n't know/Declined	4.2		1.9			
ons to prevent accidents						
rn them about dangers	32.7	42.3	28.0	23.6	22.5	18.6
ervise them while playing	30.9	36.5	44.8	39.7	55.1	50.8
n't leave them alone	7.3		9.1	17.8	14.6	22.0
sharp objects	14.5	5.8	11.9	7.5	6.7	5.1
p away from water	1.8	1.9	4.2	1.1	1.1	
er	3.6	1.9	0.7	1.1		
n't know/Declined	9.1	11.5	1.4	8.6		3.4

Early childhood education and protection for preschool aged children

In this section, we only select those aged 3-5 in the analyses. Not surprisingly, almost all parents in the experimental group reported there was a preschool in their village and most of the parents in the control group reported that there was not a preschool in their village. Among those who reported the existence of a preschool in their villages, most of the preschools were community preschools (CPS). Some parents in the control group of Siem Reap reported that there were preschools in their villages and there were more state preschools than community preschools in those villages. The average distance of the closest preschool from the house in different groups were as follows: 6.73km for the control group of Ratanakiri, 1.27km for the experimental group of Ratanakiri, 2.38km for the control group of Siem Reap, 1.46km for the experimental group of Siem Reap, 4.56km for the control group of Tbong Khmum, and 3.12km for the experimental group of Tbong Khmum. Most children in the experimental groups had attended preschool while most in the control groups had not. The most frequently mentioned obstacle for not ever sending children to preschool by parents was the unavailability of preschool in their area. For those who did report sending their children to preschool, they usually sent their children to preschool at three years old.

Table 32 Preschools in the village and attendance history in three provinces

	Ratanakiri (n=56)		Siem Reap (n=165)		Tbong Khmum (n=79)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
chool in village						
	92.6		97.2	22.3	95.5	2.9
		82.8		68.1		74.3
n't know/Declined				1.1		
of preschool (for those having a preschool in their village)						
te preschool			8.7	52.4	4.8	
mmunity preschool	96.0		82.6	33.3	95.2	100.0
ate preschool						
O program providing chool activities						

er						
n't know/Declined	4.0		8.7	14.3		
ory of preschool attendance						
	77.8	6.9	97.2	13.8	68.2	2.9
	14.8	62.1		74.5	25.0	68.6
n't know/Declined		20.7				2.9
ons for never in a preschool (for those never in a preschool)						
d too young to learn	50.0	11.1		17.4	9.1	12.5
available in my area/too far y	25.0	83.3		37.7	72.7	83.3
expensive						
time to bring and collect				18.8	9.1	
r quality						
er				23.2		4.2
n't know/Declined	25.0					
to participate in preschool (for those ever in a preschool)						
nger than 3	4.8		5.8			
ears	9.5	50.0	63.8	46.2	33.3	100.0
ears	47.6		20.3	23.1	36.7	
ears	9.5		10.1	30.8	16.7	
er than 5	23.8	50.0			13.3	
n't know/Declined						

Some parents in the control group reported that their children were currently in preschool and some parents in the experimental group reported that their children were currently not enrolled in a preschool (see Table 33). In terms of reasons for not sending children to preschool, parents did not give concrete answers.

Table 33 Preschool attendance in three provinces

	Ratanakiri (n=56)		Siem Reap (n=165)		Tbong Khmum (n=79)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ent in preschool						
	88.9	3.4	95.8	8.5	86.4	
	7.4	58.6	1.4	67.0	9.1	40.0
n't know/Declined		3.4				
ons for not in a preschool (for those currently not enrolled in preschool)						
teachers		5.9		11.1		
ool/project closed				6.3		
expensive						
d doesn't learn hing/enough				1.6		
d doesn't like to go				6.3	75.0	
time bring and collect				27.0		
er				36.5		
n't know/Declined				9.5		7.1

Parents were asked about their knowledge regarding the local preschool. Most parents in the experimental groups had better knowledge of preschools' opening time and were likely to comment that the preschool has friendly teachers, while those in the control groups unsurprisingly showed little knowledge about preschool. Parents in Siem Reap and Tbong Khmum were more likely to report that their preschools had a variety of toys than those in Ratanakiri (see Table 34). This finding supports observations 'on the ground' provided by data collectors, who also indicated that the preschool was not well resourced in Ratanakiri.

Table 34 Parents' knowledge about preschool in three provinces

	Ratanakiri (n=56)		Siem Reap (n=165)		Tbong Khmum (n=79)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
e preschool open regularly?						
, always open	88.9	3.4	84.5	23.4	90.9	2.9
, sometimes open			11.3	2.1	2.3	2.9
closed a lot of days				3.2		
always closed				5.3		
n't know/Declined	3.7	69.0	1.4	40.4	2.3	5.7
e teacher friendly and actively playing with children?						
	88.9	3.4	87.3	27.7	93.2	5.7
			1.4	1.1		2.9
n't know/Declined	7.4	69.0	5.6	43.6	2.3	2.9
the preschool have a variety of toys?						
	33.3	3.4	73.2	19.1	86.4	2.9
	37.0		7.0	8.5	2.3	2.9
n't know/Declined	18.5	69.0	14.1	44.7	4.5	2.9
staff of preschool friendly and do they respect you?						
	77.8	3.4	81.7	19.1	84.1	5.7
	3.7		5.6	5.3		5.7
n't know/Declined	14.8	69.0	5.6	43.6	4.5	11.4

Parents were asked about their understanding of protection of children at the preschool. Parents in the control group had limited knowledge about this and a large number of parents in the control group did not provide valid answers. Parents in the experimental groups had better knowledge about this issue. The majority of them believed that preschool was safe for children to learn and play and the preschool had a safe playground. Most parents in the experimental group of Ratanakiri and Siem Reap responded that there were no open ponds or wells on the preschool grounds while only half of the parents in the experimental group of Tbong Khmum thought so. Most parents did not hear of a child having an accident at the preschool and they believed that the teacher was capable of managing the children well at preschool.

Table 35 Child protection in preschool in three provinces

	Ratanakiri (n=56)		Siem Reap (n=165)		Tbong Khmum (n=79)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ou think the preschool is safe for children to learn and play?						
	70.4	3.4	91.5	26.6	88.6	2.9
	25.9	6.9	4.2	8.5	6.8	
n't know/Declined		48.3	1.4	38.3		5.7
the preschool have a safe playground						
	70.4	3.4	87.3	22.3	84.1	2.9
	18.5	6.9	5.6	11.7	11.4	
n't know/Declined	7.4	48.3	2.8	38.3		5.7
here any open ponds or wells on the preschool grounds?						
	18.5		21.1	11.7	54.5	
	77.8	6.9	74.6	21.3	36.4	2.9
n't know/Declined		41.4	1.4	40.4	4.8	5.7
ou ever hear of a child having an accident at the preschool?						
	11.1		16.9	11.7	22.7	

	81.5	6.9	77.5	23.4	65.9	2.9
n't know/Declined		41.4	1.4	37.2	6.8	5.7
e teacher capable to manage the children well at preschool?						
	85.2	3.4	84.5	17.0	86.4	2.9
		3.4	9.9	5.3	4.5	
n't know/Declined	11.1	41.4	1.4	50.0	2.3	5.7

In all three provinces, parents in the experimental groups gave a higher evaluation of early childhood education and early stimulating activities than those in the control groups. They primarily believed that education for young children and early stimulating activities were important or very important for children. A large number of parents in the control groups did not provide evaluations. Those who reported that early childhood education was not so important were further asked about the reasons. Although limited valid answers were provided, they were more likely to consider young children should stay with their mother or stay at home. For those who considered ECE as important, most of them believed that children would be smart or do better at preschool.

In terms of reasons for considering early stimulation activities as unimportant, these parents did not provide concrete responses. Some thought that children were too young and some thought those activities were a waste of money. The reasons raised by most of the parents who consider that interaction with children is important were that they believed that children would be smart and would be a good child if parents interact with their children.

When asked about their understanding of early stimulation after CPS (preschool) was introduced, the majority of parents in the experimental groups reported that they thought early childhood education and early stimulation was more important than they had before, but there were still a few who reported it as being less important than before. Only a very limited number of parents in the control group provided concrete answers to these questions and among those explicit answers, most of which were from the control group of Siem Reap, around one-third felt early childhood education and early stimulating more important than before and 10% felt that it was less important than before.

Table 36 Parents' evaluations of early childhood education and early stimulation activities in three provinces

	Ratanakiri (n=56)		Siem Reap (n=165)		Tbong Khmum (n=79)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ortance of education for children under 6 years old						
important at all		6.9	1.4		2.3	2.9
so important	3.7			4.3		
normally		17.2	14.1	16.0	6.8	8.6
ortant	44.4	37.9	66.2	54.0	34.1	11.4
y important	48.1	13.8	15.5	13.8	50.0	28.6
ons for the unimportance of education for children under 6 years old (for those thinking ECE as unimportant)						
ste of money						
not learn/waste of time				5.3		
ng children should stay with mother			18.2	26.3		25.0
ng children should stay at e						25.0
er		14.3			25.0	25.0
n't know/Declined	100.0	85.7	18.2	47.4		
ons for the importance of education for children under 6 years old (for those thinking ECE as important)						
dren will be smart	68.0	46.7	43.1	56.3	37.8	28.6
dren will do better at school	16.0	33.3	34.5	28.1	45.9	64.3
dren will be a good child	12.0		20.7	14.1	13.5	
er		6.7			2.7	
n't know/Declined		13.3	1.7			

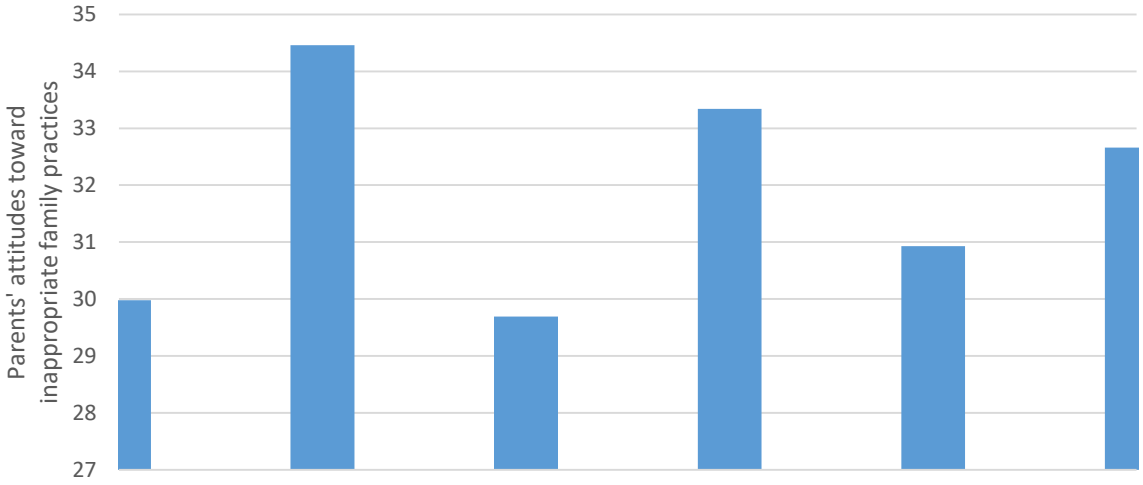
ortance of education for interact with young children						
important at all		3.4			4.5	
so important		3.4		2.1	2.3	
normally		17.2	9.9	13.8	4.5	2.9
ortant	55.6	44.8	71.8	55.3	36.4	8.6
y important	37.0	6.9	14.1	17.0	47.7	40.0
ons for the unimportance of interacting with children (for those thinking interacting with children as portant)						
ste of money				13.3		
dren shouldn't play too n						
dren doesn't understand		14.3		13.3		
er		14.3			20.0	20.0
n't know/Declined		57.1	42.9	53.3		
ons for the importance of interacting children (for those thinking interacting with children as important)						
dren will be smart	56.0	40.0	45.9	54.4	43.2	58.8
dren will be a good child	32.0	26.7	32.8	29.4	43.2	35.3
wing love	4.0	6.7	14.8	11.8	8.1	5.9
er		13.3			2.7	
n't know/Declined	4.0	13.3	4.9	1.5	2.7	
erstanding of the importance of ECE						
re important	88.9	6.9	80.3	31.9	93.2	
s important	3.7		11.3	12.8		
ne as before			5.6	1.1		
n't know/Declined		48.3		27.7	2.3	2.9
erstanding of early stimulation interaction (since CPS was introduced)?						
re important	85.2	6.9	76.1	33.0	90.9	
s important	3.7		14.1	10.6	4.5	
ne as before			5.6	2.1		
n't know/Declined		48.2		29.8		2.9

Module 4: Attitudes towards and perceptions of ECCD, ECE and key family practices

Key family practices

Parents were asked about their attitudes towards a list of parenting practices. The practices listed would normally be considered to be inappropriate for parents and children. A score was created with a higher score representing a higher level of agreement with these inappropriate practices from the parents. ANOVAs showed that in Ratanakiri and Siem Reap, parents in the control group were significantly more likely to agree with these inappropriate family practices than those in the experimental group (Ratanakiri: $F(1, 99) = 16.60$, $p = .000$; Siem Reap: $F(1, 305) = 18.03$, $p = .000$; Tbong Khmum: $F(1, 145) = 1.67$, $p = .199$).

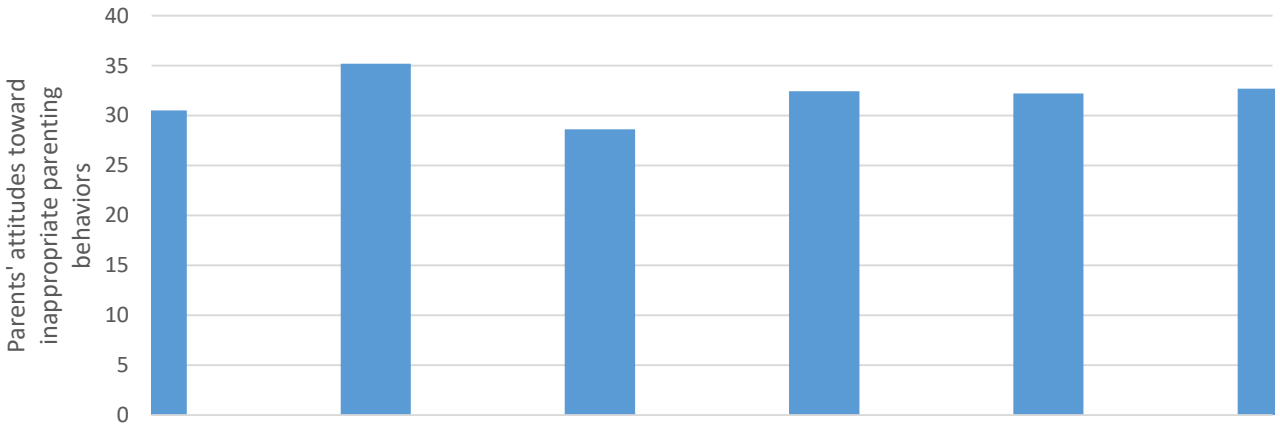
Figure 27 Parents' key family practices in three provinces



Early childhood care and development

Parents were asked their attitudes towards parenting, through responses to 13 statements reflecting what would be considered to be inappropriate parenting behaviours. One variable was created based on parents' response on each statement and a higher score meant a higher level of agreement with these inappropriate practices from parents. Similarly, parents in the experimental groups of Ratanakiri and Siem Reap had a lower level of agreement than parents in the control groups but no differences were found between the experimental and control groups of Tbong Khmum (Ratanakiri: $F(1, 99) = 12.92$, $p = .001$; Siem Reap: $F(1, 288) = 28.56$, $p = .000$; Tbong Khmum: $F(1, 143) = 0.14$, $p = .710$).

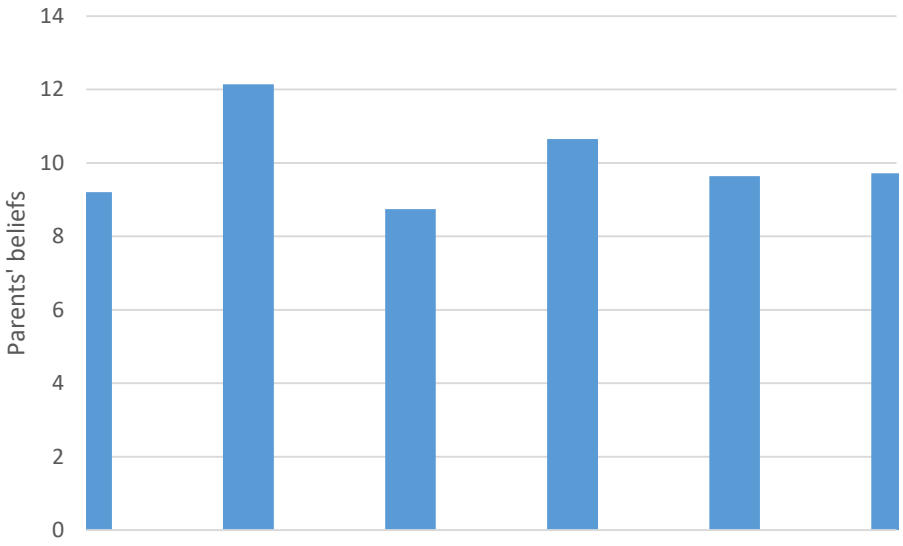
Figure 28 Parents' attitudes toward early childhood care and development in three provinces



Early childhood education

Parents were asked about their attitudes toward early childhood education through responses to four inappropriate statements on early childhood education. A variable was created to reflect the level of parents' agreement with these statements, with a higher score showing a higher level of agreement with these inappropriate statements. Again, parents in the experimental groups of Ratanakiri and Siem Reap had a lower level of agreement with these statements than parents in the control groups, but no differences were found between the experimental and control groups of Tbong Khmum (Ratanakiri: $F(1, 103) = 18.74$, $p = .000$; Siem Reap: $F(1, 308) = 24.31$, $p = .000$; Tbong Khmum: $F(1, 144) = 0.02$, $p = .899$).

Figure 29 Parents' beliefs about early childhood education in three provinces



When asked about the characteristics of preschools that are important for preschool selection, parents in all provinces tended to agree or strongly agree that all these characteristics are important, except for their attitudes toward native language, where around 20% of Siem Reap parents' attitude was neutral (see Table 37).

Table 37 Parents' perceptions of characteristics of a good preschool in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ng songs						
ongly disagree				2.3	1.1	1.7
agree		1.9		2.3		
utral	1.8	9.6	9.8	9.2	3.4	13.6
ee	65.5	55.8	51.7	43.1	36.0	25.4
ongly agree	30.9	26.9	37.8	42.0	59.6	57.6
ving things						
ongly disagree				2.9	2.2	1.7
agree		1.9		1.7	1.1	
utral		7.7	8.4	11.5	2.2	6.8
ee	69.1	48.1	49.0	39.7	38.2	28.8
ongly agree	29.1	36.5	42.0	43.1	56.2	61.0
ng with other children						
ongly disagree	3.6			0.6	1.1	1.7
agree	3.6	3.8	0.7	2.3	3.4	1.7
utral		7.7	7.7	10.3	2.2	8.5
ee	65.5	48.1	49.7	41.4	37.1	23.7
ongly agree	25.5	32.7	41.3	44.3	56.2	62.7
er language						
ongly disagree				1.1	1.1	1.7
agree				2.3	1.1	
utral		5.8	5.6	6.9	1.1	5.1
ee	61.8	42.3	50.3	42.0	38.2	25.4

ongly agree	34.5	46.2	42.7	46.0	58.4	66.1
ve language						
ongly disagree	1.8		0.7	1.1	1.1	
agree	1.8			2.3	2.2	3.4
utral		5.8	25.9	19.5	1.1	6.8
ee	69.1	44.2	37.1	34.5	34.8	22.0
ongly agree	25.5	44.2	32.9	39.1	50.6	59.3
nting						
ongly disagree	1.8		0.7	1.1	2.2	1.7
agree				3.4		
utral	1.8	5.8	7.0	10.3	1.1	5.1
ee	60.0	44.2	49.7	39.1	34.8	27.1
ongly agree	34.5	44.2	42.0	44.8	61.8	64.4
ene						
ongly disagree	1.8			0.6		1.7
agree				1.7	1.1	
utral		7.7	4.2	9.2	1.1	1.7
ee	61.8	40.4	53.1	41.4	40.4	28.8
ongly agree	34.5	44.2	42.0	44.8	57.3	66.1
d habits						
ongly disagree	1.8			1.7	1.1	1.7
agree				1.1		
utral	1.8	9.6	4.9	8.6	2.2	1.7
ee	50.9	42.3	53.1	42.5	37.1	28.8
ongly agree	43.6	42.3	41.3	44.8	59.6	66.1

Module 5: Access to and quality of ECCD/ECE services and household involvement in ECCE/ECE services

Health centre/outreach program

Most parents reported that there was a health centre in the community. And most parents who reported the existence of a health centre in the community also reported that they had attended the centre. Among those who had not been to the centre, only a small number of parents gave concrete reasons and distance was mentioned most regularly as a barrier. The majority of parents considered the quality of the health centre as fine as more than 80% of the parents in all provinces rated the quality as normal, good, or very good (see Table 38). Most parents responded that they are always or sometimes treated with respect in the health centre and can always or sometimes understand the instructions got from the centre. Around 10% of parents in Ratanakiri reported that they never understood instructions from the staff at the health centre or outreach activities, indicating possible language or communication challenges.

Table 38 Information on health centres in the community in three provinces

	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
ealth centre in your community?						
	70.9	55.8	84.6	94.3	100.0	72.9
	27.3	28.8	14.7	5.2		27.1
't know	1.8	15.4		0.6		
been to the health centre (for those having a health centre in the community)						
	71.8	82.8	98.3	91.5	97.8	95.3
	25.6	10.3	1.7	7.9	2.2	4.7
't know/Declined	2.6	6.9		0.6		
ons for not been to the health centre (for those not been to the health centre)						

far away	70.0	66.7	50.0	46.2		
expensive	10.0	33.3		7.7		
time to go			50.0	7.7		50.0
ff unfriendly				7.7		
hygiene						
g waiting time						
staff/staff not around	10.0					
er				30.8	100.0	50.0
n't know/Declined	10.0					
ng of the quality of the health centre						
y bad		1.9	0.7	0.6	5.6	1.7
	16.4	7.7	4.2	2.3		
rmal	23.6	34.6	16.8	17.8	18.0	6.8
od	60.0	55.8	74.1	71.8	71.9	83.1
y good			3.5	7.5	4.5	8.5
he staff treat you with respect?						
ays	38.2	25.0	63.6	59.8	61.8	66.1
metimes	36.4	38.5	29.4	28.7	15.7	8.5
ver	23.6	9.6	4.9	8.0	22.5	23.7
n't know/Declined	1.8	25.0	1.4	2.9		
ou understand the instructions got from the health centre?						
ays	16.4	19.2	55.2	49.4	66.3	72.9
metimes	61.8	38.5	37.8	43.7	25.8	22.0
ver	16.4	9.6	2.1	4.0	6.7	5.1
n't know/Declined	5.5	32.7	4.2	2.9	1.1	

Parent involvement in ECCD services in the community

Parents in Ratanakiri were most likely to seek support from village chiefs and the commune council in improving the quality of early childhood care and development in the community. Parents in the other two provinces did not show a strong preference for sources of support. Only a small number of parents in each province reported ever having complained about issues related to care and development of children aged 6 years or younger in the community, and the percentage was even lower in Siem Reap than among parents in the two other provinces. For those who did not complain, most of them thought there was nothing to complain about. Among those who had ever complained, half of them submitted their complaints to the village chief and almost all of their complaints resulted in a solution. Parents in the experimental groups were more likely to be invited to join a meeting on ECCE than those in the control groups across all three provinces. Parents in the experimental groups were also more likely than those in the control groups to report that community members discussed changes in growth, development, and protection of children under 6 years old. These percentages were also higher in Ratanakiri than in the other two provinces.

Table 39 Parents' involvement in ECCD service in the community

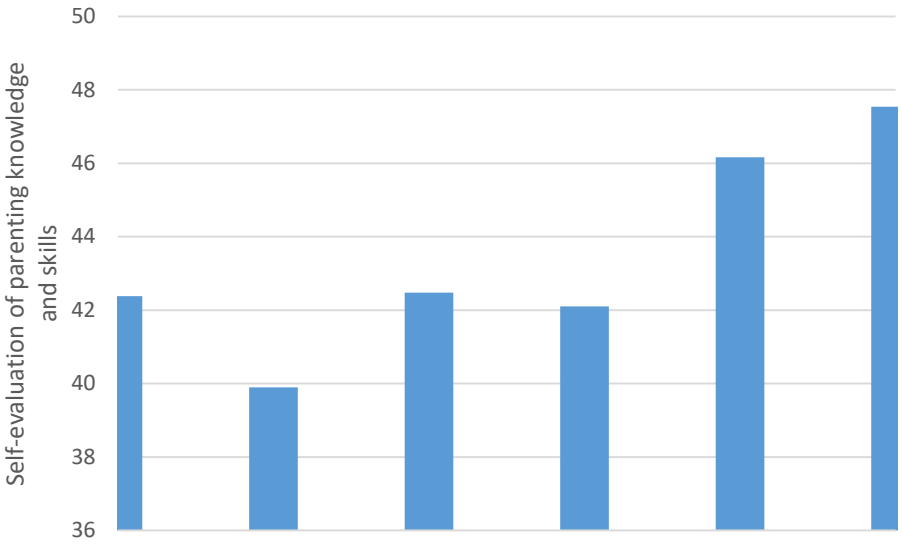
	Ratanakiri (n=107)		Siem Reap (n=317)		Tbong Khmum (n=148)	
	Experimental	Control	Experimental	Control	Experimental	Control
	%	%	%	%	%	%
n whom do you seek support for improving quality of ECCE in your community?						
ve done nothing	5.5	5.8	58.7	48.9	31.5	61.0
mmune council	27.3	3.8	5.6	5.7	2.2	
mmune councillor in charge omen and children affairs	7.3		2.1	1.1	5.6	
school	9.1		1.4	2.3	7.9	1.7
age chief	32.7	32.7	4.9	4.0	18.0	6.8
er	3.6	7.7	1.4		5.6	8.5

n't know/Declined	14.5		25.2	37.9	29.2	22.0
ou ever complain about the issues related to ECCE in your community?						
	20.0	19.2	3.5	5.7	16.9	
	60.0	40.4	90.2	73.0	64.0	83.1
n't know/Declined	20.0	40.4	6.3	20.7	19.1	16.9
ons for no complaints (for those who did not complain)						
e no complaints	45.5	23.8	50.4	41.7	61.4	42.9
n't know where to go to plain		4.8	0.8	3.9	5.3	8.2
body will listen anyway/no waste of time	3.0		2.3	3.1		2.0
n't care to complain	6.1		16.3	16.5		2.0
er	6.1	9.5	3.1	3.9	8.8	8.2
n't know/Declined	39.4	57.1	24.8	29.9	24.6	34.7
hom did you submit complaints? (for those who complained)						
mmune council			60.0	20.0		6.7
mmune councillor in charge omen and children affairs	18.2					
mmunity preschool		40.0	40.0	20.0	13.3	
age chief	54.5	60.0		50.0	73.3	
mmune chief	18.2					
er						
solution for your complaint?(for those who complained)						
	81.8	100.0	100.0	80.0	93.3	
				10.0		
n't know/Declined	9.1					
e you been invited to join a meeting within the community to discuss issues related to ECCE?						
	83.6	63.5	74.1	37.9	51.7	20.3
	10.9	19.2	19.6	43.7	30.3	57.6
n't know/Declined	5.5	17.3	5.6	18.4	18.0	22.0
our community members discuss changes ECCE affairs?						
	85.5	48.1	60.8	37.4	50.6	18.6
	7.3	19.2	28.7	47.1	27.0	61.0
n't know/Declined	7.3	30.8	9.7	14.4	21.3	20.3

Module 6: Parenting knowledge and skills

Parents were requested to evaluate their own parenting knowledge and skills based on items adapted from the Upstart Parent Survey, which is designed to evaluate impact of parenting programmes, and a total score of their responses on 11 items was constructed with a higher score showing a higher self-evaluation. ANOVAs showed that parents in the experimental group of Ratanakiri reported higher self-evaluation than those in the control group and no significant differences were found between the experimental and control groups in the other two provinces (Ratanakiri i: $F(1, 96) = 7.01$, $p = .009$; Siem Reap: $F(1, 296) = 0.21$, $p = .645$; Tbong Khmum: $F(1, 142) = 1.01$, $p = .296$).

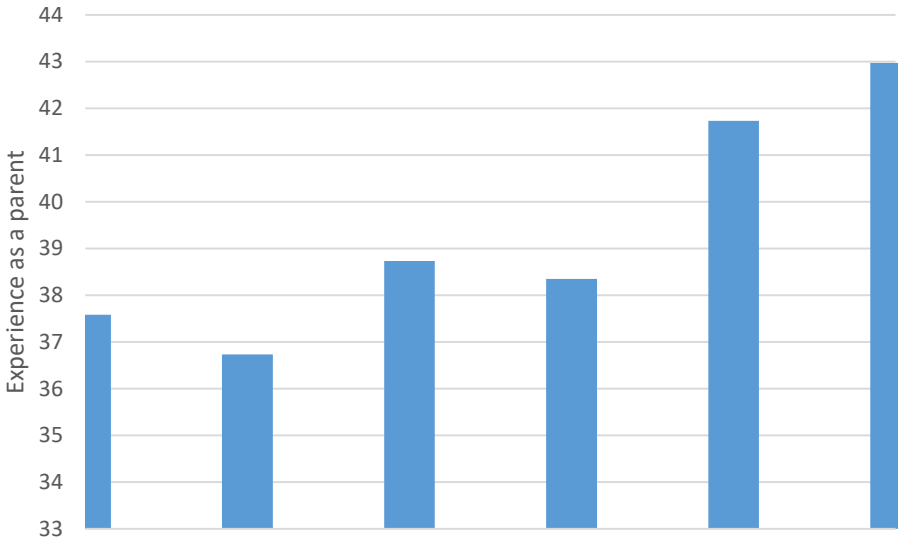
Figure 30 Parents' parenting knowledge and skills in three provinces


Self-evaluation of parenting knowledge and skills
50
48
46
44
42
40
38
36

Experience as a parent

Parents were asked to evaluate their own experience as a parent based on 10 items and their responses on each item were tallied. A higher score on this item referred to a higher self-evaluation of their abilities and skills as a parent. No differences were found between the experimental and control groups in all the three provinces (Ratanakiri: $F(1, 100) = 0.69$, $p = .408$; Siem Reap: $F(1, 308) = 0.24$, $p = .624$; Tbong Khmum: $F(1, 145) = 1.10$, $p = .296$).

Figure 31 Parents' self-evaluation of parenting capacities in three provinces



Village Chief Interview Protocol

Relates to the following outcomes (as outlined in original proposals to DGD and the European Commission):

- *Commune Councils (CC) can make informed choices on ECCD using the Child-Friendly Community Methodology;*

In Ratanakiri, about 68.69% of the questions had valid responses (other than 'Don't Know') from all participating Village Chiefs and no participants provided information for all the items included in the tool. No valid responses for the item of HHS3 (Parents and children know of mental health care services for children) were received from the interviews in Ratanakiri. In Siem Reap, only 51.11% of the questions had valid responses from all the participants and only 6.68% of the participants provided information for all the items. Similarly, in Tbong Khmum, only 55.56% of the questions had valid responses from all the participants and none of the participants provided information for all the items. Multiple imputation process was therefore adopted to impute the missing data. The datasets were imputed five times and the mean of the estimates was calculated and reported.

We only provide descriptive information on responses, based on data collected from the Village Chief Interview Protocol (see Figures 33 to37), as we were not able to conduct statistical analyses of variance to detect differences between the experimental and control groups in each province. A total score was generated for each aspect tapped in the interview, (i.e., Play & Leisure, Participation & Citizenship, Safety & Protection, Health & Social Services, and Educational Resources). All village chiefs did not give a high evaluation of the early childhood-related facilities and services in their villages. The scores in the domain of Health and Social Service were particularly low compared with the score in other domains.

Figure 32 Village chiefs' responses on Play & Leisure in three provinces

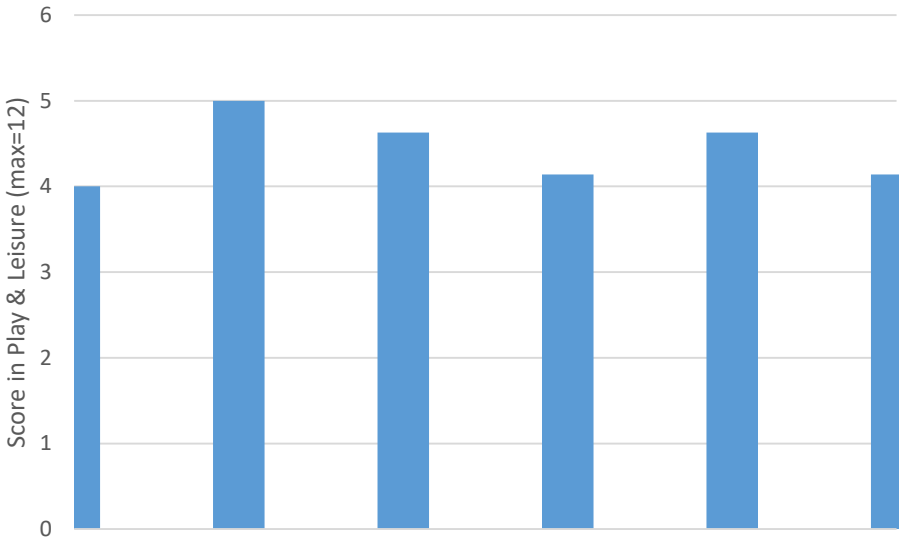


Figure 33 Village chiefs' responses on Participation & Citizenship in three provinces

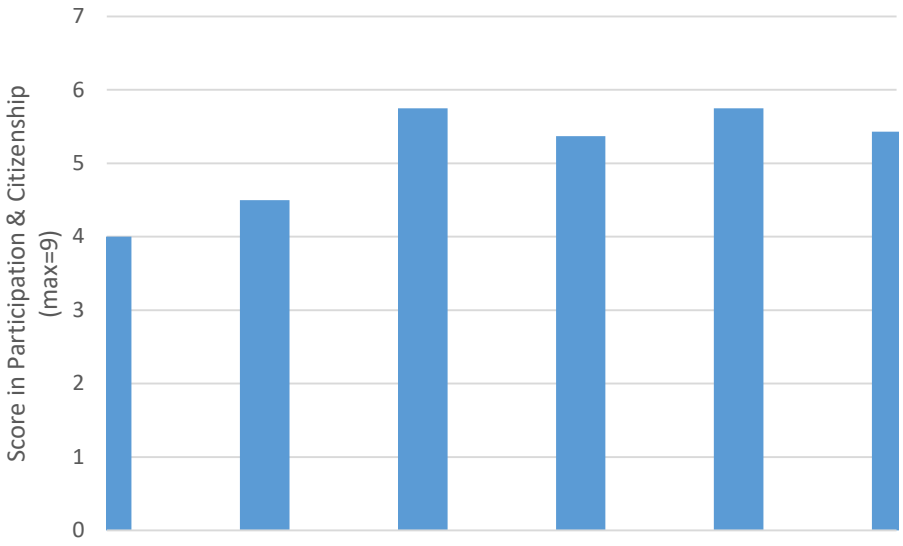


Figure 34 Village chiefs' responses on Safety & Protection in three provinces

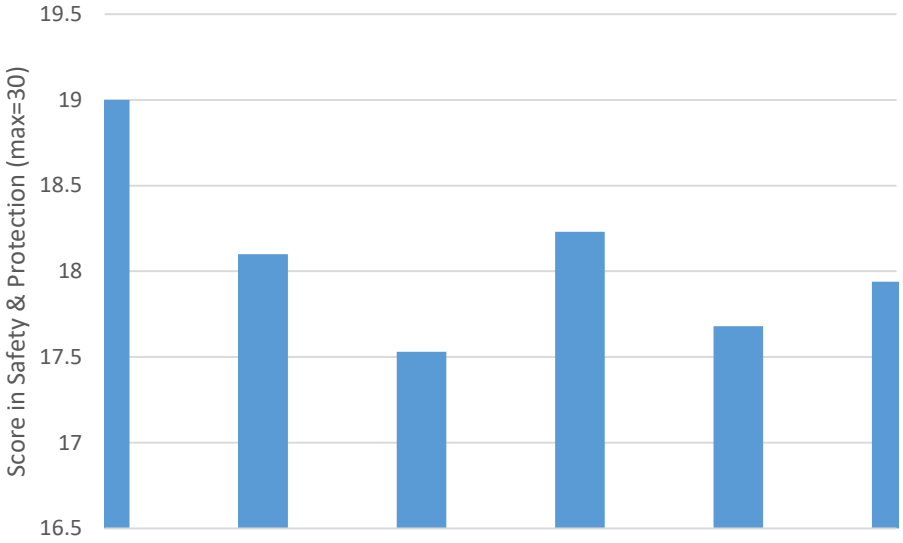


Figure 35 Village chiefs' responses on Health & Social Service in three provinces

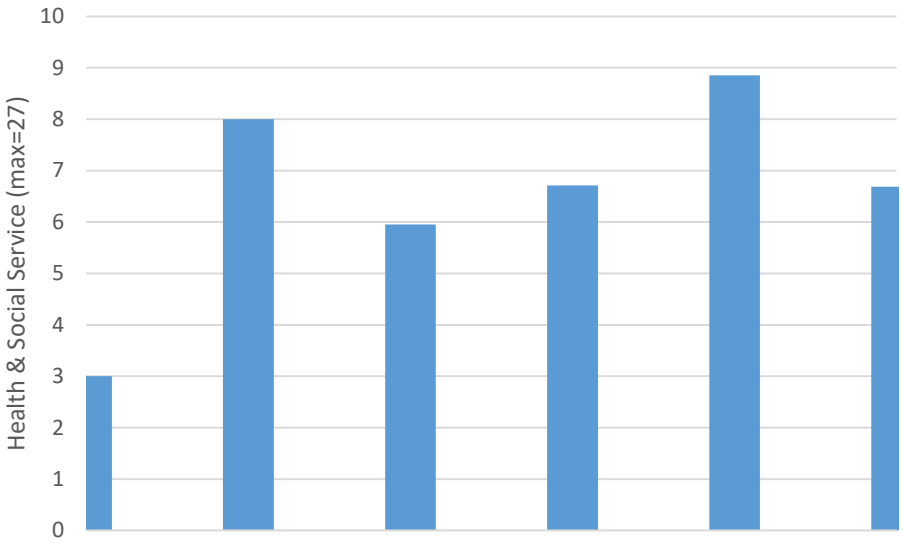
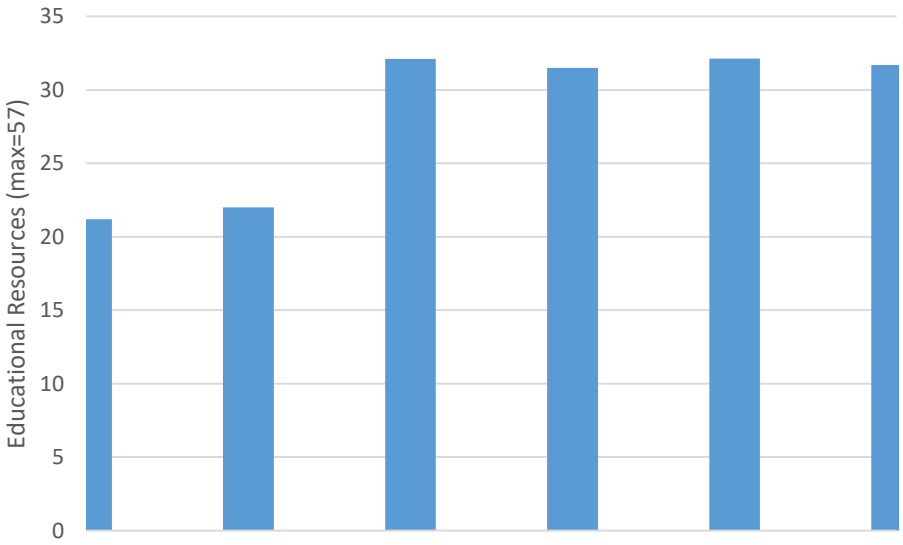


Figure 36 Village chiefs' responses on Educational Resources in three provinces



Preschool Observations (Quality) and Teacher Interviews

Relates to the following outcomes (as outlined in the original proposals to DGD and the European Commission):

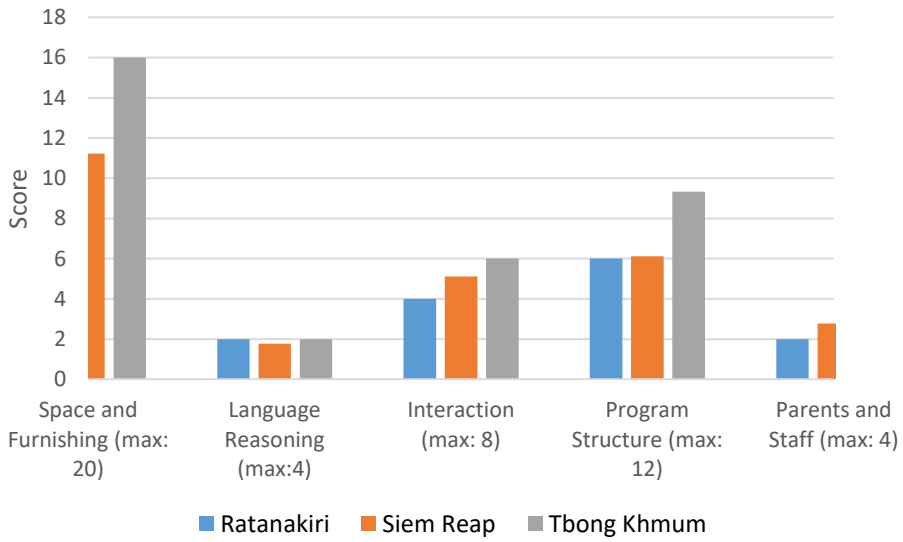
- *Children aged 3-5 have improved access to preschool services;*
- *The pre-school institutions set up by communes have created a long-term positive stimulating environment of high quality for all children aged 3-6 years.*
- *The commune councils and the local department of the Ministry of Education have been strengthened to provide more effective support for teacher development and management of ECCD services.*

Preschool Observations

All items in the school observation scale (Cambodia Early Childhood Education Environment rating scale for community preschools) were adequately reported, as the observations were conducted by data collectors. In order to analyse aspects of quality included in the rating scale, a total score for each of the domains tapped in the observation scale was calculated, respectively. The five domains are: Space and Furnishing, Language Reasoning, Interaction, Program Structure, and Parents and Staff.

Ratings of the observed schools in terms of the five aspects tapped in the observation protocol are shown in Figure 38, below. Due to the small number of preschools observed in each province, we did not conduct analyses of variance to detect differences among the three provinces. However, the ratings reflected a relatively low level of preschool quality (structure and process) in the preschools observed in all three provinces, although the ratings for Tbong Khmum were relatively higher compared to the ratings for the other two provinces.

Figure 37 Preschool quality in the three provinces



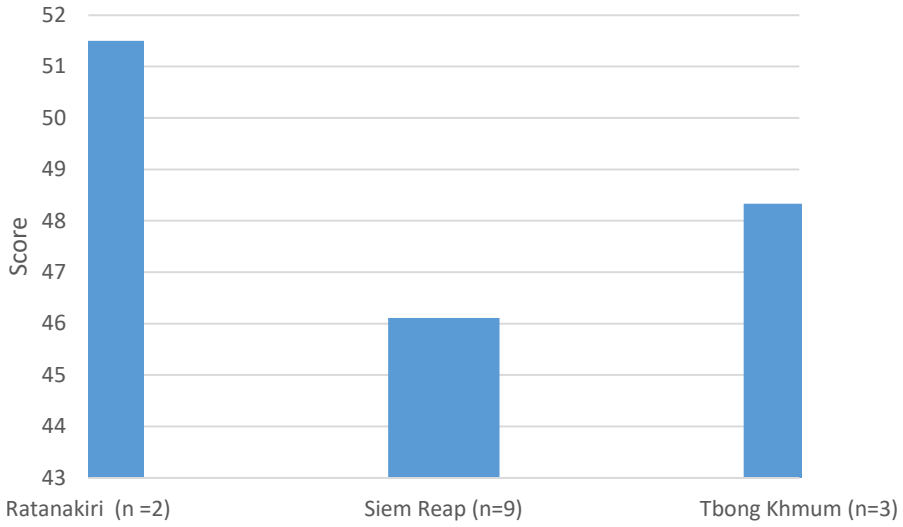
Teacher Interviews

Relates to the following outcomes (as outlined in original proposals to DGD and the European Commission):

- *ECCD services and training aiming at behaviour changes and empowerment of the community members have been provided / conducted;*
- *The pre-school institutions set up by communes have created a long-term positive stimulating environment of high quality for all children aged 3-6 years;*
- *The commune councils and the local department of the Ministry of Education have been strengthened to provide more effective support for teacher development and management of ECCD services.*

A total score of teachers' self-evaluation of their own teaching capacities was generated with a maximum score of 65. Similar to the analyses provided above, we did not conduct analysis of variance to compare differences among three provinces but provide descriptive information in Figure 39.

Figure 38 Teachers' self-evaluation of teaching capacities in three provinces



The teachers were also asked to share their success and challenges as a teacher, through a series of open-ended questions. All teachers regarded *children's participation in school and/or children's improvement* in learning as important in terms of their success as teachers. *Recognition from families and communities* were mentioned by five teachers from Siem Reap and all teachers from Tbong Khmum as indicating success. Three teachers in Siem Reap and two from Tbong Khmum considered *self-development* in terms of either skills or personality as important aspects of success.

Almost all teachers mentioned poor preschool facilities, including school location, school size, and the structure of school buildings, lack of materials, as challenges in being a teacher. The majority of teachers (both of the teachers in Ratanakiri; six teachers in Siem Reap; and all teachers in Tbong Khmum) also mentioned difficulties in effectively delivering activities and managing children. Teachers (two teachers in Ratanakiri , five in Siem Reap, and two in Tbong Khmum) were concerned with children's absence from school. Lack of support from parents was also reported as a challenge for the teachers and this was mentioned by one teacher in Ratanakiri and three in Siem Reap. Four teachers in Siem Reap and two in Tbong Khmum mentioned low financial incentive as a challenge in being a teacher and one teacher in Siem Reap was challenged by lack of family time.

Teachers were also asked to give suggestions for improving the early childhood teaching environment. All teachers suggested providing more professional training for preschool teachers. One teacher in Ratanakiri, three in Siem Reap, and one in Tbong Khmum suggested that parents need to be encouraged to send their children to school and to support school activities. Five teachers in Siem Reap suggested improvements to school facilities and teaching materials. Two teachers in Siem Reap suggested providing snacks for children and two teachers in Siem Reap suggested that the government needs to make stronger efforts to help communities understand better the importance of ECE. One teacher in Siem Reap and all three teachers in Tbong Khmum suggested increased incentives for preschool teachers.

Summary of Key Findings

Early Child Development

1. The finding that older children perform better than younger children in all domains of the revised version of the EAP-ECDS across the three provinces is expected, and indicates that the EAP-ECDS can provide an effective means of tracking children's development in the Cambodian context (although please see comments below related to applicability of some items).

2. The finding that children in the experimental group in Siem Reap (where CPS have been in operation for a considerable amount of time) consistently performed better than children in the control group, across all domains of the assessment, provides

indication that attending CPS results in positive child outcomes. This has important implications in terms of providing necessary supports for children to make a smooth transition into primary school, as those who have attended CPS are evidently being provided with opportunities to develop key basic learning skills. The data reported here cannot provide conclusive evidence of a causal link between attendance at CPS and child development outcomes, as there are a wide range of related influences that are not accounted for. However, there is sufficient evidence to assume some degree of linkage.

3. As would be expected, in Ratanakiri and Tbong Khmum (where CPS are only recently established), there were no significant differences in performance on the test between children in the experimental and control groups. As we have reported, a large number of children were unable to complete all items across all domains. This is unsurprising, given that this is a baseline study of children's skills prior to attending preschool. We would expect the assessments to become more straightforward for both children and data collectors, as children become more familiar with early learning materials and methods.

4. The anthropometric survey indicated a prevalence of 32.6% stunting, 10.2% wasting and 25.9% underweight in children under five years old across the provinces. The results showed that most indicators were consistent and shared similar patterns with a new anthropometric survey conducted by Ministry of Health and Ministry of Planning in 2014 (Cambodia Demographic Health Survey, 2014) with the exception of stunting data from Ratanakiri.

5. Data comparing experimental and control group children in Siem Reap indicate that children living in locations where PLAN's Integrated ECCD projects have been operational are benefitting. Without data on exposure to other interventions, it is not possible to link this outcome directly to any particular programme, however the results are worthy of note.

6. The results also showed that the prevalence of stunting (chronic malnutrition), wasting (acute malnutrition) and underweight are considered "high level", as based on the cut-off points in the WHO classification of the severity of malnutrition. This prevalence reflects the existence of long term undernutrition and highlights the need to prioritize stunting prevention interventions. Programming for stunting prevention interventions would require a comprehensive and long-term approach. It has been estimated that the prevalence of chronic malnutrition can be reduced by about one third if effective interventions are implemented on a large scale (Lancet series 2008 on Maternal and Child Undernutrition: effective action at national level). The most effective interventions in preventing stunting occur during the window of opportunity, from the time of pregnancy until the end of the first two years (first 1000 days) of a child's life.

Family Environment of Children Aged 0-5

Overall, while the results indicate that experimental group parents across all provinces report greater awareness of and involvement in children's psychosocial development (as reported in Module 4), these results provide little evidence of highly significant differences between control and experimental groups in Siem Reap and Tbong Khmum on knowledge, attitudes and practices related to the other 12 KFP's (Key Family Practices – reported in Module 2). These findings indicate that messages related to psychosocial development may be more effectively delivered / more likely to result in changes in knowledge, than messages related to children's health and sanitation, which are notoriously difficult to deliver effectively. It might also possibly indicate that the nature of delivery of messages related to young children's psychosocial development has more effect. Programmes that promote early stimulation tend to strongly emphasise parental engagement and activity, with efforts to ensure that delivery of messages is made through groups that meet regularly and that parents can relate to and appreciate what is being promoted.

Notably, there do seem to be discernible differences between experimental and control groups in Ratanakiri, where parenting programmes are relatively new, but active. There are several possible interpretations of this finding. The first is that, due to the greater disadvantage and lack of access to any kind of basic health and welfare supports in Ratanakiri, any intervention is likely to result in significant impact, when measured by comparing experimental and control groups. This argument is supported by previous research that has indicated that the most significant impact of early childhood interventions is found among groups that face the most severe levels of disadvantage (for example, see Knudsen, Heckman, Cameron & Shonkoff, 2006). This indicates that PLAN Cambodia's role in supporting communities in Ratanakiri is of particular importance.

Another interpretation of these findings is related to the nature of the dataset. It is important to note that, in Siem Reap and Tbong Khmum (unlike in Ratanakiri) a large number of respondents were Grandmothers. This is likely to have affected answers, in particular to

questions concerning breastfeeding; antenatal and post-natal care and consumption of micronutrients. Implications of this situation are discussed below.

For purposes of clarity, a more detailed summary of key findings organised around the 12 Key Family Practices (KFP) is presented below: Hygiene; Exclusive breastfeeding; Complementary feeding; Home care for illness; Home treatment for infections; Care seeking; Compliance with health advice; Antenatal care; Micronutrients; Immunization; Psychosocial development. Also included is a summary of findings related to Community Capacity Building, as this constitutes one of the goals / outcomes identified in the original proposals to the European Commission and DGD.

Hygiene

These findings suggest that the Health workers may need additional support in delivery of messages related to hygiene and sanitation: up to 21% of parents across all provinces / groups report that they never treat water; The maximum % of parents who report washing hands before handling food in all experimental groups is 35% and only a total of 8% of parents across all groups report washing hands after disposing of children's faeces. Given that parents also report diarrhoea as one of two most common childhood illnesses, an emphasis on handwashing behaviours seems crucial.

Breastfeeding and complementary feeding; antenatal and post-natal care; micronutrients

According to this data, between 66 (control group Ratanakiri) to 92% (control group Tbong Khmum) of mothers report breastfeeding their babies until they are 6 months old. The maximum number of parents across all groups who report having received information about breastfeeding is 79% (Ratanakiri experimental group).

As mentioned above, the validity of this data may be questionable, due to the high numbers of Grandmothers giving responses in Siem Reap and Tbong Khmum, hence for the breastfeeding results, we removed nonmaternal caregivers from the analysis. The important implication of this, however, relates to (i) who attends parenting information sessions; (ii) what information is provided at the information sessions and (iii) how to ensure that attendees are involved in monitoring and evaluation. If Grandmothers are attending data collection sessions with children, this suggests that they may be regular primary caregivers to young children and that they (and male members of the family, including both fathers and grandfathers) may, or should, be targeted for parenting information sessions.

All participants report high levels of dependence on health professionals for receiving information related to breastfeeding and early nutrition, underscoring the importance of the integrated approach in this Programme. However, while mothers (participants) depend largely on health professionals in Siem Reap and Tbong Khmum, most mothers in Ratanakiri reported that they receive information from the community. This indicates that different sources play a key role in different parts of the country. Key members of the community (including village chiefs and commune councils) also need to be informed, so that they can reinforce consistency in these messages which, again, supports PLAN's integrated approach.

Between 32% and 48% of mothers across all provinces in experimental groups report having received antenatal care, with between approximately 75% (Ratanakiri) and over 90% of these mothers in experimental groups in Siem Reap and Tbong Khmum reporting having taken iron supplements during pregnancy. These statistics differ somewhat from those reported in the national Demographic and Health Survey, which may reflect the nature of data collection in this study.

Child immunization; psychosocial development

These findings suggest that immunization rates in Siem Reap and Tbong Khmum are high (close to 100% across all groups), but lower in Ratanakiri, again supporting the important role of PLAN in this province. Parents seem to feel confident about child-rearing in general and, across the provinces, parents in experimental groups are significantly more likely than those in control groups to interact with their children. Rates of harsh discipline across all groups, however, remain relatively high (18% in Tbong Khmum and 26% in Siem Reap and Ratanakiri).

Capacity building of communities

Limitations in the nature of questions included in the KAP survey related to parents' (primarily mothers) and community involvement in ECCE are discussed below. There is strong evidence of greater activity related to ECCE in experimental groups across all provinces. As many as 84% of parents in Ratanakiri; 74% in Siem Reap and 52% in Tbong Khmum report having been invited to a community meeting to discuss issues related to ECCE. These findings also indicate that village chiefs and commune councils are primary points of contact for parents with regard to ECCE issues.

Village Chief Interviews

Once again, data collection challenges are noted, suggesting that caution should be taken in interpreting these findings. As reported earlier, missing data from some of the domains covered in this structured interview resulted in difficulties in analysis.

However, important implications can be drawn from the findings. Village Chiefs across all provinces / groups report that there is a lack of health and social care facilities available to children in their villages (out of a maximum score of 27 for good provision of services, a very low score of 3 was reported in the Ratanakiri experimental group, with the highest score being 9 in the Tbong Khmum experimental group villages). This may support feedback from parents, who also suggest that access is limited.

Teacher Interviews

Based on the findings reported here, teachers appear to be engaged and committed. The findings that teachers are motivated by seeing children develop and by recognition from families and the community reflect similar findings from teachers in a large number of other countries, suggesting that success in teaching and community recognition are important motivational factors for ECE teachers, who often receive little financial incentive. This, again, supports the integrated approach that PLAN is taking, as it emphasises community commitment to and recognition of ECCE.

The finding that teachers have requested more training also reflects similar perspectives among teachers in other countries. Developing ECCE teachers often highlight the value of opportunities for on-going professional development, as well as opportunities to meet with other teachers and share ideas / resources. Any opportunities provided to teachers such as these are likely to raise quality and teaching effectiveness, as well as motivation.

The finding that resources are limited is not unexpected. In Ratanakiri, particularly, data collectors noted that resources in the preschool are very limited. Parents also noted the same, indicating that more support may be needed.

The finding related to teacher concerns about children's absence from preschool indicates (i) that links with communities can be strengthened via Village Chiefs and Commune Councils to raise awareness that attendance at preschool is important and (ii) appropriate (workable) methods for tracking children's attendance at school (perhaps requiring teachers to report to the Village Chief) should be incorporated into the outcomes monitoring system (OMS).

Study Limitations

In summarising key findings, it is important to acknowledge challenges that were experienced during the data collection process because (i) there are possible 'threats' to the validity of data presented, meaning that the findings should be interpreted with some caution, and (ii) there are useful 'lessons learned' that should inform development of the OMS (Outcomes Monitoring System).

As indicated in the Methodology section of this report, this is a unique study in that one of the intentions in designing and conducting the research was to provide programme staff with opportunities to participate in a workshop that covered introductory information on monitoring and evaluation; research methodologies, and data collection strategies. For any organisation intending to carry out regular monitoring and to adopt participatory methods in monitoring and evaluation, this approach is both important and beneficial.

However, it is important to note the implications of involving staff in data collection designed to provide a basis for monitoring and evaluation of projects that they are responsible for delivering. Based on informal observations of the research team during initial stages of data collection, data collectors were able to take on board messages regarding impartiality and the role of the researcher that were delivered during the training workshop. The more challenging aspects of asking programme staff to engage in data collection covering a wide range of locations and using time-consuming tools, were related to time and workload constraints. In some cases, staff who had attended the workshop were unavailable for data collection and programme officers had to put in place alternatives for data collection. These factors, and others outlined below according to each data collection tool, will have influenced the data collection process and therefore caution in interpreting the data is necessary.

Early Childhood Development

1. The first set of challenges experienced in terms of child assessments is related to availability of data collectors, accessibility of the EAP-ECDS tool and language barriers. In Ratanakiri, due to absence of the data collector who had received training in use of the EAP-ECD tool, the assessments were conducted by data collectors who had not been involved in the pilot or follow-up sessions. Given the complexity of this tool, this meant that there were challenges in implementing the assessments. Another challenge reported by data collectors is related to the lack of contextual relevance of some items in the EAP-ECDS, meaning that some children struggled to engage with the assessment. Equally, language barriers meant that the process of interpreting and translating items for children in Ratanakiri made the assessment process tedious, so children lost concentration.

2. As we have reported, a large number of children were unable to complete all items across all domains. This is unsurprising, given that this is a baseline study of children's skills prior to attending preschool. We would expect the assessments to become more straightforward for both children and data collectors, as children become more familiar with early learning materials and methods.

3. Another challenge was experienced in relation to recruitment of children. In some cases, children were mis-identified, or children who had been identified through a process of random selection were not available, so village chiefs had to identify suitable participants. This means that, while the intention was to select through random sampling, in some cases, children were selected by the village chief.

4. A fourth challenge, reported by data collectors in their Reflective logs, was related to availability of space for conducting the assessments. In some provinces, child assessments were conducted outside, with distractions caused by other children joining in; weather conditions, and no tables / chairs to place the assessment tool on.

Implications / recommendations related to tools:

Based on the findings presented, the EAP-ECDS tool seems to provide an effective means of tracking children's development. However, if it is adopted for the OMS, it needs to be revised and adapted in consultation with the team of researchers involved in data collection, so that we can ensure relevance and effectiveness of implementation.

Preparation for child assessments takes time and requires availability of appropriate materials. Once again, if this tool is adopted for the OMS, these are important considerations / stipulations, to ensure validity of any findings generated from child assessments. Use of this tool would require development of clear protocols and on-going availability of appropriate tools.

Parent KAP Survey

As noted in the Methodology, Analysis and Results section, the KAP survey used in this study is designed primarily for use with mothers. Module 2, in particular, contains a number of items related to breastfeeding and maternal care that it would be difficult for extended family members to respond to with accuracy. The data from this study indicate that, in fact, primary caregiving may be provided in many families by extended family members, particularly grandparents, or fathers. A limitation of this study is that the tool used does not fully account for the role that 'alternative' caregivers play in supporting young children's development.

For the purposes of both programme design and monitoring, this limitation needs to be addressed. For example, future 'parenting' programmes need to target grandparents and fathers, and monitoring of each programme must also be more inclusive of non-maternal caregiving arrangements.

All data collectors, during and post-data collection, commented on the length and complexity of the KAP Survey. This is likely to have affected participants' responses, as not only is the tool lengthy, it also requires a degree of concentration and remembering key pieces of information about various issues ranging from building materials in the home, to childbirth, children's vaccinations and the nature of children's toys at home.

Implications / recommendations related to tools:

Again, based on the findings presented, the KAP Survey covers important aspects of hygiene, child health and early childhood development that are directly related to the goals of the Integrated ECD Programmes. We would suggest, however, that for the purposes of the OMS, the various Modules contained in the tool should be separated and used to collect data related to different aspects on separate occasions and for different purposes, so that there is closer alignment with programme objectives and intended outcomes. For example, the items related to maternal health and children's vaccinations could be separated from those designed to measure psychosocial development and the home environment. This would ease the burden on data collectors and probably enhance participants' responses. It would also enhance inclusivity of the tool so that extended family members who are caring for children, and perhaps attending 'parenting' programmes could be included in data collection for monitoring purposes.

There are a few items that we recommend checking / revising. For example, the item on water temperature, which asks participants whether they can tell that water is safe by the temperature (ie. hot/cold). This item is ambiguous and the data it collects is not particularly useful. We would recommend changing the optional response from 'hot / cold' to' boiled / not boiled'. Similarly, the items that relate to community capacity building are restricted largely to questions about parent complaints to commune council and village chiefs. It may be more appropriate to broaden these questions so that they collect more information about community activities that support ECCE and the role of various community members in these activities, rather than focusing on complaints processes.

Village Chief Interview

As reported in the Analysis and Results section, analyses revealed missing data for some sections of the Child Friendly Communities structured interview tool used in this study. There are two possible explanations for the missing data. One is that the domains covered by this tool are relevant, but that in many cases, Village Chiefs were not yet able to report on them as they feel uninformed on related issues within their village. The second is that the domains are not relevant and not closely aligned with the programmes and objectives of PLAN's activities. If the first is 'true', this would indicate that the tool could be useful for monitoring progress in the domains currently outlined. If the second is true, there is scope for revising the tool so that it aligns more closely with PLAN's activities and may therefore be more relevant. These revisions could also be made to the KAP survey, so that there is enhanced alignment between monitoring of capacity and community development from village chiefs' and parents' perspectives.

While data collectors reported no major challenges with this tool, if a version of it is to be adopted for monitoring of outcomes, revisions to ensure that the tool is closely aligned with programme objectives and intended outcomes are suggested.

Preschool observations / teacher interviews

The self-efficacy tool adopted for the purposes of this research is intended to measure changes in self-belief linked to interventions designed to enhance professional development of teachers. It does not provide a measure of short-term, concrete outcomes reflected in daily practice. For the purposes of on-going monitoring, this aspect of teacher development should be accounted for in revisions to the tool.

No issues related to this tool were reported by data collectors. It is a simple to use tool, although for monitoring purposes, the tool could be extended to incorporate both short-term and long-term outcomes. This would enable monitoring of different aspects of teacher development, such as availability of resources and training opportunities, as well as changes in teacher feelings of self-efficacy.

Conclusions / Implications and recommendations for Outcome Monitoring System (OMS)

Overview of key findings

More detailed conclusions and summaries on each aspect of the data collected for this baseline study are provided in previous sections. This concluding section focuses on broader deductions and implications, both for the ECCD Integrated Programmes and for the Outcomes Monitoring System that will be developed as a follow-up to this study.

Data from the revised version of the EAP-ECDS indicate that, where CPS have been in place for some time, they are having a positive impact on early child development. Parents whose children attend CPS also appear to show greater awareness of the importance of early stimulation and interaction with children. They also, based on results reported here, are more likely to be engaged with early childhood issues within their communities.

Findings based on the CECEE rating scale, however, indicate room for improvement in terms of the quality indicators included in this scale. This finding is supported by feedback from teachers who participated in the survey. On this basis, the following recommendations are put forward:

- Monitoring of CPS (resources; teacher planning and preparation; child attendance, and communication with parents) could be strengthened. This monitoring would be most effective delivered in a supportive, facilitative manner. In other words, teachers need to feel supported, not intimidated, by monitoring. We would propose building this into the OMS.
- Teachers mentioned difficulties with classroom facilitation and relationships with parents. On-going professional development and training of teachers would help to strengthen their capacity, and could perhaps involve parents / key stakeholders within the village.
- Since parents whose children attend CPS appear to have benefitted also in terms of parenting skills and confidence, there may be opportunities for integrating health messages in any programmes that are delivered to parents in connection with CPS. There is a possibility that parents receive messages more easily from early childhood educators / facilitators than they do from health workers, or at least health messages could be reinforced by both sets of practitioners.

At this stage (as would be expected of baseline study) there are few discernible differences across experimental and control groups in terms of parental knowledge and practices related to early childhood health and well-being. However, an interesting, and unexpected finding was that parents from the experimental groups in Ratanakiri appear to have stronger awareness in many aspects of the 12 key family practices than parents in any of the groups across the other provinces. As mentioned earlier, whilst this may be to do with the nature of the target group, it would be worth investigating how these messages are being delivered to parents by programmes in this province, and whether lessons can be learned from this.

Based on findings from the parental KAP survey, there appear to be opportunities to enhance health-related knowledge and behaviours among parents, *particularly in relation to sanitation and hygiene*. As mentioned earlier, health and sanitation behaviours are notoriously difficult to change. While a weakness of the KAP survey is that it does not directly ask parents if they have received information about sanitation / hygiene and, if so, from whom, it is important to consider (i) which people are the most appropriate for delivery of those messages and (ii) how the messages can be most effectively delivered. For example, research conducted by Scott, Curtis, Rabie & Garbrah-Aidoo, (2007) found that the most common motivators for handwashing are not related to health but to 'disgust' and 'smell'. This finding is reflected in our results: in response to a question regarding problems associated with open defecation, between 40-60% of parents from all three provinces report 'shame' and 'bad smell' as the most significant problems (not pollution of water or the environment). In designing these health messages, it might be useful to consider how, by whom and to whom these messages can be most effectively delivered (and repeated) to result in behavioural change.

Recommendations for Outcome Monitoring System

Reflections on, and challenges related to, data collection for this study (as well as suggestions for revision of tools) are reported in the concluding sections for each set of variables in the full report. Briefly, based on (i) utility of findings for BOTH on-going monitoring

purposes AND measurement of broader outcomes; (ii) resources requirements for data collection, and possible linkage to other projects, we would recommend the following as features of the OMS design (please see further details in Appendix B):

To be collected every 6 months:

1. Teacher interviews / classroom observations (following appropriate revision of tools).
2. Child attendance data.
3. Interviews with key stakeholders (village chief; commune council; parent group leaders).

To be collected every 12months:

1. Parent WASH; early stimulation items from KAP survey (Modules 4, 5 & 6).
2. Child Development Scale (revised version of EAP-ECDS).
3. Anthropometric surveys.

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Appendix A – PLAN Cambodia Integrated ECCD Programmes

Integrated ECCD Programmes: ***Children, especially the most marginalised, are happy, healthy and 'ready for school'***		
HOME (Parents)	**PRESCHOOL** (Teachers / CPS)	**COMMUNITY** (Villages / Village Chiefs / Commune Councils)
Parenting; Early stimulation; Nutrition (maternal & child); Child health; WASH	Quality learning environments and experiences; teachers empowered & motivated; teachers skilled; preschools with sanitation facilities; learning resources; maintained & monitored regularly	Child friendly communities (clean; safe; with opportunities for early learning); ECD budgeted; preschools maintained.
PARENTS AWARE, CONFIDENT & ACTIVE	**TEACHERS AWARE,CONFIDENT & ACTIVE**	**VILLAGE CHIEFS / COMMUNE COUNCILS AWARE & COMMITTED**
CSP Outcome 1.1 Parents and caregivers provide positive early stimulation, effective care and support to learning of girls and boys aged 0-5; CSP Outcome 3.2 Parents and caregivers have and apply the knowledge, time, and resources to provide themselves and their children with age appropriate, adequate nutritious foods (including breastmilk for infants) and a clean, hygienic environment for children aged 0-5	CSP Outcome 1.2 Community based pre-school (CPS) teachers and parent group leaders have the capacity and commitment to support stimulation and learning of girls and boys	CSP Outcome 1.3 Commune councils (CCs) and village leaders provide support to early stimulation and quality learning outcomes for girls and boys aged 0-5; CSP Outcome 3.4 Community groups and commune councils have the knowledge and skills to assess and monitor the situation of child nutrition in their village/ commune and access quality public health services for management of malnourished children
Plan's Integrated ECCD Programmes are underpinned by a commitment to promoting sustainable, equitable approaches to achieving positive outcomes for young children		

Appendix B – PLAN Outcomes Monitoring System tools and schedule

Result Chain	Indicators	Definition	Data Source	Data Collection Method	Frequency & Time for Data Collection
Objective: Children aged 0-5, especially the most marginalized, receive learning and stimulation for optimal development.					
Outcome 1	Parents and caregivers provide positive early stimulation and support to learning of children aged 0-5				
Parents and caregivers provide positive early stimulation and support to learning of children aged 0-5	Increased rates of early stimulation behavior (ie. increased reported rates of play activities with children)	Mothers, fathers, or caregivers who have the children age 0-5 in the target regularly provide responsive interactions, engage in interaction and play activities with children as part of daily life, such as storytelling, singing, using natural materials to create toys, talking to children during eating and before sleeping *Possible additional monitoring data: Number of families that have become "model families" due to parent groups (bright spot family criteria)*	• ECCD baseline study 2016 report. • Annual ECCD survey internal)	• KAP interview with mothers, fathers or other caregivers.	• Annually
	Increased rates of enjoyment and appreciation of young children.		• ECCD baseline study 2016 report. • Annual ECCD survey	• KAP interview with mothers, fathers or other caregivers.	• Annually
	Increased rates of community engagement in young children's issues	The community/village (fathers, mothers or caregivers in the village) in the target areas regularly conduct the meeting in their villages to discuss children's growth, development, and protection outcomes of children under 5 in the village.	• ECCD baseline study 2016 report.	• KAP interview with mothers, fathers or other caregivers.	• Annually
	Percentage of parents of children aged 0-3 that attend parent groups in the target communes.			• Parent Core Leader monitoring tool	• 6 monthly
Outcome 2					

Community based pre-school (CPS) teachers and parent group leaders have the capacity and commitment to support children and parents stimulation and learning of children	Increased number of girls and boys regularly attending CPS	% of girls and boys aged 3-4-5 (in target area) enrolled in early learning activities in preschools (state preschool, community and mobile preschools).		• Teacher monitoring tool	• 6 monthly
	Increased rates of community preschools that reach a minimal acceptable score on the early childhood environment rating scale	% of community preschools that reach a minimal acceptable score on the early childhood environment rating scale (according to criteria from ECE department).	• ECCD baseline study 2016 report.	• Preschool class observation.	• 6-monthly
	Increased rates of community preschool teachers completed training based on community preschool guideline. (MoEYs)	Number of community preschool teachers completed 35 days training on teaching methodologies and pedagogies based on community preschool guideline from (MoEYS).		• Teacher monitoring tool	• 6-monthly
	Increased rates of CPS students aged 5 years old passed the school readiness assessment at the start of school academic year			• To be collected from schools	• Annually
	Number of functioning play houses increases			• Parent Core Leader monitoring tool	• 6-monthly
Outcome 3					
Commune councils (CCs)and village leaders provide support- including financial- to early stimulation and quality learning outcomes for children 0-5	Increased rates of community based pre-school teachers who receive incentives 100% paid by the commune council	Number of community based pre-school teachers that receive incentive 100% paid by the commune council		• Teacher monitoring tool	• 6-monthly
	Increased rates of Core parents/ Core Parent group leaders that receive a regular incentive from the commune council.	% of Core parents leaders that receive a regular incentive from the commune council		• Parent Core Leader monitoring tool	• 6-monthly
	Increased rates of communes that reach a minimal acceptable score on the child friendly community assessment.	The communes which had been assessed on the Child Friendly Community (CFC) assessment. CFC is a tool for assessing the level of the commune council who worked on critical component indicators such as education, health & nutrition,	• Baseline Study	• Child friendly community scale	• Annually

		participation and child protection, etc.			
Outcome 4					
Ministry of Education (MoEYS), Ministry of Health, Ministry of Women's Affairs and Ministry of Interior provide adequate budget and technical support to CPS and parenting groups.	Number of advocacy / support meetings held and / or supported by PLAN staff			• Self-report	• Annually