AIR®
AMERICAN INSTITUTES FOR RESEARCH®

Bangladesh Early Years Preschool Program Impact Evaluation

Midline Report for the World Bank Strategic Impact Evaluation Fund

AUGUST 2019

American Institutes for Research:
Elizabeth Spier | Kevin Kamto | Adria Molotsky
Data International:
Azizur Rahman | Najmul Hossain
Save the Children:
Zannatun Nahar | Hosneara Khondker

MAKING RESEARCH RELEVANT

Bangladesh Early Years Preschool Program Impact Evaluation

Midline Report for the World Bank Strategic Impact Evaluation Fund

AUGUST 2019

American Institutes for Research:
Elizabeth Spier | Kevin Kamto | Adria Molotsky
Data International:
Azizur Rahman | Najmul Hossain
Save the Children:
Zannatun Nahar | Hosneara Khondker

1000 Thomas Jefferson Street NW
Washington, DC 20007-3835
202.403.5000

www.air.org

Contents

Exhibits

Page

Abbreviations and Acronyms

AIR	American Institutes for Research
DPE	Directorate of Primary Education
EYPP	Early Years Preschool Program
IDELA	International Development and Early Learning Assessment
MEAL	Monitoring Evaluation Accountability and Learning
SMC	School Management Committee

Acknowledgments

We would like to thank the families, children, and educators who so generously gave their time to participate in this study.

Thank you to the World Bank for sponsoring this study.

And thank you to the Save the Children field office staff from the sponsorship-funded Shishuder Jonno program in Meherpur for their support in carrying out this study.

Executive Summary

Coinciding with its economic growth over the past few decades, Bangladesh has rapidly improved on many social indicators, including providing quality primary and pre-primary education. The National Pre-Primary Operational Framework includes a plan for two years of pre-primary education, starting with one year of pre-primary education in all primary schools and gradually growing into a two-year program. With its Early Years Preschool Program (EYPP), Save the Children has been providing the additional year of preschool to children at age 4. Children then begin the typical one-year pre-primary class at age 5 and to Grade 1 at age 6.

The Early Years Preschool Program

Save the Children supervises and monitors the implementation of the EYPP. The EYPP is typically implemented for two hours per day in government primary schools. The program uses the existing pre-primary classroom and teacher but has a different curriculum and different materials and meets at different times of the day. The EYPP is intended to serve children who are one year away from on-time enrollment in government pre-primary and two years away from enrollment in Grade 1. Save the Children provides teachers with five days of initial training, then bi-monthly refresher trainings (for a total of four refresher training sessions over the school year). Teachers also received training in supporting parents to build children's emergent mathematics and literacy, training in the development of learning materials, and an orientation on Save the Children's child safeguarding policy. EYPP classrooms were also provided with a set of teaching and learning materials.

In addition to teaching the EYPP class, teachers are expected to conduct monthly parenting sessions to build awareness among parents about the provision of a supportive and educational environment at home and to provide materials and activities for home learning in literacy and mathematics. Each session lasts for one and a half hours.

The School Management Committee and Save the Children's Community Core Group played a key role in program implementation, providing supports such as recruiting teachers and paying a portion of their salaries, recruiting families and enrolling children, providing material support (e.g., mats, tiffin), and maintaining program records. The exact support varied based on the needs and interests of each community's EYPP program and stakeholders.

Evaluation Objectives and Intended Audience

This study aims to investigate the impacts of offering this additional year of pre-primary education in Bangladesh on child development outcomes and examines the benefits relative to the costs of the program. The study also examines the mechanisms through which the EYPP affects the outcomes of interest (e.g., children's school readiness) and the operational and community conditions for program implementation. This study will provide evidence for the government of Bangladesh on how and how much the additional year of preschool benefits children and at what cost. In addition to informing future policy in Bangladesh, this information may be useful for other countries considering similar programming. This report provides midline findings for the evaluation. The midline assessment took place just as children were transitioning to the typical pre-primary class offered the year before children start Grade 1 (and after children offered the EYPP would have completed their participation in the program).

Evaluation Methodology

This study is a randomized control trial (RCT) of the EYPP to determine its impacts on children's learning and development. An RCT is the most rigorous type of study design. In 2016, we randomly assigned 100 schools in the Meherpur district of Bangladesh to a treatment group receiving the EYPP (n = 50) or to a no-program control group (n = 50). The children participating in the study from these communities were expected to enroll in government pre-primary in 2019 and enter Grade 1 in 2020. Nearly all children in this study come from households that have electricity, books, and store-bought toys.

In the 50 treatment school catchment areas, children selected for the study were invited to participate in the EYPP at their local school in 2018 and were then expected go on to government pre-primary as usual in 2019. In the 50 control school catchment areas, children selected for the study will be eligible to enroll in government pre-primary program as usual in 2019 but did not have the EYPP available to them the year before. This allows us to estimate the net effects on children of adding the second year of pre-primary education (EYPP) compared to having only one year of pre-primary education (business as usual).

This evaluation is intended to answer primary research questions about program effectiveness and cost-effectiveness as well as secondary research questions regarding the mechanisms of change, relative program effects for boys versus girls, and fidelity of program implementation. At midline, we assessed children's school readiness, noted their characteristics (such as health), learned whether they had participated in any pre-primary education (EYPP or other), asked parents about support for children's learning at home, learned about EYPP teacher perceptions of the program, and obtained EYPP monitoring data from Save the Children. The World Bank gathered program cost information to examine the EYPP's costs relative to benefits.

As of midline, we had zero attrition at the school level and just 2.2 percent attrition at the child level. All study activities have been completed on time, and we have had no concerns about the quality or completeness of study data.

Midline Findings

The EYPP seems to fill a gap among children who were not going to go to preschool otherwise. In the EYPP treatment group, 90 percent of children attended preschool programming (both EYPP and other programs) versus 58 percent of the control group who attended preschool programming. Among the children with the EYPP available, 50 percent of parents chose to send their child to the EYPP, 40 percent chose another preschool, and 10 percent kept their children home.[1] The children who were enrolled in the EYPP had very high attendance rates, with nearly all attending at least 80 percent of the sessions and most attending over 90 percent. The EYPP seems to have been implemented with a high level of fidelity, and EYPP teachers were very positive about the program overall. EYPP teacher concerns focused on a desire for a higher honorarium and more regular (monthly) training rather than issues with the program itself. Parents were also very positive about the EYPP, although parents whose children went to other preschool programs gave similarly positive ratings for the other programming.

The EYPP had a positive impact on children's cognitive development in the areas of literacy, numeracy, and approaches to learning. In these three areas, both girls and boys benefited, but the benefit for girls was higher. We also found significant positive program effects on children's social-emotional learning and motor development, with no significant differences in benefit for girls versus boys in either of these areas. We did not find that programming changed the household educational environment, which was already quite good across the treatment and control groups – possibly as a result of extensive work Shishuder Jonno has carried out in the region since 2007 to build supportive home environments for early learning. Thus, EYPP-driven changes in the home educational environment did not play a significant role in these results.

The final round of data collection will take place in November–December 2019, when study children are expected to have completed their one-year regular government pre-primary class and will be about to begin Grade 1. At that time, we will learn whether these early program effects continue to place children on a better educational trajectory.

[1] We compare baseline characteristics of the households in the treatment group that chose to send their children to the EYPP and those households that chose to send their children to other preschool programming including other public programs, Islamic Foundation programs, BRAC preschool, and private preschool We find these households significantly differ on parents' literacy as measured by their ability to read and write suggesting the possibility that more educated parents were already planning to send their children to preschool and, thus, were not influenced to enroll their child in the EYPP.

1. Introduction

Bangladesh has been recognized for its great success in improving educational and health outcomes during the past few decades. Coinciding with economic growth in this period, Bangladesh has rapidly improved a range of important social indicators, including the access to and the quality of primary and pre-primary education. The National Pre-Primary Operational Framework includes a plan for two years of pre-primary education, starting with one year of pre-primary education in all primary schools and gradually growing into a two-year program. With its Early Years Preschool Program (EYPP), Save the Children has been providing that additional year of preschool to children age 4, who then progress to the one-year government pre-primary class at age 5 and to first grade at age 6. This midline report provides information about the impact of the EYPP on children's learning just prior to beginning the typical one-year pre-primary program. We will begin the endline assessment in November 2019, just before children transition to Grade 1.

1.1. Evaluation Context

Growing evidence shows that preschool increases young children's school readiness by improving cognitive and social-emotional development, and can have lasting benefits beyond primary school, especially for socially and economically disadvantaged students (Currie & Thomas, 1995; Deming, 2009; Feller & Gelman, 2014; Kline & Walters, 2014). Pilot studies from rural Bangladesh confirm the positive impacts that preschool has on school readiness and social development outcomes (Aboud, 2006; About & Kamal, 2011).

In 1995, Save the Children began implementing pre-primary programs in different regions of Bangladesh. In the district of Meherpur, these activities started in 2007. During this period, the government did not provide formal pre-primary education. In 2008, when the government's Directorate of Primary Education developed the operational framework for pre-primary education. To support these plans, Save the Children developed a pilot program for the EYPP (targeting four-year-olds) and started implementing it in a subset of primary schools that showed interest in the program. Save the Children completed its work on this project through its Shishuder Jonno sponsorship program. To implement the pilot, Shishuder Jonno staff worked with primary schools, the communities in which they were operating, and the school management committees (SMCs) to find locations for providing the EYPP. In some cases, the pilot program was offered in community-based classrooms affiliated with nearby primary schools. The current study constitutes a formal impact evaluation of the EYPP.

1.2. Purpose, Uses, and Objectives of the Evaluation

The purpose of this evaluation is to provide rigorous evidence of the relative costs and benefits of an additional preschool year for Bangladeshi children. This information can be used by Bangladesh's DPE to inform decision making with regards to scaling a second year of pre-primary education. This study is also expected to inform the wider field of early childhood education as more low- and middle-income countries seek effective and affordable models to improve school readiness and on-time transitions to primary school.

This study will provide information regarding the effects of the EYPP on children's comprehensive school readiness, including cognitive, motor, and social development. This study will also examine the extent to which the program was implemented as intended, was compatible with existing values and resources, and benefited both boys and girls. The World Bank is conducting a cost study of the EYPP so that costs and benefits can be considered together when examining the potential of this program to improve child outcomes.

1.3. Evaluation Scope and Approach

We are conducting a randomized control trial (RCT) of the EYPP to determine its impacts on children's learning and development. In 2016, we randomly assigned 100 schools in the Meherpur district of Bangladesh to either a treatment group receiving the EYPP (n = 50) or a no-program control group (n = 50). In October 2017, we conducted a census of the area around each of the 100 schools to identify children who lived within a 15-minute walk of the school and were in the target age range—that is, children expected to enroll in typical government pre-primary in 2019 and enter Grade 1 in 2020. In the 50 treatment school catchment areas, children selected for the study were invited to participate in the EYPP at their local school during the 2018 school year. In the 50 control school catchment areas, children selected for the study would be eligible to enroll in the government pre-primary as usual in 2019 but did not have the EYPP available to them in 2018.

We collected baseline data from 1,856 children in all 100 communities in December 2017–January 2018 and midline data from 1,815 of the same children in December 2018. In December 2019, we will conduct an endline assessment of school readiness just prior to on-time enrollment in Grade 1 (2020 school year). See Exhibit 1 for a summary of the project timeline.

Exhibit 1. Project Timeline

Activity	Date
Randomization	December 2016
School census	October 2017
Baseline Data Collection	December 2017 – January 2018
Midline Data Collection	December 2018 – January 2019
Endline Data Collection	December 2019 – January 2020

1.4. The Early Years Preschool Program

The EYPP extends the preschool education available to children 4 years of age, offering younger children the possibility of receiving two years of preschool education instead of only one year (at age 5). The EYPP aims to ensure holistic development for children and to create early learning opportunities for younger children. By offering more years of preschool education, the EYPP expects to provide richer experiences for children that translate into better outcomes, not only for school readiness but also for subsequent early primary education.

In 2013, during development of the EYPP, it was reviewed by government officials, preschool implementers, and international advisors. The program is grounded in the existing Early Learning and Development Standards of comprehensive early childhood care and development policy. Considering its importance, Shishuder Jonno piloted a small EYPP model. Based on the lessons learned from the pilot, the model was adapted, improved and expanded in 2016. The expanded version pilot EYPP is also being implemented in government primary schools.

The goal of the EYPP model is to ensure holistic development for children and to create early learning opportunities for younger children. In this model, 15–20 four-year-old children enroll in a class. Children attend 5 days a week, and the length of each daily session is two hours. In most cases, the EYPP program is delivered by the same teacher as the regular one-year pre-primary class (which is a half-day program), using the same classroom, during the other half of the day. Children start these sessions in January and continue until December so that they can enroll in the government pre-primary class the next year.

The following key activities and strategies have been undertaken to achieve the EYPP goals:

- **Child enrollment.** Using primary school surveys of school catchment areas, Shishuder Jonno field staff's work with SMCs, community groups, and EYPP teachers to identify and locate children. The SMCs, community groups, and Save the Children staff set enrollment criteria such as the age of the children (4 years old), residence within a 15-

minute walk from a relevant government primary school, and parents' willingness to enroll their children in the program.

- **Curriculum development.** The EYPP curriculum offers a range of age- and developmentally-appropriate activities for children in a joyful learning environment. It follows a play-based curriculum that focuses on holistic learning across developmental domains. The curriculum aligns with the current government pre-primary curriculum. In a regular lesson plan, the teacher facilitates singing, rhymes, storytelling, outdoor and indoor play, free play in six corners, and early learning activities with the children.
- **Material development and supplies.** The EYPP uses a teacher's guide that supports teachers through each part of the curriculum, a training manual, and a list of classroom materials (e.g., developmentally appropriate books, manipulative toys, and playing materials) that should be available. As part of the EYPP's rollout, Shishuder Jonno technical staff conducted a low- or no-cost material development workshop. Teachers participated in this workshop and produced a large quantity of materials to use in their EYPP classes. Children play in the six corners using blocks, interlocking shape cards, Lego, utensils, different types of puzzles, picture cards, charts, colored pencils, and storybooks. Teachers use registers to keep records of children's attendance and notes from meetings with parents.
- **Capacity development.** The EYPP teachers receive 5 days of basic training and 4 days of refresher training provided by Shishuder Jonno early childhood staff. The training focuses on concept and skill development, early childhood development principles, classroom curriculum, techniques for working with children, and positive child behavior management strategies. In addition, teachers receive training on early literacy and math instruction and how to conduct parenting sessions.
- **Parent meetings.** Parents of EYPP learners attend monthly sessions facilitated by teachers. These parenting sessions aim to build an understanding of child development and promote the development of literacy and numeracy skills of children at home. Parents receive sessions on topics such as talking and listening, promoting reading habits, and counting and sorting things with their children.
- **Community involvement.** Shishuder Jonno staff involve SMCs and community groups in the startup activities to establish the EYPP. The SMCs are involved in recruiting the teachers. Before starting the EYPP, teachers, the SMCs, and community groups arrange inception meetings with parents to describe the objectives and importance of the EYPP

and explain the parent's role. SMCs provide partial salaries for the teachers and help to support children's enrollment in pre-primary classes after completion of the EYPP.[2]

- **Government primary teacher involvement.** The EYPP is held in collaboration with government primary schools – nearly always on the school grounds with the pre-primary teacher also teaching the EYPP. In inception meetings, head teachers welcome the EYPP children and introduce the school to them. The head teachers track the attendance of monitor and on EYPP teachers and children, monitor EYPP sessions, and provide technical assistance.
- **Monitoring.** Shishuder Jonno early childhood technical staff monitor and supervise the EYPP on a regular basis. The technical staff identify gaps and subsequently provide on-the-job support and also capacity-building support through refresher training. Save the Children's Monitoring Evaluation Accountability and Learning (MEAL) team maintains monitoring records and examines key process indicators to monitor quality.[3] Based on data provided by the MEAL team, the program team develops and implements strategies to address any implementation gaps and overcome related challenges. There is not currently any system in place for monitoring children's learning and development.

In Section 6 of this report, we describe program implementation during the year the treatment group was offered the EYPP (2018), including the extent to which programming was implemented as intended and participation rates.

1.5. Evaluation Questions

This evaluation will answer primary research questions about program effectiveness and cost-effectiveness and secondary research questions about the mechanisms of change, relative program effects for boys versus girls, and fidelity of program implementation.

Primary Questions:

1. What is the impact of offering an additional year of preschool on the cognitive development of young children in a rural setting?
2. What is the impact of offering an additional year of preschool on the social-emotional abilities and motor development of young children in a rural setting?
3. What is the benefit relative to the cost of offering an additional year of preschool with regard to learning and development outcomes?

[2] Save the Children provided the remainder of the teacher's salary. However, with Save the Children ending its support for the Meherpur district, the SMCs have taken responsibility for full payment of teacher salaries in 26 communities to date.
[3] Currently, this information is logged on paper and is not housed in a database.

Secondary Questions:

1. What is the mechanism through which the intervention affects the outcomes of interest?
2. Is the age at which the children start preschool an important factor?
3. Is the time spent in the preschool program an important factor?
4. What elements of the EYPP appear to be most important in achieving the program's impacts?
5. How does the impact of an additional year of preschool on young children's cognitive development differ between girls and boys?
6. How does the impact of an additional year of preschool on young children's social-emotional development and motor development differ between girls and boys?
7. What are the operational and community conditions for program implementation?
8. To what extent is the program implemented with fidelity?
9. What do teachers think about the training activities and materials? How can the training be improved?
10. What are the challenges that teachers encountered when implementing the EYPP curriculum?

We will answer these questions in this midline report and provide updated findings following endline (in 2020).

2. Study Design

In this section, we present our approach to answering the evaluation questions including our two main empirical specifications.

Identification strategy. This study is a longitudinal, randomized control evaluation with repeated measures at the child level. In large-scale social experiments, it is typical to estimate program effects by using the experimental data within a longitudinal design, including a difference-in-differences design (DD), which compares the average change over time for the treated group to the average change over time for the control group. The DD estimates represent intention-to-treat (ITT) estimates—that is, the average program impact for children who reside in a treatment village, regardless of whether any of them took part in any program activities. To obtain greater precision over typical DD estimates, we use an analysis of

covariance (ANCOVA) design where we control for the baseline value of the outcome measure using the following specification:

$$\Delta Y_{is} = \alpha_1 + \beta_1 Treat_s + \delta Y_{is(t-1)} + \gamma_1 X_{it} + \Delta\varepsilon_{is} \quad [1]$$

Where ΔY_{is} is the first difference of outcome Y for child i in village s between midline and baseline (i.e., ΔY_{is}=$Y_{is,1} - Y_{is,0}$); $Treat_s$ is a dummy variable equal to 1 if child i belongs to a treatment village; $Y_{is(t-1)}$ is the baseline value of the outcome variable; X_{it} is a vector of time variant characteristics; and $\Delta\varepsilon_{is}$ is a first difference of the error term. The estimate of β_1 represents the ITT effect of the program. Because villages were randomly assigned, our ITT estimate represents the causal effect of the program for those children who live in the treated community.

Note that this analysis does not account for whether children actually attended EYPP instead of other preschool programming. To estimate the impact of the program for those who attended EYPP preschool programming, we could estimate the following specification:

$$\Delta Y_{is} = \alpha_2 + \beta_2 EYPP_{is} + \gamma_2 X_{it} + \Delta\varepsilon_{is} \quad [2]$$

Where $EYPP$ is a dummy equal to 1 if child i in village s received any program activities and 0 otherwise. However, estimating equation [2] for those who took part in any program activities may result in biased program impacts, given that families who decide to participate in the program may be very different in observed and unobserved ways to those who do not participate, which may ultimately affect program impacts. To address this issue, we conducted an instrumental variable (IV) approach in which we used the random assignment of communities as an instrument for program participation. The estimated impact is known as the local average treatment effect (LATE) because it estimates the effect of the EYPP program only for those children who actually attended EYPP just because they were assigned to the treatment group. We used cluster-robust standard errors to account for the clustering of children within schools.

3. Midline Data Collection

Midline data were collected according to plan. In this section, we (1) review the objectives of the midline data collection, (2) describe sampling and attrition, (3) revisit baseline power calculations and discuss how program uptake and study attrition at midline may affect the study's power, (4) describe the instruments used at midline, (5) describe the training of enumerators for midline data collection, and (6) provide information regarding how the midline

data collection was carried out and the extent to which midline data collection happened according to plan.

3.1. Objectives of the Midline Data Collection

Midline data collection was carried out for two main purposes. First, we intended to follow up with all children and households surveyed at baseline to enable analysis of changes in key outcomes over time. For instance, we can examine how children's school readiness has changed since baseline, if at all. These data will be used again and compared to outcomes at endline.

Second, and relatedly, midline data collection is important for determining if the EYPP produces short-term impacts following the first year of preschool education that even if those were to subside by endline. In other words, midline data allow us to examine whether children attending EYPP schools outpace their counterparts who did not have the EYPP available, and whether these differences remain throughout the second year of preschool or decrease because of catch-up growth among children who did not attend the EYPP.

3.2. Sampling and Attrition

One hundred schools in the Meherpur district of Bangladesh are participating in this study. These schools were selected and randomly assigned in 2015 using the following process, with the final count of schools by union in Exhibit 2 below:

1. From the pool of communities without the pilot EYPP across the three *upazilas* in Meherpur (*N* = 238), we removed all community-based schools (*n* = 90), leaving us 148.
2. Where communities had multiple schools, we restricted the sample to one school to avoid potential crossover effects, leaving us with 105 schools.
3. Because we needed 100 schools for the study, we randomly dropped five of the 105.
4. We stratified the 100 schools by the 20 unions[4] to reduce potential differences that could be driven by geography or context, then randomly assigned 50 schools to the EYPP group and 50 schools to a business-as-usual control group.

In the 50 EYPP schools, the program was first introduced in the beginning of 2017, so the first group of children have just completed the program (these children will not be included in the study). In six of the 50 EYPP schools, the program was not offered in 2017 but started in 2018. See Appendix A for details on group assignment by upazila and union.

[4] During our randomization process, we selected half of the schools in a union for the treatment group and half for the control group. When there was a union with an odd number of schools, we randomly selected on school to remove and then sampled from the remaining schools. Appendix A provides the breakdown of sampled schools by Upazila and Union.

During an October 2017 visit to Meherpur, we learned that the EYPP schools typically accepted 18–20 children and no more than 25. The EYPP staff expressed a preference for enrolling children within proximity to the school and giving priority to children who live closer to the school or center. This preference is guided by the experience that children who live further away are less likely to regularly attend and their parents are less likely to be involved in the program. All schools visited stated that they did not expect any children to participate who lived further than a 15-minute walk from the EYPP class.

Data International conducted a census of every household within a 15-minute walk of the primary school. The resulting census included a total of 36,806 households across the 100 study communities. For each household, if there were any children aged 3–6 years old, enumerators recorded each child's name and date of birth, the father's name, whether the child was currently in an education program (and if yes, what type), and what the family's plan was for the child in 2018 (stay home or participate in an educational program). Enumerators also recorded the exact household location using GPS coordinates and asked how many minutes it would take the child to walk from the home to the primary school.

The target sample included all children in the census areas born from January 1, 2013, to December 31, 2013 (because on-time enrollment in government pre-primary school for these children would be in January 2019). In a substantial majority of cases (exact figure unknown), children's dates of birth were verified using the Extended Program of Immunization (EPI) card or a birth certificate. If these documents were unavailable (even after parents were encouraged to search), enumerators recorded what the parent reported as the child's date of birth. We identified a total of 1,986 children born in 2013. We did not exclude any age-eligible children based on any other criteria (e.g., children with disabilities were included in our sample pool).

AIR agreed to sample an average of 20 children in each of the 100 study communities. Many communities had fewer than 20 eligible children. Because EYPP centers will typically enroll up to 25 children, for both treatment and control communities with 25 or fewer children we included all eligible children in the study (with parental consent). In the 20 communities (14 treatment and 6 control) with over 25 eligible children, we drew a random subsample of 25 for inclusion in the study, resulting in a total of 1,903 children targeted for our study.

Exhibit 2 shows the sample recruited at baseline for this study and the number retained at midline. Recruitment rates were very high among children sampled for this study. All communities and EYPP schools included in the sample participated in baseline data collection as planned. Of the 1,856 children originally recruited for this study, 908 were girls and 948 were boys. We also realized very low attrition rates of only 2.2 percent at midline, with 1,815 children being re-interviewed at follow-up.

Exhibit 2. Study Sample and Attrition

Unit	Target Sample	Recruited Sample	Midline Sample	Attrition rate
Children/families	1,903	1,856 (97.5%)	1,815	2.2%
EYPP schools	50	50 (100%)	50 (100%)	0.0%

Although overall attrition rates were low, we still tested for differential attrition between treatment and control groups (see Exhibit 18 in Section 4). Our findings suggest the study will not suffer from bias resulting from differential attrition among the treatment arms.

3.3. Power Analysis

Power analysis refers to a statistical measure of a given sample size and study design's ability to detect program treatment effects. A study that is underpowered may not be able to detect treatment effects that may be present and relevant but that are too small for the study to measure because of an inadequate sample size.

Exhibit 3 shows the assumptions and the minimum detectable effect (MDE) for the International Development and Early Learning Assessment (IDELA) scores, a key outcome measure for this study. The intra-class correlation (ICC), proportions of variances (R12 and R22), and average number of children per school are calculated from the baseline data. The child-level covariates include characteristics of parents and households and the age and sex of the child. The community-level covariates include infrastructural characteristics and distance to various services. We calculate the MDE using the software tool PowerUp![5] Assuming perfect take-up (i.e., all the sampled children in the baseline in treatment communities enroll in the preschool), the smallest standardized mean difference in IDELA score we can detect is 0.19. Our original estimates assume a take-up of 80 percent, which implied we would be able to detect a difference of 0.24 (= 0.19/0.80) standard deviations in the IDELA scores between treatment and control groups. In reality, we observe a 90 percent take-up of treatment, implying that we are able to detect a difference of 0.21 (0.19/0.90). Recent studies assessing children's school readiness as a result of increased access to preschool programming find average effects of 0.30 standard deviations, suggesting our study is adequately powered to detect reasonable impacts on these outcomes (Bonilla et al., 2018; Dowd et al., 2016; Yousafzai et al., 2018).

[5] Dong, N. & Maynard, R. A. (2013). PowerUp!: A tool for calculating minimum detectable effect sizes and sample size requirements for experimental and quasi-experimental designs. *Journal of Research on Educational Effectiveness, 6*(1), 24–67.

Exhibit 3. Balance of Baseline Characteristics between Treatment Arms if Remained in Sample

Assumptions		Comments
Alpha level (α)	0.05	Probability of a Type I error
Two-tailed or one-tailed test?	2	
Power (1 – β)	0.80	Statistical power (1 – probability of a Type II error)
Rho (ICC)	0.11	Proportion of variance in outcome that is between clusters
P	0.50	Proportion of schools randomized to treatment
R12	0.12	Proportion of variance in child-level outcome explained by child covariates
R22	0.31	Proportion of variance in school-level outcome explained by school covariates
g*	10	Number of school covariates
n (average cluster size)	19	Mean number of children per school
J (sample size [# of clusters])	100	Number of schools
MDE	**0.19**	**Minimum detectable effect**

3.4. Instruments

The midline assessment included a family questionnaire for both the treatment and control groups, school readiness assessment for children in both the treatment and control groups, and a teacher questionnaire for EYPP teachers (treatment group only). The family questionnaire and school readiness assessments were also administered at baseline, but the EYPP teacher questionnaire was newly introduced for midline (because we needed to wait for the program to have been provided before we could ask questions about it). In this section, we provide more details regarding each of these tools.

Midline Family Questionnaire

The purpose of the family questionnaire was to gather information on the characteristics of the study children and their home environments (Exhibit 4). To update this tool for midline, we eliminated questions in areas unlikely to change (such as parental education, and whether the family had electricity – nearly all already did at baseline). We also added questions about children's participation in preschool programming (whether EYPP or other programming). To administer this tool, enumerators read questions and response options aloud to respondents (parents or guardians of the study children). See Appendix E for a copy of this instrument.

Exhibit 4. Domains and Topics Covered in the Midline Family Questionnaire

Domain	Topics
General family information	Presence of other school-age children in the home, enrollment of other school-age children in school
Child characteristics	Child health
Home environment/ parenting practices	Presence of reading materials in the home, presence of toys and learning materials in the home, family learning support activities with study child
Child preschool education	Enrollment status, dosage of preschool participation, satisfaction with preschool, reasons for nonparticipation

School Readiness Assessment

Children's school readiness was assessed with the IDELA, which has been widely used in Bangladesh (and was used here at baseline). We did not make any modifications in the tool for midline. The assessment was administered to children one-on-one by a trained enumerator. See Exhibit 5 for the domains and topics covered in the assessment. We are unable to include a copy of the IDELA in this report due to copyright restrictions.

Exhibit 5. Domains and Topics Covered in the School Readiness Assessment

Domain and topics	Topics
Social and emotional development	Self-awareness, friends, emotional awareness/regulation, empathy/perspective taking, solving conflict
Emergent numeracy	Comparison by size and length, sorting and classification, shape identification, numeral identification, one-to-one correspondence, addition and subtraction, puzzle completion
Emergent literacy	Expressive vocabulary, print awareness, letter identification, first-letter sounds, emergent writing, oral comprehension
Executive function	Short-term memory, inhibitory control
Fine motor skills	Copying a shape, drawing a person, folding paper
Gross motor skills	Hopping
Approaches to learning	Attention, confidence, concentration, persistence, mastery motivation, interest

EYPP Teacher Questionnaire

We introduced a questionnaire at midline for teachers of the EYPP classes (Exhibit 6). We asked the EYPP teachers about their perceptions of the program, its alignment with children's developmental needs, the extent to which they received adequate training and support to implement the program well, and any recommendations they wished to share to inform program improvements. Please see Appendix F for a copy of this instrument.

Exhibit 6. Domains and Topics Covered in the EYPP Teacher Questionnaire

Domain	Topics
Perceptions of the EYPP	Need, reception by children
Alignment with children's developmental needs	Extent to which the curriculum builds children's skills, extent to which curriculum is too easy and/or too difficult
Preparation to teach the EYPP	Adequacy of training and support, availability of adequate resources, ability to manage class
Recommendations	Open questions about strengths of the EYPP and where improvements are needed

3.5. Enumerator Training

A total of 32 data collectors and four field supervisors were trained. For the midline data collection, effort was made to recruit and train all field supervisors and data collectors who worked on the baseline survey in 2017. All supervisors and 85 percent of the data collectors from the baseline team were part of the midline data collection team. As with baseline, all field staff were employed by Data International, and all were Bangladeshi. The AIR project lead was present at the training to provide support as needed, and technical input was provided to Data International's research team by Save the Children's Dhaka and Meherpur offices.

Experts from Save the Children Bangladesh and senior members of Data International provided intensive training on the IDELA and on the household instrument November 25–30, 2018. This training included practice with children and families in Meherpur who were not in the study sample. In addition, all supervisors were trained separately on how to conduct the teacher interview. The data collectors and field supervisors underwent orientation and training in the use of electronic data collection devices (tablets) with preinstalled IDELA tools and the household survey instrument.

Upon completion of the training, all data collectors and field supervisors signed the AIR Participant Protection Assurance Form. They also attended a briefing on Save the Children's Child Safeguard Policy organized by Save the Children's Meherpur field office.

3.6. Data Collection Process

The midline data collection was conducted between December 1, 2018, and December 28, 2018, and included following up with children and their families sampled at baseline. Rural Bangladesh does not have street or unique household addresses. Nevertheless, the data collectors did not encounter any difficulties in revisiting the sampled households. Almost all the midline data collectors had been involved in carrying out baseline data collection; hence, they were familiar with the localities. While 16 data collectors were entrusted with the IDELA administration, the remaining data collectors began collecting household data. In addition to field supervision, the supervisors were responsible for conducting the EYPP school teacher interview.

Completion of Assessment Instruments

With the goal of interviewing all children and households interviewed in the baseline survey, the midline data collection involved several steps. The first step involved tracking the children enrolled in the study. Once these children were identified, the IDELA test was administered, followed by home visits to conduct the household interview.

Step 2 required tracking those children that are not currently enrolled in the EYPP or admitted to a control school. To track each child, the Global Positioning System (GPS) coordinates collected at baseline were used to locate the homestead. Once the household was tracked, identification of the child was ensured by verifying the name of his or her parents.

Step 3 involved tracking children who could not be found at their residence because they were visiting relatives during school holidays or their family had permanently migrated to a different location. A total of 52 such children belonged to this category. Subsequent visits to their residence or visiting a relative's place located within a few kilometers enabled interviewing 11 of these children and their parents. A summary of the status of the 41 children that could not be interviewed is provided in Exhibit 7.

Exhibit 7. Reasons for Attrition at Midline

Reason	Total
Migrated to a different upazila	29
Vacation/visiting relatives	12
Total	41

Challenges

There were minimal challenges to the successful completion of midline data collection. *Hartals* (strikes) occurred in Meherpur during the data collection, but the political situation was stable.

The issues encountered are as follows:

- In some cases, multiple household visits were needed to complete the midline data collection. During the first household visit, several of the children, along with their mothers, had gone to visit their maternal or paternal grandparents' houses or to some other relatives' homes following completion of the school final examination.
- In the case of sick children, multiple visits were needed to complete the IDELA.
- Bystanders and onlookers during the IDELA sessions adversely affected the children's performance. During the IDELA administration, people from the locality, especially adults, were more inclined to try to observe the proceedings than they had at baseline. Enumerators felt that this was due to increased interest in children's learning as they grew older. Children tended to be shy and uncooperative in such an environment. All onlookers were politely requested to vacate the premises where the IDELA was conducted (although children were always in sight and/or hearing of caregivers). Due to such external factors, IDELA administration was carried out in an environment more distracting to the children than at baseline.

4. Characteristics of Children and Families

In this section we describe children's physical well-being, household access to physical health services, and parents' monitoring of their children's overall health. We assess these outcomes for all children in our study and present comparisons by treatment arm and gender. Children's well-being and their access to health supports are important contextual factors in our logic model. Children who are unwell are likely to stay home from preschool. When they do come to school, undernutrition and illness can hinder their ability to take part in learning. We examine the moderating effects of these indicators in Section 7.

4.1. Children's Health

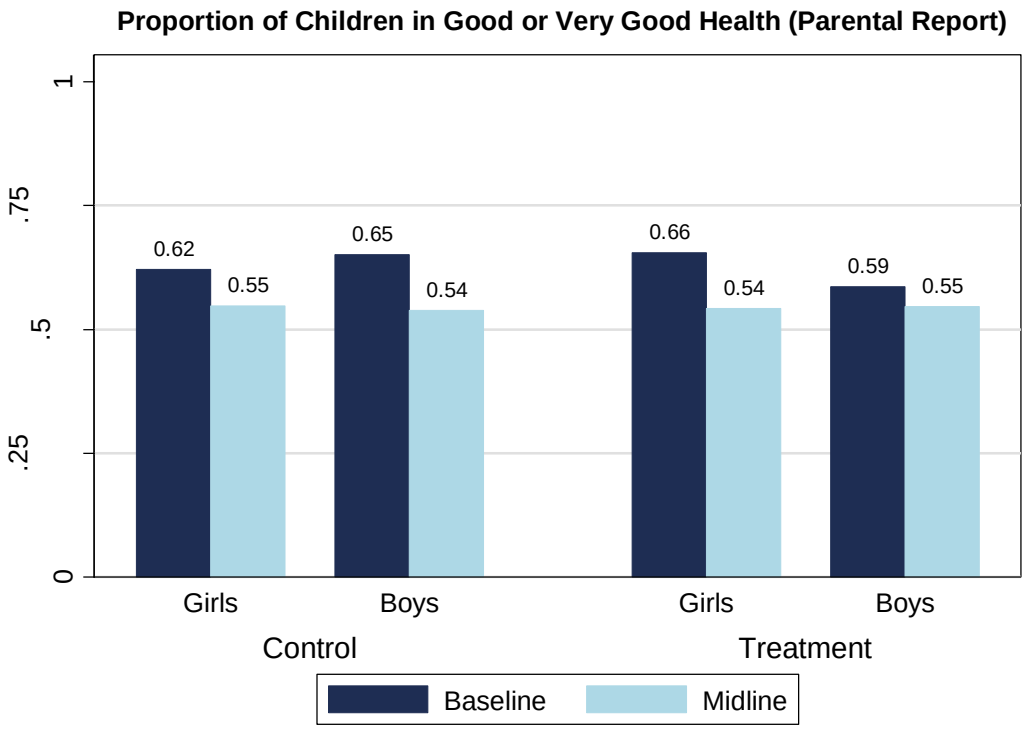
Parents were asked to rate their child's overall heath and to identify any recent issues affecting their child's well-being. Parents were also asked whether they had recently given their child deworming treatment and about the frequency with which they monitored their child's growth.

Children's Overall Health

Most parents characterized their child's physical health as good at midline (Exhibit 8). About 43 percent of parents reported that their child was in good health, and about 11 percent reported that their child was in very good health overall. More parents described their child's overall health as moderate at midline than at baseline. Among boys, 34 percent were described by their parents as having moderate health at baseline compared to 41 percent at midline. Among girls, 33 percent were described by their parents as having moderate at baseline compared to 40 percent at midline. We did not find any significant differences between children in the treatment group versus those in the control group at baseline or midline, nor did we find differences between boys' and girls' overall physical health status. Similarly, we find that the program did not affect children's reported health status.

We further created an indicator for reported good health defined as parents' reporting their child's health to be 'very good' or 'good.' We again find no evidence of impacts on this outcome, and, similarly, no statistically significant differences between treatment and control at either baseline or midline. However, we do find statistically significant differences between baseline and midline amongst girls and boys in the control group as well as girls in the treatment group. Approximately 60 percent of all treatment and control children were reportedly in good health.

Exhibit 8. Children's Health Status by Gender



Differences in children's recent illnesses between baseline and midline were minor and not statistically significant. As shown in Exhibit 9, over half of the children in our study suffered from a respiratory illness in the past two weeks across treatment groups and waves: with approximately 57 percent of both treatment and control girls ill at baseline and 56 percent of control and 54 percent of treatment sick at midline. The percentage for treatment boys with respiratory illness fell slightly, from 56 percent at baseline to 50 percent at midline while the proportion remained unchanged at 54 percent for boys in the control group.

The number of children reportedly suffering from diarrhea remained low across our sample with less than 5 percent of children suffering from diarrhea at baseline compared to a little over 5 percent at midline. We find no evidence of differences in the proportion of children reporting diarrhea over time between our treatment and control groups as the reported incidence increased at the same rate amongst groups. We likewise find no significant differences over time for boys or girls between treatment arms. See Exhibit 10 for statistical details.

Exhibit 9. Children's Recent Illnesses

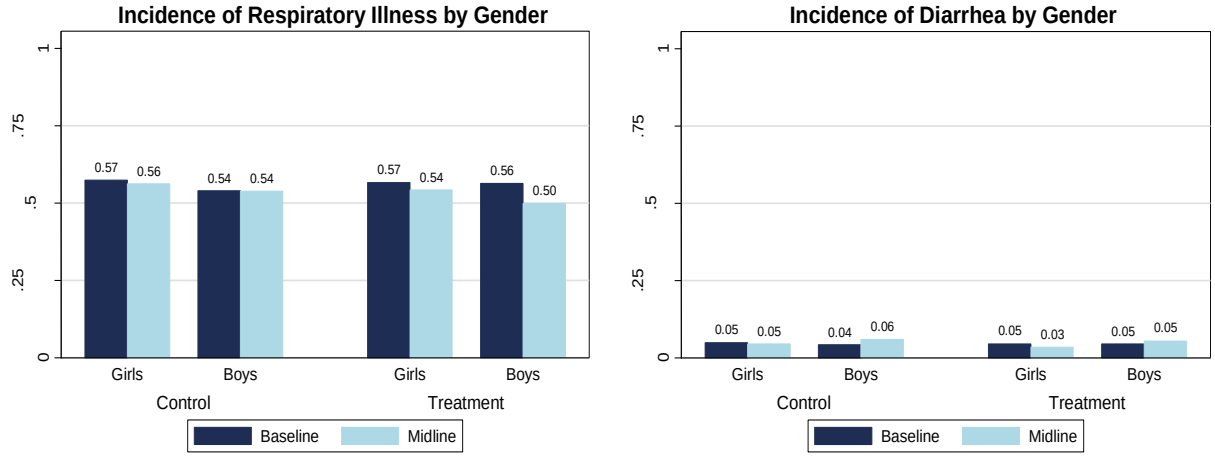


Exhibit 10. Children's' Health Outcomes by Gender

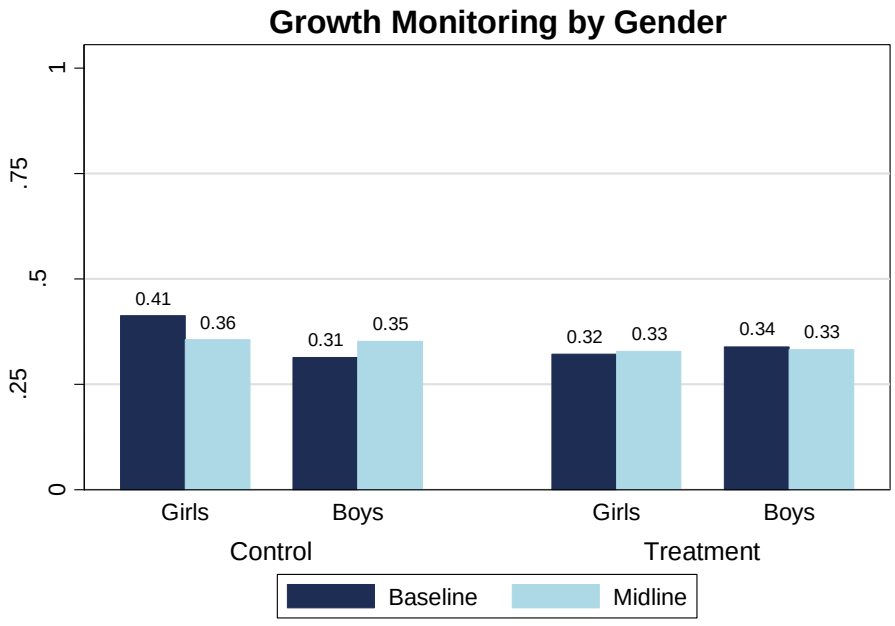
	Boys					Girls				
	Baseline		Midline			Baseline		Midline		
	Mean	N	Mean	N	p-value of diff	Mean	N	Mean	N	p-value of diff
Reported child health status:										
Very good	9.61	947	11.39	931	0.41	12.67	908	10.76	883	0.33
Good	51.85	947	42.86	931	**0.00**	51.32	908	43.71	883	**0.01**
Moderate	34.21	947	41.03	931	**0.01**	32.82	908	40.43	883	**0.00**
Bad	4.01	947	4.40	931	0.70	2.86	908	4.76	883	0.06
Very bad	0.32	947	0.32	931	0.98	0.33	908	0.34	883	0.97
Received deworming (last 6 months)	0.67	930	0.67	919	0.99	0.66	892	0.66	874	0.96
Had diarrhea (last 2 weeks)	0.04	948	0.06	930	0.15	0.05	908	0.04	882	0.51
Had cough or difficulty breathing (last 2 weeks)	0.55	948	0.52	931	0.19	0.57	908	0.55	883	0.53
Reported occurrence of last deworming treatment:										
Less than 1 month ago	18.19	698	17.55	815	0.74	13.68	665	16.78	751	0.12
1 - 3 months ago	14.61	698	16.93	815	0.25	15.64	665	16.64	751	0.69
3 - 6 months ago	11.46	698	13.25	815	0.31	10.83	665	11.45	751	0.73
6 - 12 months ago	11.17	698	13.25	815	0.29	10.53	665	15.05	751	**0.02**
> 12 months ago or never	44.56	698	39.02	815	**0.03**	49.32	665	40.08	751	**0.00**

Note. Bold *p* values indicate significance at the .05 level.

Household Access to Supports for Child's Health

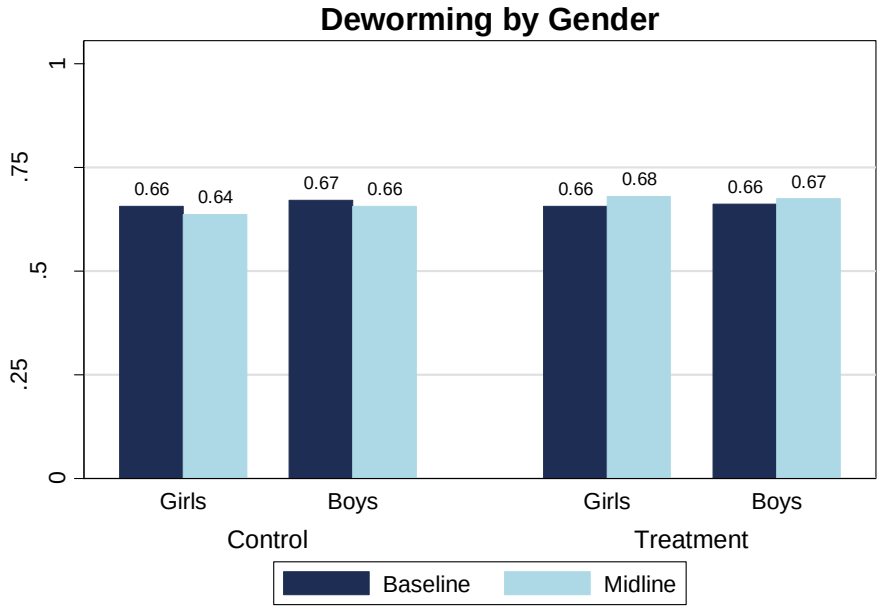
We examined children's access to support for their health specifically looking at growth monitoring and deworming treatments. For growth monitoring, parents were asked to report the last time their child received growth monitoring with responses ranging from less than a month ago to over a year or never monitored/weighed. Routine growth monitoring is the preferred practice of public health professionals to catch potential issues early on. We, therefore, constructed an indicator identifying whether the child received growth monitoring within the last year. We found no program impacts on growth monitoring. While we found a marginal difference in girls receiving growth monitoring within the past year at baseline between treatment and control groups (41 percent of girls in the control group had not received monitoring compared to only 32 percent of girls in the treatment group), that difference disappeared by midline (see Exhibit 11). Differences in growth monitoring between boys and girls were minor. Fifteen percent of boys and 14 percent of girls had had their growth checked in the month before data collection at midline compared to 13 percent of boys and 10 percent of girls at baseline.

Exhibit 11. Proportion of Children Receiving Infrequent Growth Monitoring (> 1 year)



As shown in Exhibit 12, deworming rates remained mostly unchanged between baseline and midline and between treatment and control. Rates of deworming in the control group for both boys and girls changed little, and we find no statistically significant differences amongst or between treatment groups or genders.

Exhibit 12. Rates of Deworming by Gender



4.2. Household Educational Environment

In this section we describe the home environment of study children by looking at factors that support and encourage children's learning within the home. The household's educational environment and the support children receive from their parents and other adults in learning are important potential predictors of attainment and performance in preschool.

Presence of Out-of-School Children in the Home

The presence of out-of-school children in the home can be a risk factor for children in the study. If the family has an older school-aged child who is not attending school, this indicates that the family either is having difficulty affording schooling or is disengaged from education. The presence of older out-of-school children in the home increased, overall, between baseline and midline for both boys and girls. Among all study children at midline, 5 percent of girls had a household member aged 7–10 years who was out of school, and 8 percent had a household member aged 11–15 years who was out of school. Among boys, 3 percent had a household

member aged 7–10 years who was out of school, and 5 percent had a household member aged 11–15 years who was out of school. We do not find any differences in the proportion of households with out-of-school children between treatment and control groups at baseline or midline. See Exhibit 13 for details.

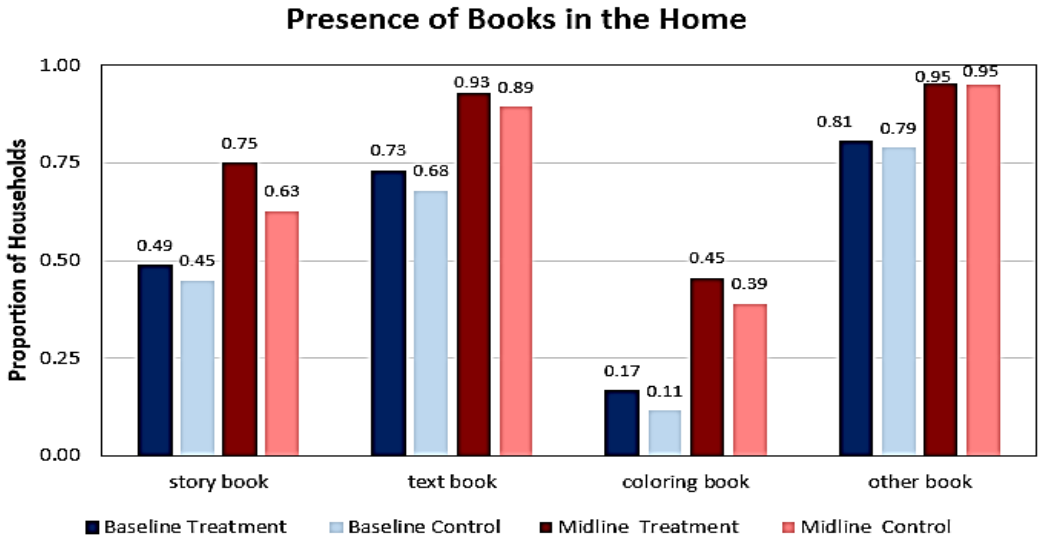
Exhibit 13. Presence of Out-of-School Children in the Home

	Baseline		Midline	
	Girls	Boys	Girls	Boys
7 to 10 years old out of school children	0.7%	0.2%	5.2%	3.1%
11 to 15 years old out of school children	1.2%	1.7%	7.8%	5.1%
Percentage of out of school children in study households	1.9%	1.9%	7.5%	20.0%
Percentage of out of households with at least 1 out-of-school child	1.8%	1.9%	7.5%	14.3%

Presence of Reading Materials in the Home

There was a statistically significant increase in presence of reading materials in homes overall between baseline and midline, but we find no significant differences between the treatment and control groups. The reasons for these increases are unclear based on the information we have available. As shown in Exhibit 14, the percentage of homes that had storybooks or picture books for children increased from 47 percent at baseline to 69 percent at midline, but this increase was comparable among across the study arms as well as among girls and boys in our sample. Additionally, textbooks were available in 91 percent of homes at midline compared to 71 percent at baseline. The presence of coloring books also increased from 14 percent at baseline to 43 percent at midline. At baseline, children in treatment households were slightly more likely to have coloring books and textbooks than children in control households: 7 percent of treatment households have coloring books compared to 12 percent of control households, and 73 percent of treatment households have textbooks compared to 68 percent of control households. These differences mostly disappeared at midline.

Exhibit 14. Types of Reading Material Present in Study Households



Presence of Toys in the Home

Overall access to play materials remained high at midline. Manufactured toys were available in 98 percent of all study homes at midline. The percentage of homes with games that teach about colors and shapes increased from 19 percent at baseline to 44 percent at midline. Similarly, the percentage of homes with games that teach about numbers rose from 23 percent at baseline to 55 percent at midline. Exhibit 15 shows the proportion of children with each type of toy in their household along with the statistical significance of the changes over time. Children, overall, were more likely to have all types of toys (with the exception of homemade toys and household objects) at midline than baseline. We find no significant differences between treatment groups at baseline, but we do observe more children in treatment communities having puzzles, toys that teach about colors, sizes or shapes, and toys or games that teach about numbers or counting than those in control communities at midline.

Exhibit 15. Types of Play Materials Available in Study Households

Type of play material in household	Baseline	Midline	p-value of diff
Any Toy	99.2%	99.7%	0.13
Homemade toys, such as stuffed dolls, cars, other toys made at home	82.8%	84.1%	0.57
Toys from a shop or manufactured toys	96.2%	97.5%	**0.03**
Household objects such as bowls, cups, or pots	91.9%	91.1%	0.48
Objects found outside such as sticks, stones, or leaves	93.2%	97.5%	**0.00**
Drawing or writing materials	38.7%	75.4%	**0.00**
Puzzles (even a two-piece puzzle counts)	6.8%	11.2%	**0.00**
Two- or three-piece toys that require hand-eye coordination	48.6%	79.6%	**0.00**
Toys that teach about colors, sizes, or shapes	18.8%	44.3%	**0.00**
Toys or games that help teach about numbers or counting	22.9%	55.0%	**0.00**

Note. Bold *p* values indicate significance at the .05 level.

Stimulation in the Home for Child Development

More study children took part in activities with adults in their households at midline than at baseline. We expect that these changes are because as children became older, families felt that it was increasingly important for them to engage in learning-oriented activities – but we cannot be certain about this. As shown in Exhibit 16, at midline 80 percent of children had read with an adult in their household in the prior week compared to 69 percent at baseline. Similarly, 70 percent of children had played a counting or number game with an adult at midline compared to 52 percent at baseline. We detected similar increases in almost every other type of activity except playing simple games, for which the percentage of children participating was relatively stable (52% at baseline, 51% at midline).

We find evidence of a significant difference in the proportion of families that reported taking the child outside the home at baseline between treatment and control groups with 69 percent of treatment households reporting the activity while 77 percent of the control groups reported the same. At midline, this difference is no longer found, however, we do see that children in treatment households are significantly more likely to have their family draw things with them (9.6 percentage points) and show or teach them something new (10.3 percentage points) than children in control households.

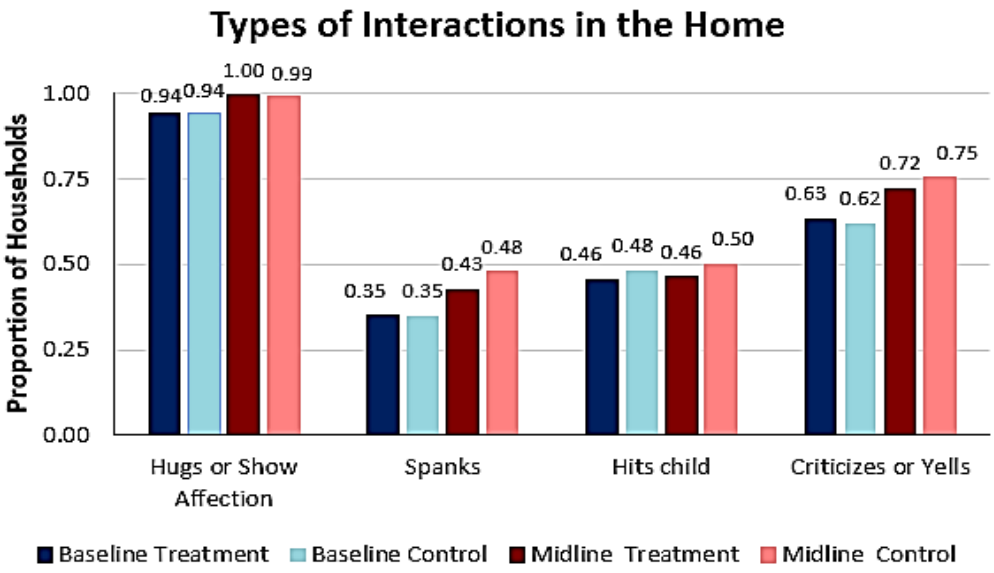
Exhibit 16. Study Child Participation in Activities With Household Member in Past Week

Type of activity	Baseline			Midline		
	Treatment	Control	*p*-value of diff	Treatment	Control	*p*-value of diff
Read book	68.6%	68.4%	0.956	83.8%	75.8%	**0.002**
Told stories	68.2%	66.8%	0.749	74.3%	73.0%	0.704
Sang songs or lullabies	63.5%	65.2%	0.675	66.2%	62.5%	0.344
Took child outside	69.6%	77.1%	**0.011**	73.8%	76.5%	0.361
Played simple games	53.2%	49.5%	0.402	53.0%	47.6%	0.177
Named objects or drew	24.0%	22.4%	0.564	50.0%	38.8%	**0.002**
Showed or taught something new	54.6%	58.0%	0.466	68.8%	62.0%	**0.043**
Taught the alphabet or encouraged learning letters	79.5%	79.1%	0.904	90.3%	87.8%	0.135
Played a counting game or taught numbers	55.0%	49.3%	0.240	70.0%	70.0%	0.999

Note. Bold *p* values indicate significance at the .05 level.

The prevalence of both positive and negative interactions between children and caregivers increased between baseline and midline. However, these baseline-midline increases were not statistically different for treatment and control. There were also no treatment-control group differences. Exhibit 17 shows that positive interactions were more prevalent than negative interactions. Yet, negative forms of interaction were also common in both research groups.

Exhibit 17. Socio-Emotional Interaction at Home in Past Week



5. Baseline Equivalence

As discussed in Section 2.2, we find no evidence of differential attrition in our sample, suggesting that baseline equivalence was maintained. To confirm this assumption, we present in this section results testing for any imbalances in baseline characteristics across treatment and control groups based on the midline analytic sample. Specifically, we report mean differences in baseline values of primary outcomes (test scores) and control variables (household characteristics) between the treatment and control groups. For consistency, we assess balance on the same household characteristics as we did at baseline. In order for the fidelity of the baseline randomization to hold, we need to ensure balance is maintained between these groups in subsequent rounds (i.e., there is no differential attrition).

The means and the *p* values of the *t*-tests for these variables are given in Exhibit 18 and Exhibit 19, respectively. The balance tables provide a strong indication that the equivalence of groups based on baseline characteristics is maintained—that is, the average characteristics of treatment and control groups are statistically equivalent. We tested all the outcome measures and control variables for statistical differences between the two groups using *t*-tests of differences in means across groups. None of the 20 variables analyzed here was statistically significantly different, suggesting that the groups are balanced on baseline characteristics and that any differences in scores we observe at midline are due to treatment.

Exhibit 18. Balance in Baseline Household Characteristics Between Treatment and Control Groups at Midline

	(1) Control		(2) Treatment		*t*-test (1)-(2)
Variable	***N***	**Mean (*SE*)**	***N***	**Mean (*SE*)**	***p*-value**
Number of household members	842	4.68 (0.07)	972	4.78 (0.06)	0.32
Mother can read	840	0.84 (0.02)	968	0.84 (0.01)	0.65
Mother can write	840	0.84 (0.02)	967	0.85 (0.01)	0.44
Father can read	842	0.64 (0.02)	966	0.65 (0.02)	0.65
Father can write	842	0.64 (0.02)	966	0.66 (0.02)	0.50
Children aged 7–10 years in home	842	0.26 (0.02)	972	0.27 (0.02)	0.70
Children aged 7–10 years in school	842	0.26 (0.02)	972	0.27 (0.02)	0.68
Children aged 11–15 years in home	842	0.37 (0.02)	972	0.36 (0.02)	0.68
Children aged 11–15 years in school	842	0.37 (0.02)	972	0.35 (0.02)	0.38
Number of rooms in the home	841	2.46 (0.06)	972	2.50 (0.04)	0.56
Household has electricity	842	0.99 (0.00)	972	0.98 (0.01)	0.42
Monthly food expenditure (*Taka*)	842	7060.04 (184.78)	971	7140.42 (199.75)	0.77
Monthly education expenditure (*Taka*)	549	1,391.48 (93.10)	674	1,550.33 (99.30)	0.24
F-test of joint significance (*p* value)					0.57
F-test, number of observations					1,215

Note. Standard errors are clustered by community. Bold *p* values indicate significance at the .05 level.

Exhibit 19. Balance in Baseline IDELA Scores Between Treatment and Control at Midline

	(1) Control		(2) Treatment		*t*-test (1)-(2)
Variable	***N***	**Mean (*SE*)**	***N***	**Mean (*SE*)**	***p*-value**
Domain score: motor development	843	41.30 (1.38)	971	42.99 (1.08)	0.34
Domain score: emergent literacy	843	28.08 (1.07)	971	29.13 (1.05)	0.50
Domain score: emergent numeracy	843	34.23 (1.07)	971	35.32 (1.19)	0.50
Domain score: social and emotional	843	30.02 (0.97)	971	32.06 (0.98)	0.14
Domain score: executive function	843	47.52 (1.64)	971	50.31 (1.94)	0.27
Domain score: approaches to learning	843	54.62 (1.77)	971	50.31 (1.51)	0.61
Total IDELA score	843	33.41 (1.02)	971	34.87 (0.95)	0.29
F-test of joint significance (*p* value)					0.75
F-test, number of observations					1,814

Note. Standard errors are clustered by community. Bold *p* values indicate significance at the .05 level.

6. Children's Participation in Pre-Primary Education

In the 50 treatment catchment areas, children selected for the study were invited to participate in the EYPP at their local school in 2018, while those in control areas would be eligible to attend government preschools the following year. Even so, there were no rules in place that required children in treatment areas to attend the EYPP or that prevented children in control areas from attending pre-primary schooling in 2018.

6.1. Children's Participation in Programming

Exhibit 20 shows that, in accordance with the study's randomization, half (50%) of the children in the treatment areas attended the EYPP, and only one child in the control group reportedly attended the EYPP (so there was very minimal crossover). Of the children who attended the EYPP, program attendance records showed high average participation (167 days over the

course of the school year) and an average attendance rate of 94 percent. There was little variation among the children's participation rates, with only 19 of the 540 children (4%) attending at a rate below 80 percent.

In control communities in 2018, 58 percent reportedly had some form of pre-primary education in the past year. In fact, 75 percent of the total sample attended some form of preschool in 2018. Children in our study attended a variety of preschool programs, including *madrasa* programs, BRAC preschool, private preschool, and other public preschool programs. The remainder of this section discusses the proportion of children that attended each type of program by treatment group.

Exhibit 20. Study Children's Participation in Pre-Primary Education

Preschool Participation	Treatment Group			Control Group		
	Girls	Boys	Total	Girls	Boys	Total
No preschool	48 10.4%	50 9.8%	98 10.1%	173 41.0%	179 42.6%	352 41.8%
EYPP	241 52.3%	244 47.7%	485 49.9%	0 0.0%	1 0.2%	1 0.1%
Other public preschool/school	74 16.1%	83 16.2%	157 16.2%	96 22.7%	78 18.6%	174 20.7%
Madrasa/Islamic Foundation school	55 11.9%	81 15.9%	136 14.0%	74 17.5%	70 16.7%	144 17.1%
BRAC preschool	10 2.2%	17 3.3%	27 2.8%	28 6.6%	32 7.6%	60 7.1%
Private preschool	33 7.2%	36 7.0%	69 7.1%	51 12.1%	60 14.3%	111 13.2%

As discussed, almost half of the children in the treatment group attended the EYPP, and 40 percent attended a mix of other preschool programming. Of these latter, 157 children (16.2%) attended some other public preschool program, 136 children (14%) attended an Islamic Foundation program, 27 children (3%) attended the BRAC preschool program, and 69 (7.1%) attended a private preschool program. Girls in the treatment group were more likely to attend some other public preschool program if they did not attend the EYPP, while boys were equally likely to attend a public preschool program or an Islamic Foundation program. Children in the

treatment group attending other, non-EYPP programming, on average, had more literate parents; our results show that parents of children in this group were statistically significantly more likely to be able to read or write than those parents of children who attended EYPP programming (see Annex B). The groups did not differ across any other household characteristics. This evidence suggests more educated and literate parents are more likely to send their children to preschool perhaps even in the absence of EYPP programming such that EYPP is increasing access to preschool specifically for children from households with less literate or educated parents.

Even though the control group was not offered the EYPP, it appears families were still likely to send their children to preschool through other providers (only 42% did not attend any preschool programming). For those families in the control group that sent their children to preschool, the group's non-EYPP enrollment mirrored the enrolment trends found in the treatment group. Attending other public preschool programs (21%) was the most commonly reported pre-primary education received by control group children, followed closely by Islamic Foundation programs (17%). Girls were slightly more likely to attend other public programs (23%) than Islamic Foundation programs (18%), whereas boys were almost equally likely to attend other public programs (19%) or Islamic Foundation programs (17%). The next largest group consisted of girls and boys who attended private preschool programs (13% overall; 12% girls and 14% boys). Less than 10 percent of children in the control group attended the BRAC preschool program (7% overall; 7% girls and 8% boys).

7. Implementation of the EYPP

In this section, we share feedback from the EYPP teachers regarding their experiences providing the program and present information regarding quality of implementation (including open responses from EYPP teachers about program strengths and areas they feel need improvement). We also provide parent ratings for the quality of the EYPP. The World Bank is preparing a separate report that details the costs of providing the EYPP during the treatment year for this study cohort.

7.1. Teacher Feedback on the EYPP

We asked EYPP teachers to complete a questionnaire to share their experiences and provide their feedback regarding the EYPP. Note that this questionnaire was only completed for the intervention group (there were no equivalent teachers for the control group).

Teacher Perceptions of the EYPP

EYPP teachers were asked about their own perceptions of the relevance of the EYPP and the children's enjoyment of the program. Teachers' responses to the specific survey questions are shown in Exhibit 21. The majority of EYPP teachers in our study believe that the program is necessary for children, with 84 percent (42 teachers) responding that this claim is very true. Teachers similarly responded that they believe children enjoy attending the program, again with 84 percent claiming that this statement is very true. The results are a bit more mixed when teachers were asked whether children sometimes find the EYPP activities boring. The majority (76%) stated this was a little bit true, 12 percent responded that this statement was mostly or very true, while 12 percent responded it was not at all true. Thus, it seems the EYPP is regarded as necessary by teachers, children appear to be enjoying the program overall, but there are some activities that children likely find boring.

Exhibit 21. Teacher Perceptions of the EYPP

Item	Response				
	Not at All True	A Little Bit True	Mostly True	Very True	Don't Know
The program is necessary for children in this community.	0 0.0%	0 0.0%	8 16.0%	42 84.0%	0 0.0%
The children enjoy attending the program.	0 0.0%	1 2.0%	7 14.0%	42 84.0%	0 0.0%
Sometimes children find the program activities boring.	6 12.0%	38 76.0%	4 8.0%	2 4.0%	0 0.0%

Alignment of the EYPP With Children's Developmental Needs

We further questioned teachers about their beliefs surrounding the alignment of the EYPP and its activities with children's development needs. The results from this module of the teacher survey are presented in Exhibit 22.

All teachers feel the program does a good job of building children's early numeracy skills, while the majority (92%) feel the program also does a good job of building early literacy skills. However, 8 percent feel the program could improve its ability to build children's early literacy skills. We again find the majority of teachers reporting that they believe the program does a good job of building children's vocabulary, but 14 percent of EYPP teachers surveyed feel that is only a little bit true.

Regarding life skills development, all teachers believe the program builds children's social skills with their peers, and all but one teacher feel the program builds children's ability to behave well in the classroom. The one skill teachers seem less sure the program can build is children's understanding of how the world works: 22 percent of teachers responded it was a little bit true, 52 percent responded it was mostly true, and 26 percent responded it was very true, suggesting the program and its activities could be strengthened in this area.

Lastly, the majority of teachers (84–92%) agreed that the curriculum activities for early numeracy and early literacy were generally too easy rather than too difficult for most children in the classroom. Even though a handful of teachers reported the curriculum was too difficult for some children, all teachers responded that they were mostly or completely able to meet the learning needs of all the children in their class.

Overall, the results suggest EYPP teachers think that the program is useful for helping children develop early learning and life skills but that the program activities are a little too easy for many children. However, they generally feel confident in their abilities to meet the learning needs of all children in their EYPP classes.

Exhibit 22. Teacher Ratings of EYPP Alignment With Children's Developmental Needs

Item	Response				
	Not at All True	A Little Bit True	Mostly True	Very True	Don't Know
The program builds children's early mathematics skills well.	0 0.0%	0 0.0%	21 42.0%	29 58.0%	0 0.0%
The program builds children's early literacy skills well.	0 0.0%	4 8.0%	26 52.0%	20 40.0%	0 0.0%
The program builds children's vocabularies.	0 0.0%	7 14.0%	21 42.0%	22 44.0%	0 0.0%
The program builds children's understanding of how the world works.	0 0.0%	11 22.0%	26 52.0%	13 26.0%	0 0.0%
The program builds children's social skills with their peers.	0 0.0%	0 0.0%	11 22.0%	39 78.0%	0 0.0%
The program builds children's ability to behave well in a classroom.	0 0.0%	1 2.0%	10 20.0%	39 78.0%	0 0.0%
The curriculum activities to teach mathematics are too easy for many children in my class.	0 0.0%	8 16.0%	22 44.0%	20 40.0%	0 0.0%
The curriculum activities to teach mathematics are too difficult for many children in my class.	20 40.0%	23 46.0%	7 14.0%	0 0.0%	0 0.0%
The curriculum activities to teach literacy are too easy for many children in my class.	0 0.0%	4 8.0%	25 50.0%	21 42.0%	0 0.0%
The curriculum activities to teach literacy are too difficult for many children in my class.	24 48.0%	21 42.0%	5 10.0%	0 0.0%	0 0.0%
I am able to meet the learning needs of all of the children in my class.	0 0.0%	0 0.0%	10 20.0%	40 80.0%	0 0.0%

Preparation to Deliver the EYPP

Lastly, we asked EYPP teachers about their own preparedness to teach the EYPP curriculum. Results from this section are presented in Exhibit 23. Overall, teachers felt each item was mostly true or very true, suggesting they generally felt well prepared to teach the EYPP curriculum. However, a few teachers selected "a little bit true" in response to the statements that the instructions were clear and they knew how to deliver the activities, that they had the materials they needed to deliver the activities, and that they were able to maintain control of their class while carrying out the curriculum. While only a small proportion of teachers (2–10%)

responded in line with not feeling fully prepared to teach the EYPP curriculum, it may be important for program implementers to be aware of these possible constraints to high-quality implementation so they can make changes moving forward.

Exhibit 23. Teacher Ratings of Their Preparation to Teach the EYPP

Item	Response				
	Not at All True	A Little Bit True	Mostly True	Very True	Don't Know
I have received adequate training and/or coaching to be able to teach the program well.	0 0.0%	0 0.0%	13 26.0%	37 74.0%	0 0.0%
The instructions for teachers are clear, so I know how to deliver activities in the curriculum.	0 0.0%	1 2.0%	12 24.0%	37 74.0%	0 0.0%
I have the materials I need to deliver the activities in the curriculum.	0 0.0%	5 10.0%	19 38.0%	26 52.0%	0 0.0%
I am able to maintain control of my class while carrying out the curriculum.	0 0.0%	1 2.0%	18 36.0%	31 62.0%	0 0.0%

7.2. Quality of the EYPP

We obtained information on the quality of EYPP implementation from Save the Children quality-monitoring reports and from the questionnaires completed by all 50 EYPP teachers. We also asked parents about their perceptions of any preschool programming their child was attending, and here we report the opinions of the parents whose children went to the EYPP specifically (versus other programming).

EYPP Monitoring

Save the Children provided AIR with monitoring results for 29 of the 50 EYPP classes (although all 50 received monitoring visits). The reports span monitoring visits that took place across the school year. Of the 29 classes assessed, 21 received a grade of A on the monitoring report, four a grade of B, and the remaining three a grade of C. For classes that did not receive an A, the most common issues included the teacher not starting class on time and high rates of absence among children. No other consistent issues emerged.

EYPP Teacher Perceptions of Program Benefits

We asked EYPP teachers, "Based on your experiences, what are the three best things about the program?" Teachers' responses touched on common themes, as shown in Exhibit 22. All 50 teachers provided at least one response, 47 provided two responses, and 34 provided three responses. Most respondents focused on the school readiness skills that children acquired, their development of social skills and friendships, their development of familiarity with schooling and school rules, their opportunities to learn through play/stories, their preparation for the next level (pre-primary), and/or the idea that participation in the EYPP reduced children's fear of school or hesitation to participate.

Exhibit 24. EYPP Teacher Perceptions of Benefits of the Program

Response	*n* (%)
Children learn skills (literacy/language, mathematics, shapes, colors, puzzles, motor, life skills, etc.).	36 (72.0%)
Children learn social behaviors/make friends.	25 (50.0%)
Children are developing the habit of schooling/study habits/learning school rules.	23 (46.0%)
Children can learn a lot through playing/stories.	18 (36.0%)
Children are becoming prepared for the next grade.	12 (24.0%)
The program reduces children's hesitation/fear of school.	8 (16.0%)
The program will reduce student dropout.	6 (6.0%)
Children are protected/cannot be harmed.	2 (4.0%)
Children at age 4 get free schooling.	2 (4.0%)
Parents learn about child development.	1 (2.0%)

EYPP Teacher Recommendations for Program Improvement

We asked EYPP teachers, "Based on your experiences, what three things most need to be improved about the [EYPP] curriculum?" Of the 50 teachers, three stated that they did not feel improvements were necessary. Of the remaining teachers, 47 made at least one suggestion, 37 made at least two suggestions, and 21 made three suggestions. Exhibit 25 lists all responses provided by two or more teachers (i.e., recommendations made by just one individual are not included). Responses covered both working conditions for teachers and the learning needs and experiences of the children.

Exhibit 25. EYPP Teacher Recommendations to Strengthen the Curriculum

Response	*n* (%)
Increase the honorarium for teachers/use a fixed pay scale.	19 (38.0%)
Provide monthly teacher training.	16 (32.0%)
Provide more books with images that teach numerals, colors, etc.	14 (28.0%)
Provide sports equipment.	13 (26.0%)
Provide more books in the classroom.	6 (12.0%)
Have books available to send home with children.	5 (10.0%)
Provide a larger classroom.	4 (8.0%)
Provide cards/images to support children's counting with blocks.	4 (8.0%)
Provide alphabet blocks/cards/puzzles.	3 (6.0%)
Provide ongoing training (after Save the Children discontinues support).	3 (6.0%)
Enhance training for parents/information for parents about importance of schooling.	3 (6.0%)
Provide new tools (not specified).	3 (6.0%)
Start teaching letters and numbers earlier in the school year.	2 (4.0%)
Provide the children with boards for writing.	2 (4.0%)

EYPP Teacher Recommendations for Improved Teacher Support

We asked EYPP teachers, "Based on your experiences, are there any things that should be improved about the training or support teachers receive to deliver the program?" The 33 teachers who said yes were invited to provide up to two suggestions; 8 teachers provided two suggestions each, and 25 provide one suggestion. Exhibit 26 lists all responses provided by two or more teachers (i.e., recommendations made by just one individual are not included).

Exhibit 26. EYPP Teacher Recommendations to Improve Teacher Support

Response	*n* (%)
Increase the honorarium for teachers/use a fixed pay scale.	12 (44.0%)
Provide monthly teacher training.	5 (10.0%)
Regular oversight visits to the school to ensure transparency and accountability.	3 (6.0%)
Provide job security.	2 (4.0%)
Make the school permanent.	2 (4.0%

On average EYPP parents had positive perceptions of the program (Exhibit 27). Specifically, most parents reported that the school was a good place for their child to be, prepared them well for the future, and met their child's academic and social and behavioral needs. EYPP parents felt comfortable with and liked their child's preschool teacher and the school environment. It is important to note that parents in the treatment group whose children attended other types of preschool reported similarly high ratings for those other types.

Exhibit 27. Parent Perceptions of the EYPP

Item	Not at All True	A Little Bit True	Mostly True	Very True
The school was a good place for my child to be.	1 0.8%	39 8.0%	106 21.8%	337 69.3%
The school did a good job preparing children for their futures.	2 0.4%	19 3.9%	197 40.5%	268 55.1%
Going to school exposed my child to harmful people or ideas.	438 90.1%	29 6.0%	7 1.4%	12 2.5%
The school met my child's academic needs.	0 0.0%	62 12.8%	176 36.2%	248 51.0%
The school met my child's social and behavioral needs.	4 0.8%	55 11.3%	172 35.4%	255 52.5%
Doing well in preschool will improve my child's chances of having a good life.	0 0.0%	16 3.3%	124 25.5%	346 71.2%
This preschool kept me informed about my child's performance and behavior.	8 1.7%	60 12.4%	148 30.5%	270 55.6%
I like the teacher(s) at the preschool.	0 0.0%	8 1.7%	96 19.8%	382 78.6%
I feel comfortable talking with my child's preschool teacher.	0 0.0%	23 4.7%	120 24.7%	343 70.6%
The preschool is a welcoming place for families like mine.	0 0.0%	25 5.1%	94 19.4%	367 75.5%
The preschool is a safe place for my child.	0 0.0%	15 3.1%	77 15.8%	394 81.1%

8. Intervention Effects at Midline

In this section we present estimated midline impacts on children's development.[6] Each section that follows highlights the results from the ITT analysis using ANCOVA methods by IDELA skill domain. We then present effects of the LATE analysis using an IV approach identifying the impact of the program for those children in the treatment group who actually attended EYPP programming. We examined the extent to which household educational environment predicted variation in child outcomes and did not find any patterns of significant effects. This result may be due to the fact that the quality of the household educational environment was high across study groups.

[6] Full regression results are presented in Appendix D

8.1. Children's Cognitive Development

We first present the estimated effects of the EYPP on children's cognitive development. As described, the IDELA tool assesses children's emergent literacy and language development, emergent numeracy development, executive function, and approaches to learning. Scores are presented as percentage correct overall and for each specific domain. We present the possible number of points by domain in Appendix C. The following subsections describe the midline effects of the program for each subskill.

In order to put scores into context, we relate the effect sizes for each domain to the difference in scores by mother's educational attainment at baseline. To situate the reader to these baseline differences, we present Exhibit 28, below, showing the baseline IDELA scores based on mother's education by treatment and control. Consistent with the results of our baseline equivalency test, we find no significant differences in scores by treatment and control at baseline even when disaggregated by mother's educational attainment.

Exhibit 28. Comparison of Baseline IDELA Domain Scores by Mother's Educational Attainment and Treatment Status

Domain	Mother No Education		Mother Completed Primary		Mother Completed Secondary		Mother Completed Tertiary	
	Treatment Mean (SE)	Control Mean (SE)	Treatment Mean (SE)	Control Mean (SE)	Treatment Mean (SE)	Control Mean (SE)	Treatment Mean (SE)	Control Mean (SE)
Emergent Literacy	21.48 (1.72)	21.48 (1.75)	28.66 (2.04)	26.16 (1.63)	29.12 (1.14)	28.81 (1.36)	40.64 (2.27)	38.91 (3.01)
Emergent Numeracy	31.02 (2.00)	27.90 (1.63)	36.40 (2.39)	33.40 (1.92)	34.51 (1.10)	35.01 (1.16)	43.91 (2.11)	41.17 (2.52)
Executive Function	47.05 (3.65)	40.19 (3.19)	51.32 (3.47)	46.50 (2.92)	49.72 (2.08)	48.95 (1.94)	55.88 (4.00)	52.43 (3.85)
Approaches to Learning	52.73 (3.53)	46.42 (3.32)	57.75 (3.13)	53.22 (2.56)	55.10 (1.53)	56.36 (2.19)	60.59 (3.17)	58.83 (4.56)
Social-Emotional Development	30.01 (1.79)	24.87 (1.92)	33.05 (2.39)	28.72 (1.82)	31.81 (1.04)	30.51 (1.07)	34.46 (2.26)	38.79 (3.05)
Motor Development	33.28 (3.02)	32.65 (3.05)	41.32 (2.00)	39.96 (1.77)	43.94 (1.45)	42.41 (1.77)	54.46 (3.02)	50.78 (4.01)
Observations	*110*	*107*	*228*	*189*	*544*	*478*	*85*	*67*

Note: Table presents mean scores by IDELA subskill and treatment group status. Standard errors are shown in parentheses. T-test comparison of means are clustered at the school level. Bold denotes significant differences at the alpha= 0.05 level.

Emergent Literacy and Language

The emergent literacy module assesses children's oral language knowledge, decoding skills, writing skills, and oral comprehension. The percentage correct from each subskill are combined to generate an overall emergent literacy score (calculated as the total percent correct for all domain items divided by the total number of items in this domain multiplied by 100 percent).[7] For the emergent literacy domain, children's scores are calculated out of 55 total points. We find marked increases in scores among children in both treatment and control groups from baseline to midline (Exhibit 29). The score increases were larger for the treatment group; in that group, the score increased from 29.12 points to 58.67 points at midline, a significant impact on the midline literacy score that translates into 6.39 points or an effect size (ES) of 0.24 standard deviations ($p < .01$).[8] This impact is roughly equivalent to the observed difference in median scores in the control group at midline between children with uneducated mothers and children with mothers who completed primary school. For children in the treatment group who actually attended EYPP programming, we find the LATE effect on emergent literacy to be slightly higher – resulting in an increase of 6.72 points (ES=0.27; $p < .01$).

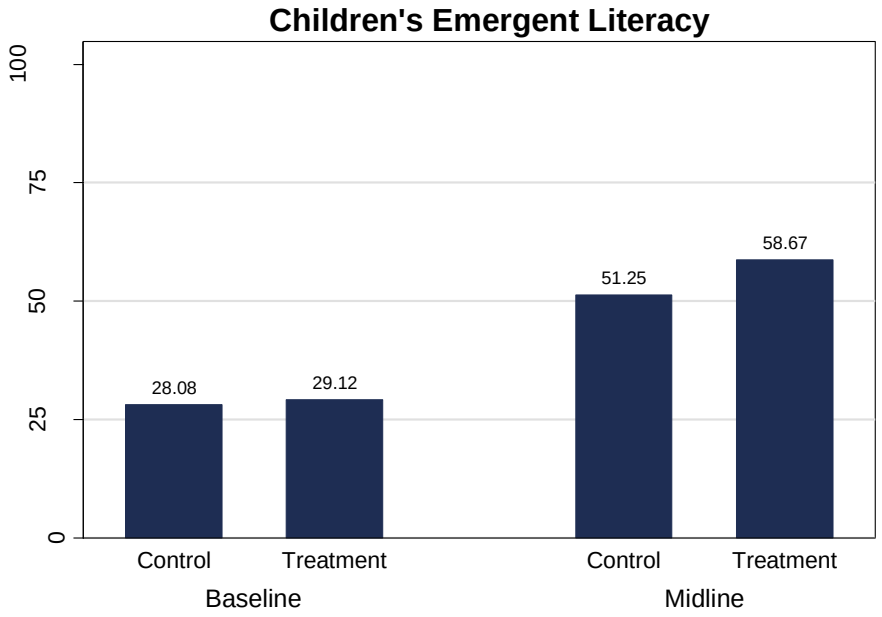
We further examine differences in emergent literacy scores for boys and girls.[9] We find the effect of the EYPP on emergent literacy is stronger for girls than for boys. Specifically, we find that, on average, attending the EYPP increases girls' literacy scores by 8.48 points (ES=0.32) over girls in the control group, while it only increases boys' scores by 4.51 points (ES=0.17) over their counterparts in the control group. In both instances, however, the treatment effect is positive and highly significant ($p < .01$). We similarly examine the LATE for girls and boys and find the treatment effect to be slightly lower for girls (8.01 points [ES=0.31]), but slightly larger for boys (5.52 points [ES=0.22]).

Lastly, we examine the influence of the baseline value of the moderators described in Section 3 such as children's health and characteristics of the home environment. The impact of EYPP was greater by 3.42 points higher for children reported to be in good health (resulting in an impact of 9.82 points, ES=0.27) and was smaller for children who did not receive growth monitoring for

[7] See Appendix C for a breakdown of the total possible scores by each subtask.
[8] Effect sizes are effects presented in standard deviations. We calculate effect sizes by standardizing all individual student scores by subtracting the overall mean score in the sample and dividing by the standard deviation. Then running our analysis on these standardized scores produces our effect sizes in standard deviations.
[9] We additionally tested for differential effects for all outcomes by mother's and father's education, household food expenditures, and perceived health status of the child. We find no evidence of differential effects for any of these subgroups with the exception of child's health status, for which we observe slightly larger effects for children perceived to be in "good" or "very good" health by their parents.

more than one year–a proxy for poor use of health care. The impact on midline literacy scores was 2.75 points (ES=0.21) for those children. These results suggest that the effect of EYPP programming may be compromised by children's lack of health and/or lack of access to health care but that EYPP programming still provides a meaningful boost in achievement even for these children.

Exhibit 29. Children's Performance in Language and Literacy



Numeracy

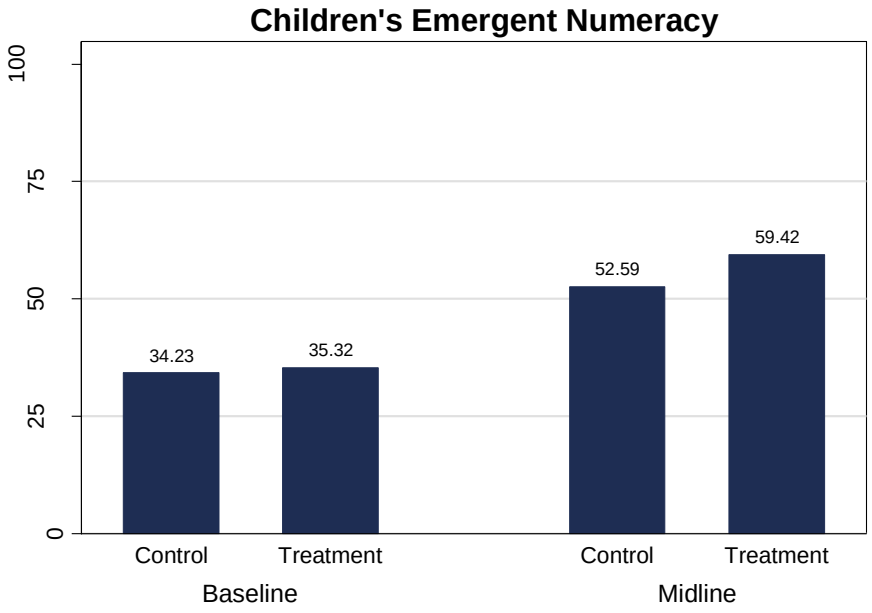
The numeracy module of the IDELA captures children's emergent numeracy by testing a progression of skills that contribute to proficiency in mathematics. Specifically, the module assesses children's knowledge of and ability to recognize numbers and patterns, compare quantities, and manipulate numbers via addition and subtraction. Across all subtasks within the numeracy domain, children can score a possible maximum of 43 points. We again find that scores consistently increase between rounds (Exhibit 30), with greater increases for children in the treatment group, resulting in an estimated ITT effect of 5.77 points (ES=0.29, $p < .01$) and LATE of 6.34 points (ES=0.33, $p < .01$). An increase of approximately 6 points is equivalent to the

difference in scores for control children in the lowest quartile with mothers who completed secondary schooling compared to those whose mothers did not.

We again find larger effects for girls than boys ($p < .01$). The ITT impact on emergent numeracy for girls is 7.42 points (ES=0.38) and for boys it is 4.30 points (ES=0.21). The LATE for girls is 7.65 points (ES=0.40) and for boys it is 4.99 points (ES=0.26).

We similarly examined other potential moderating factors such as children's health and home environment and find that treatment effects on children's numeracy are larger for children in good health (an impact of 10.76 points [ES=0.50]) and for children who receive any form of parental stimulation at home (an impact of 16.13 points [ES=0.81]). The differential impacts for children with good health are roughly equivalent regardless of gender, while those based on parental stimulation were driven by boys.

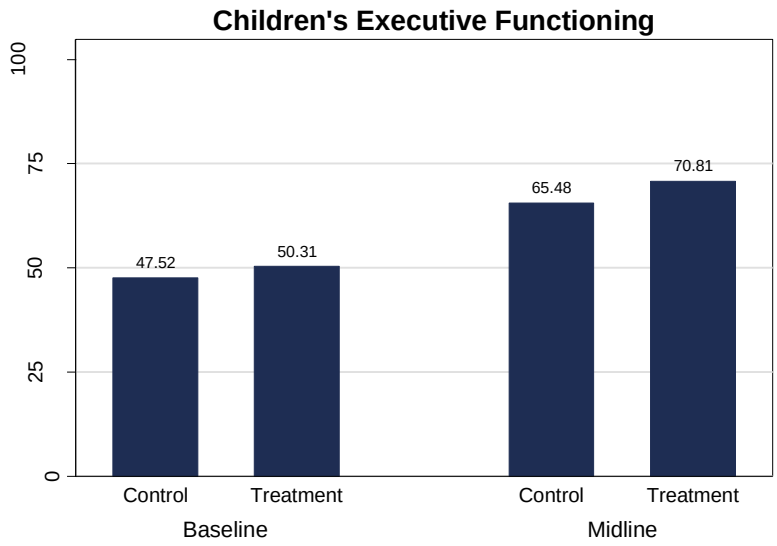
Exhibit 30. Children's Performance in Numeracy



Executive Function

In the IDELA, executive function measures children's short-term memory and their inhibitory control—cognitive processes that are necessary for controlling one's behavior. While children's executive function scores increased for both treatment and control groups from baseline to midline (Exhibit 31), we do not find that availability of the EYPP had a significant impact. While our estimates suggest that girls in treatment communities may have had higher score increases than boys in treatment communities, these differential effects are likewise not significant. However, our LATE results find an overall impact of 4.66 points (ES=0.16) suggesting the EYPP may help children develop their memory and inhibitory control. We also find differential effects for girls and boys; girls' executive functioning scores significantly increased by 5.99 points (ES=0.21, $p < 0.01$) while there was no significant impact on boys' scores.

Exhibit 31. Children's Performance in Executive Function



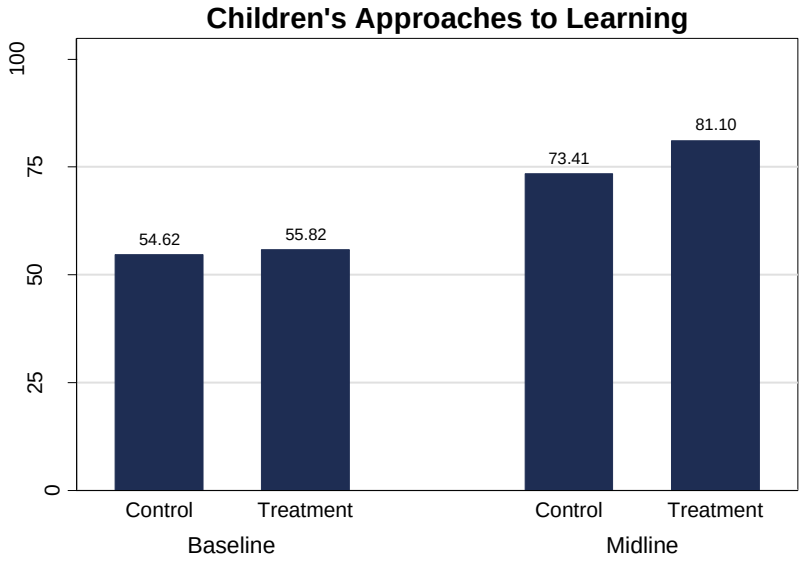
Approaches to Learning

The IDELA module on approaches to learning attempts to gauge children's readiness to learn by assessing children's curiosity and eagerness to learn and their ability to tackle challenges, follow directions, and take risks. Children's scores on this module follow the same trends as previous modules, with evident increases between baseline and midline for both the treatment and

control groups (Exhibit 32). Similarly, we find positive ITT effects of treatment on scores, with children in the treatment group on average scoring 6.52 points higher than those in the control group (ES=0.25; $p < .01$). LATE results find EYPP attendees in the treatment group score 7.38 points (ES=0.28; $p < .01$) higher than their peers in the control group. This score differential is equivalent to the difference in average scores between children in the control group with uneducated mothers and those with mothers who completed at least primary school.

We find that the approaches to learning scores of treated girls and boys are significantly different; the ITT impact of the EYPP on girls led to an increase of 8.46 points (ES=0.33; $p < .01$), while it led to only an increase of 4.77 points for boys (ES=0.19; $p < .05$). The LATE of the EYPP on girls led to an increase of 9.05 points (ES=0.35; $p < .01$), and 5.64 points for boys (ES=0.22; $p < .10$). *We* also find that children in the treatment group who also receive stimulation at home have larger treatment effects on approaches to learning scores (impact of 10.77 points [ES=0.77]) than scores for those treated children who do not receive stimulation at home. This differential is driven by boys: treated boys who receive stimulation at home score 3.22 points (ES=0.14) higher (an impact of 10.29 points), on average, than their counterparts who do not receive stimulation.

Exhibit 32. Children's Performance in Approaches to Learning



8.2. Children's Socio-Emotional and Motor Development

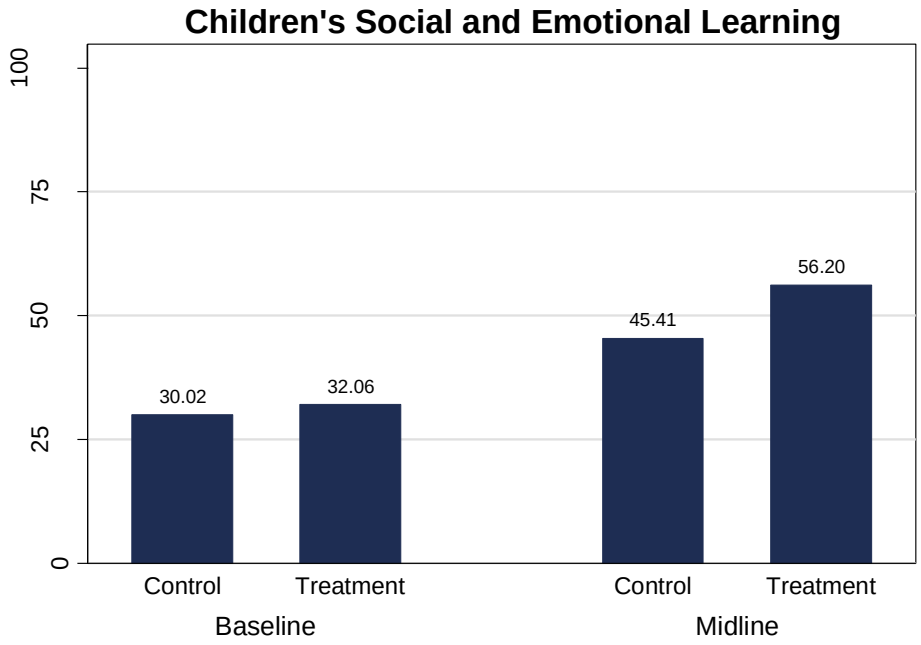
In this section we present the results from the remaining IDELA domains: social-emotional development and motor skills development. The following subsections describe the estimated effects of EYPP programming on these outcomes at midline.

Social-Emotional Development

To measure social-emotional development, the IDELA assesses skills that facilitate children's ability to appropriately interact and build relationships with peers, authorities, and family. This module specifically looks at children's self-awareness, emotional awareness, and empathy and their ability to solve conflicts and scores out of a total of 25 points. As with all other modules, we see scores increasing for both groups over time (Exhibit 33). We find a positive ITT effect of 8.75 points (ES=0.36; $p < .01$) on average for children in the treatment group compared to the control group and a LATE of 9.95 points (ES=0.44; $p < .01$). Continuing with the comparison of children in the control group with primary educated and uneducated mothers, this impact estimate is equivalent to the difference in social-emotional scores between these groups at the 95th percentile.

While we find overall impacts on children's socio-emotional development, we do not find evidence of differential impacts between boys and girls from our ITT analysis. Our evidence again suggests slightly larger impacts for girls than boys, though this potential difference is not statistically significant. We do, however, find that impacts are stronger for children with storybooks in the home; the impact for those with storybooks is 12.29 points (ES=0.22), on average. Boys with storybooks in the home are found to have an associated impact of 13.69 points (ES=0.22); a larger impact than boys without storybooks in the home. We do not find any differential effects by the presence of storybooks for girls in our sample.

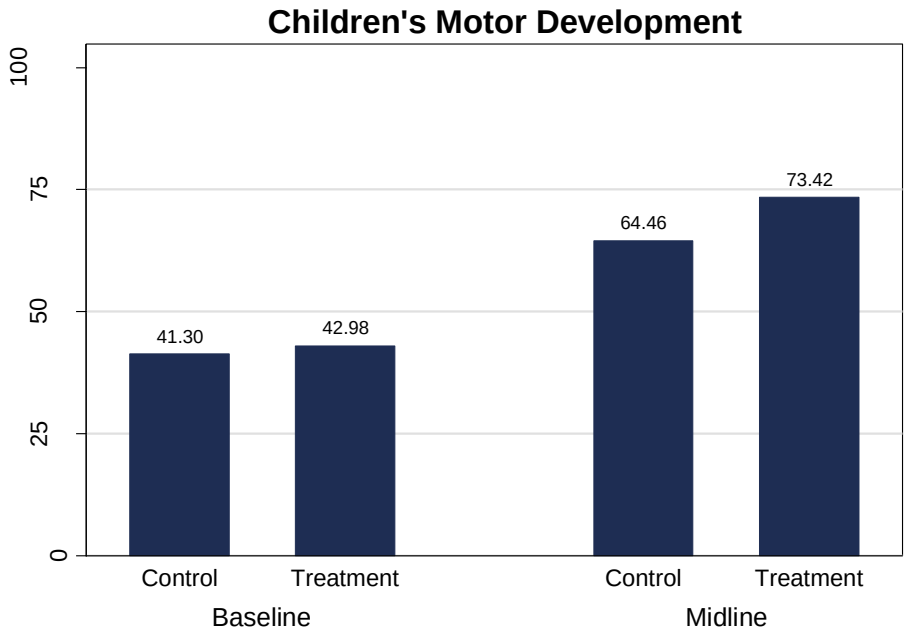
Exhibit 33. Children's Socio-Emotional Development



Gross and Fine Motor Development

The final domain assessed by the IDELA is children's healthy motor development and functioning. The administration of this module has children hop, copy a shape, draw a person, and fold a piece of paper. As with all domains, children's motor development scores increased between baseline and midline for both treatment and control children (Exhibit 34). We again find a significant and positive impact of being in the treatment group on this outcome, with an ITT effect of 7.33 points (ES=0.28; *p<0.*01) and a LATE of 8.29 points (ES=0.31; $p < .01$). This impact estimate is roughly equal to the difference in average scores between control group children with primary educated mothers and those with uneducated mothers. While we find the EYPP had a sizable and statistically significant effect on motor development scores, we do not find evidence of a difference in impact between boys and girls. We similarly do not find any differential effects of the EYPP on motor development scores based on children's health or characteristics of their household environment.

Exhibit 34. Children's Motor Development



9. Answers to the Research Questions

In this section, we provide answers to the research questions based on our midline findings. Then at endline, in 2020, we will provide updated responses to questions regarding child outcomes.

9.1. Answers to the Primary Research Questions

In this section, we provide answers to the primary research questions based on the midline findings presented in this report.

9.1.1. What is the impact of offering an additional year of preschool on the cognitive development of young children in a rural setting?

We looked at cognitive development in terms of children's emergent literacy, numeracy, executive function, and approaches to learning. At midline, we found positive EYPP impacts on children's cognitive development in the areas of literacy, numeracy, and approaches to learning but not in the area of executive function. The positive effects were moderate in magnitude, equivalent to bridging the gap between children whose mothers did versus did not complete a

primary education, and we found significantly greater benefits for girls than for boys in all three areas that showed positive effects (literacy, numeracy, and executive function).

9.1.2. What is the impact of offering an additional year of preschool on the social-emotional abilities and motor development of young children in a rural setting?

At midline, the EYPP had a positive effect on children's social and emotional learning and a positive effect on children's motor development. In both of these areas, while girls showed somewhat greater program benefits than boys, the differences did not reach the level of statistical significance.

9.1.3. What is the benefit relative to the cost of offering an additional year of preschool with regard to learning and development outcomes?

The answer to this question is pending, based on completion of a cost analysis by World Bank.

9.2. Answers to the Secondary Research Questions

Here, we provide answers to the secondary research questions for this study.

9.2.1. What is the mechanism through which the intervention affects the outcomes of interest?

A key finding is that when the EYPP was made available in a community, it seemed to pull few children away from other programming options (such as Islamic Foundation or BRAC preschools) but rather mostly attracted children who would not have attended preschool otherwise. We did not find evidence that the EYPP produces any significant effects by changing the household educational environment, nor that parents in the treatment group whose children attended the EYPP felt more positive about their child's preschool than did parents whose children went to other programs.

While we cannot just focus on the children in the EYPP versus no program—because there are pre-existing differences between these two groups and because the control group also performed fairly well—it is possible that the EYPP achieves its effects by providing a preschool experience to children who would otherwise not have had one (rather than being better than other available preschool programming).

9.2.2. Is the age at which the children start preschool an important factor?

Participants in the first year of the EYPP (prior to the study cohort's entry into the program) were from a broad age range. For the study cohort, we restricted the age band to include only children who were one year away from on-time enrollment in the one-year government pre-primary class. With few exceptions, programming was offered only to children who were

identified as being in the target age range based on our study census. Therefore, we are unable to conduct any analyses to detect differences in program effects based on the age at which children began the EYPP.

9.2.3. Is the time spent in the preschool program an important factor?

EYPP attendance was very high, with over 96 percent of enrolled children attending at least 80 percent of the sessions. Given the very high level of program participation, it was not feasible to look at differences in program effects based on attendance levels among the enrolled children.

9.2.4. What elements of the EYPP appear to be most important in achieving the program's impacts?

Nearly all families could meet their children's needs and provide materials to support their learning and development. For example, food insecurity was very low among the study participants (information gathered only at baseline), few children were in poor health, and rates of diarrheal disease were low (although respiratory illness was very common). Nearly all households had books available (children's books, textbooks, and/or religious books), and nearly all had store-bought toys, writing/drawing materials, and/or educational toys. Across both the treatment and control groups, about half of the children were enrolled in other preschool programming, indicating that such programming is available to many children even without the EYPP. As noted above, the EYPP seemed to serve mostly children who did not have other programming available or whose parents chose not to enroll them in other available programming.

9.2.5. To what extent is the program implemented with fidelity?

Based on the monitoring information available, the program was implemented with a high level of fidelity. Where classes had lower levels of fidelity, the issues tended to involve instructional time for children (due to class starting late and some attendance difficulties, although attendance issues were minimal overall). There were few concerns noted by monitors regarding how the program was delivered to the children.

9.2.6. What do teachers think about the training activities and materials? How can the training be improved?

All EYPP teachers felt that they had adequate training and coaching to deliver the curriculum effectively. All but one teacher felt that their instructions were clear and that they knew how to deliver the program activities, and all but one were able to manage their classes effectively. Ninety percent of the teachers reported that they had the materials they needed to deliver the curriculum. When asked about how to improve the program, 10 percent of teachers felt that

monthly training would be beneficial for them. So overall, teachers were very positive about the training and materials.

9.2.7. What are the challenges that teachers encountered when implementing the EYPP curriculum?

Nearly all teachers felt that they knew how to implement the curriculum and that they had the materials needed to do so. All but one teacher were able to maintain control of their classes while carrying out the curriculum, and all felt that they were able to meet the learning needs of the children in their classes. When asked how programming could be improved, a minority of teachers requested additional materials, especially books (e.g., more books with images to teach numerals, colors, etc.; more books in general; and books that they could send home with children) and sports equipment. So overall, teachers were very confident in delivering the curriculum and identified very few challenges.

When asked for their perceptions of the appropriateness of the curriculum for the children's needs, all EYPP teachers felt that the curriculum developed children's mathematics skills, but a minority of teachers felt that the curriculum did not sufficiently increase children's literacy skills, vocabularies, or understanding of how the world works. It is important to note that nearly all teachers thought that the mathematics and literacy lessons were *too easy* for many children in their classes, and only a small number felt that these lessons were too difficult.

10. Study Limitations

Thus far, there have not been any significant limitations or issues in terms of carrying out this study. Attrition has been minimal, and there have not been any issues identified that could compromise the quality or generalizability of the study results. Even so, we do find low take-up of the EYPP with only about half of the children in treatment communities attending the EYPP. This low take-up limits the internal validity of our analysis as the average treatment effect is likely biased due to non-compliance within the treatment group. Based on our data, we find that the households in the treatment group that did not comply with treatment (i.e., they sent their children to programs other than the EYPP) were more literate than those who took up treatment. To account for this differential take-up in our estimates, we present estimates of the ITT effect – the effect of being offered treatment – as well as the LATE – the effect of treatment on those who complied with treatment assignment.

11. Conclusions

As of the midline timepoint, this study is progressing well. We have had zero attrition at the school level and a very low 2.2 percent attrition rate at the child level. All study activities have been completed on time, and we have had no concerns about the quality or completeness of the study data.

Children in this study come from households that were able to meet their basic needs and support their learning, with nearly all households having electricity, books, and store-bought toys. Literacy rates were 84 percent for mothers and 65 percent for fathers.

In the control group, 58 percent of children attended preschool. This figure tells us that even in the absence of the EYPP, just over half of the children would go to preschool anyway. However, the EYPP seems to fill a gap among children who would not go to preschool otherwise. In the EYPP treatment group, just 10 percent of the children were not enrolled in preschool (versus 42% of the control group). So when the EYPP becomes available, 10 percent of children still will not attend any preschool, 40 percent of children will attend some other kind of preschool, 18 percent of families who would have enrolled their children in other programming will switch to the EYPP, and 32 percent of children will attend the EYPP who would have otherwise stayed home. We can conclude that the EYPP fills a gap and primarily serves children who would not have attended preschool otherwise.

Program implementation seems to have gone well overall, with few issues. EYPP teachers were very positive about the program, believing that it was beneficial for children. They mostly felt that the curriculum was appropriate but did report that the curriculum was somewhat less effective at teaching vocabulary and how the world works, and that some of the mathematics lessons were too easy for many of the children in their class. Children's attendance at the EYPP (among those enrolled) was very high. In terms of program improvements, teachers focused on working conditions, specifically the need for a higher honorarium and more ongoing training (monthly). Parents were also very positive about the EYPP, but parents in the treatment group whose children went to other programs rated those highly as well.

The EYPP had a positive impact on children's cognitive development in the areas of literacy, numeracy, and approaches to learning. In these three areas, we found a significantly larger program benefit for girls than for boys (although boys also benefited). We also found significant positive program effects on children's social-emotional learning and motor development, with no significant differences in benefit between girls and boys in either of these areas. The

program's benefits seemed to come directly from participation of the children in the program rather than from changing the household educational environment.

The final round of data collection will take place in November–December 2019. At that time, study children will be expected to have completed their regular government one-year pre-primary class and will be about to begin Grade 1. Globally, preschool programming often gives children a short-term learning boost, but the educational advantage is not always maintained as the children move on to primary school (in which case they and their peers have the same educational experiences). Therefore, this endpoint will be critical for determining whether the positive school readiness program effects we observed at midline will fade out or instead will lead to a better educational trajectory.

References

Aboud, F. E. (2006) Evaluation of an early childhood preschool program in rural Bangladesh. *Early Childhood Research Quarterly, 21*, 46–60.

Aboud, F. E. & Hossain, K. (2011). The impact of preprimary school on primary school achievement in Bangladesh. *Early Childhood Research Quarterly, 26*, 237–246.

Bonilla, J., Spier, E., Carson, K., Ring, H. & Sirma, P. (2018). *Evaluation of the UNICEF Mozambique Accelerated School Readiness Pilot Program: Midline Report.* Washington, DC: American Institutes for Research.

Currie, J. & Thomas, D. (1995). Does Head Start make a difference? *American Economic Review, 85*, 341–364

Deming, D. J.(2009). Early childhood intervention and life-cycle skill development: Evidence from Head Start. *Applied Economics, 1*, 111–134.

Dowd, A. J., Borisova, I., Amente, A. & Yenew, A. (2016). Realizing capabilities in Ethiopia: Maximizing early childhood investment for impact and equity. *Journal of Human Development and Capabilities,* 17(4): 477-493.

Feller, A. and A. Gelman (2014). Hierarchical models for causal effects. In R. Scott and S. Kosslyn (Eds.) *Emerging Trends in the Social and Behavioral Sciences*. Thousand Oaks, CA: Sage.

Kline, P. & Walters, C. (2014). Evaluating public programs with close substitutes: The case of Head Start. *IRLE Working Paper No. 123-14*. http://irle.berkeley.edu/workingpapers/123-14.pdf

Yousafzai, A. K., Rasheed, M. A., Rizvi, A., Shaheen, F., Ponguta, L. A. & Reyes, C. R. (2018). Effectiveness of a youth-led early childhood care and education program in rural Pakistan: A cluster-randomized controlled trial. *PLoS ONE,* 13(12): e0208335.

Appendix A. Community-Level Sample

Table A-1. Sample and Group Assignment by Upazila and Union

	Treatment Schools	Control Schools
Gagni Upazila		
Bamundi	1	1
Dhankhola	4	5
Kathuli	2	2
Kazipur	2	2
Mothmura	3	3
Roypur	1	1
Shaharbati	4	3
Sholotaka	3	4
Tatulbaria	2	2
Meherpur Sadar Upazila		
Amdah	2	1
Amjhupi	2	2
Buripota	3	2
Kutubpur	4	4
Municipality 1	4	4
Pirojpur	4	5
Mujibnagar Upazila		
Bagoan	3	3
Dariapur	2	2
Mohajanpur	2	3
Monakhali	2	1
TOTAL	**50**	**50**

Appendix B. Household Characteristics for EYPP Attendees Versus Other Program Attendees in the Treatment Group

Table B-1. Comparison of Household Characteristics for Treatment Group Children Who Attended EYPP Versus Other Preschool

	(1) Other Program Attendees		(2) EYPP Attendees		*t*-test (1)-(2)
Variable	***N***	**Mean (*SE*)**	***N***	**Mean (*SE*)**	***p*-value**
Number of household members	486	4.770 [0.10]	485	4.781 [0.07]	0.916
Mother can read	484	0.880 [0.02]	483	0.807 [0.02]	**0.004**
Mother can write	483	0.692 [0.02]	482	0.606 [0.02]	**0.004**
Father can read	484	0.884 [0.02]	482	0.815 [0.02]	**0.003**
Father can write	483	0.702 [0.02]	482	0.618 [0.02]	**0.002**
Children aged 7–10 years in home	486	0.253 [0.02]	485	0.287 [0.02]	0.206
Children aged 7–10 years in school	486	0.249 [0.02]	485	0.285 [0.02]	0.200
Children aged 11–15 years in home	486	0.342 [0.03]	485	0.373 [0.02]	0.397
Children aged 11–15 years in school	486	0.337 [0.03]	485	0.348 [0.02]	0.754
Number of rooms in the home	486	2.572 [0.07]	485	2.431 [0.05]	0.098
Household has electricity	486	0.986 [0.01]	485	0.975 [0.01]	0.290
Monthly food expenditure (*Taka*)	485	7255.464 [275.86]	485	7026.701 [192.48]	0.386
Monthly education expenditure (*Taka*)	328	1670.030 [158.56]	345	1435.217 [118.48]	0.245

Appendix C. IDELA Scoring by Domain and Subtask

Appendix C-1. Total Possible IDELA Points by Domain and Subtask

Domain	Subskill	Total Possible Points
Panel A. Emergent Literacy	Print awareness	3
	Expressive vocabulary	20
	Letter identification	20
	Emergent writing	4
	Phonemic awareness	3
	Listening comprehension	5
	Total	55
Panel B. Emergent Numeracy	Measurement and comparison	4
	Classification and sorting	2
	Number identification	20
	Shape identification	5
	One-to-one correspondence	3
	Addition and subtraction	3
	Simple problem solving (puzzle)	6
	Total	43
Panel C. Executive Function	Short-term memory	4
	Inhibitory control	6
	Total	10
Panel D. Approaches to Learning	Concentration and motivation	6
	Total	12
Panel E. Social-Emotional Learning	Peer relationships	10
	Emotional awareness & regulation	4
	Empathy	3
	Self-awareness	6
	Conflict resolution	2
	Total	25
Panel F. Motor Development	Hopping on one foot	10
	Copying a shape	4
	Drawing a human figure	8
	Folding paper	4
	Total	26

Appendix D. Impacts on IDELA Domain Scores

Table D-1. Impacts on IDELA Domain Score Points for Full Sample

	ITT Analysis		LATE Analysis		Baseline Mean		Midline Mean		
	Points	ES	Points	ES	T	C	T	C	N
Δ Dependent Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Emergent Literacy	6.39*** (1.62)	0.24*** (0.07)	6.72*** (1.67)	0.27*** (0.06)	29.12	28.08	58.67	51.25	1,815
Emergent Numeracy	5.77*** (1.69)	0.29*** (0.09)	6.34*** (1.50)	0.33*** (0.08)	35.32	34.23	59.42	52.59	1,815
Executive Function	2.57 (2.82)	0.10 (0.09)	4.66** (1.91)	0.16** (0.069)	50.31	47.52	70.81	65.48	1,815
Approaches to Learning	6.52*** (2.36)	0.25*** (0.09)	7.38*** (1.90)	0.28*** (0.07)	55.82	54.62	81.10	73.41	1,815
Social-Emotional Learning	8.75*** (1.72)	0.36*** (0.08)	9.95*** (1.61)	0.44*** (0.07)	32.06	30.02	56.20	45.41	1,815
Motor Development	7.33*** (1.79)	0.28*** (0.07)	8.29*** (1.65)	0.31*** (0.06)	42.98	41.30	73.42	64.46	1,815

Note: All estimates use ANCOVA techniques with panel observations. Robust standard errors clustered at the school level are in parentheses. All estimations control for the baseline value of the dependent variable. Δ Dependent variables = Dependent variable at midline - Dependent variable at baseline; ES = effect size; ITT = intent-to-treat; LATE = local average treatment effect. *p < .10. **p < .05. ***p < .01.

Table D-2. Impacts on IDELA Domain Score for Females

	ITT Analysis		LATE Analysis		Baseline Mean		Midline Mean		
	Points	ES	Points	ES	T	C	T	C	N
Δ Dependent Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Emergent Literacy	8.48***	0.32***	8.01***	0.17***	29.67	28.96	61.51	52.61	883
	(1.71)	(0.08)	(1.83)	(0.05)					
Emergent Numeracy	7.42***	0.38***	7.65***	0.21***	34.64	34.94	60.38	52.54	883
	(1.66)	(0.09)	(1.52)	(0.06)					
Executive Function	3.57	0.14	5.99***	0.07	51.11	49.20	72.32	65.55	883
	(2.83)	(0.10)	(2.09)	(0.06)					
Approaches to Learning	8.46***	0.33***	9.05***	0.19**	54.92	56.56	24.53	73.12	883
	(2.46)	(0.09)	(2.14)	(0.06)					
Social-Emotional Learning	9.80***	0.40***	11.01***	0.33	32.97	30.25	57.87	45.16	883
	(1.88)	(0.09)	(1.90)	(0.07)					
Motor Development	8.61***	0.33***	10.17***	0.231*	45.36	43.90	76.57	65.27	883
	(1.94)	(0.07)	(1.80)	(0.06)					

Note: All estimates use ANCOVA techniques with panel observations. Robust standard errors clustered at the school level are in parentheses. All estimations control for the baseline value of the dependent variable. Δ Dependent variables = Dependent variable at midline - Dependent variable at baseline; ES = effect size; ITT = intent-to-treat; LATE = local average treatment effect. *p < .10. **p < .05. ***p < .01.

Table D-3. Impacts on IDELA Domain Score Points for Males

	ITT Analysis		LATE Analysis		Baseline Mean		Midline Mean		
	Points	ES	Points	ES	T	C	T	C	N
Δ Dependent Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Emergent Literacy	4.51***	0.17***	5.52	0.22	28.63	27.20	56.11	49.89	931
	(1.27)	(0.05)	(1.69)	(0.07)					
Emergent Numeracy	4.29***	0.21***	4.99*	0.26**	35.93	33.52	58.56	52.63	931
	(1.05)	(0.06)	(1.37)	(0.07)					
Executive Function	1.67	0.07	3.31	0.16	49.58	45.84	69.45	65.42	931
	(1.85)	(0.06)	(2.19)	(0.08)					
Approaches to Learning	4.77**	0.19**	5.64*	0.22*	56.63	52.67	80.23	73.69	931
	(1.60)	(0.06)	(2.04)	(0.08)					
Social-Emotional Learning	7.80	0.33	8.86	0.39	31.24	29.78	54.68	45.66	931
	(1.59)	(0.07)	(1.90)	(0.08)					
Motor Development	6.18	0.23*	6.406**	0.24**	40.84	38.69	70.57	63.65	931
	(1.53)	(0.06)	(1.89)	(0.07)					

Note: All estimates use ANCOVA techniques with panel observations. Robust standard errors clustered at the school level are in parentheses. All estimations control for the baseline value of the dependent variable. Δ Dependent variables = Dependent variable at midline - Dependent variable at baseline; ES = effect size; ITT = intent-to-treat; LATE = local average treatment effect. *p < .10. **p < .05. ***p < .01.

Appendix E. Family Questionnaire

Date of Interview: _____ / _____ / ___

Assessor's name: _____

Child ID_____

Introduction

Thank you for your time. My name is _____, and I work for Data International Ltd. and we are evaluating early childhood programming. The goal of this evaluation is to improve the education that is being provided to children like yours. Your answers to the following questions will help us greatly in reaching this purpose. This interview is voluntary. You do not need to answer any questions that you do not wish to answer, and you can stop answering questions any time without penalty. All of your answers are confidential. Again, thank you for your time.

PART 1: General Family Information

12. What is your child's name?	
13. What is your full name?	
14. How are you related to the child?	❒ Mother (1) ❒ Father (2) ❒ Grandparent (3) ❒ Older brother/sister (4) ❒ Other caregiver (5) Specify (5A): _____
15. What is the number of 7-10-year-old children in the family?	
16. How many of the 7-10-year-old children in the family are attending school?	
17. What is the number of 11-15-year-old children in the family?	
18. How many of the 7-10-year-old children in the family are attending school?	

PART 2: Home Environment / Parenting Practices

8. Do you have any of the following types of other reading materials at home?			
	❒ Yes (1)	❒ No (0)	❒ Don't know (99)
4. Story/picture books for young children?			
If yes, how many books?			
b. Textbooks?			
c. Magazines?			
d. Newspapers?			
e. Religious books?			
f. Coloring books?			
g. Comics?			
9. I am interested in learning about the things that your child plays with when s/he is at home. Does s/he play with:			
a. Homemade toys, such as stuffed dolls, cars, or other toys made at home?			
b. Toys from a shop or manufactured toys?			
c. Household objects, such as bowls, cups or pots?			
d. Objects found outside, such as sticks, stones or leaves?			
e. Does your child have any drawing or writing materials?			
f. Does child have any puzzles (even a two piece puzzle counts)?			
g. Does your child have any two or three piece toys that require hand-eye coordination?			
h. Does child have toys that teach about colors, sizes or shapes?			
i. Does child have toys or games that help teach about numbers/counting?			
j. Others			

10. In the past week, did you or any other family member older than 15 years engage in these activities with <<insert child's name>>? Note: ask "Who?" if the answer is "yes". – *tick as many as appropriate*	**Yes (1)**	**No (0)**	**Mother (2)**	**Father (3)**	**Other caregiver (4)**
a. Read books or look at pictures books with child?					
b. Tell stories to the child?					
c. Sing songs to or with the child, including lullabies?					
d. Take the child outside the home? For example, to the market, visit relatives.					
e. Play with the child any simple games?					
f. Name objects or draw things to or with the child?					
g. Show or teach your child something new, like teach a new word, or teach how to do something?					
h. Teach alphabet or encourage to learn letters to the child?					
i. Play a counting game or teach numbers to the child?					
j. Hug or show affection to your child?					
k. Spank your child for misbehaving?					
l. Hit your child for misbehaving?					
m. Criticize or yell at your child?					

11. I would like to know about how your child spends his/her day.	
a. On a regular day, how many hours does the mother spend time talking, walking, and/or playing with the child?	
b. On a regular day, how many hours does the father spend time talking, walking, and/or playing with the child?	
11. On a regular day, how many hours the child spend in the care of another child who is less than 10 years old?	
12. On a regular day, how many hours does the child spend alone?	

Part 3: Health Status

1. In general, would you say that your child's health is?

Very good	1
Good	2
Moderate	3
Bad	4
Very bad	5
Unsure	88
Refused	99

2. In the last 6 months, has [child name] received deworming?

Yes	1
No	2
Unsure	88
Refused	99

3. In the past 2 weeks, has [child name] had diarrhea, defined as loose stools more than 3 times per day?

Yes	1
No	2
Unsure	88
Refused	99

4. In the past 2 weeks, has [child name] had cough or difficulty breathing?

Yes	1
No	2
Unsure	88
Refused	99

5. When was the last time that [study child name] was weighed for growth monitoring?

Less than 1 month ago	1
1-3 months ago	2
3-6 months ago	3
6-12 months ago	4
Longer than 12 months ago or never weighed	5
Unsure	88
Refused	99

Part 4: Child's Preschool Education

6. Did you enroll your child in any preschool program in 2018?

Yes → continue to Q18	1
No → continue to Q33	2

7. If yes, which type of preschool program?

Public preschool	1
Private preschool	
BRAC preschool	2
Madrasa/Islamic preschool	3
Other preschool	8
Unsure	88
Refused	99

8. On average, how many days per week did your child addend this preschool?

One	1
Two	2
Three	3
Four	4
Five or More	5
Unsure	88
Refused	99

9. Was this preschool programme a full day prorgamme (morning and afternoon), or a half day programme (only morning or only afternoon)?

Full day	1
Half Day	2
Refused	99
Unsure	88

10. How confident were you in your abilities to prepare your child for preschool?

Not at all confident	1
A little confident	2
Somewhat confident	3
Very confident	4

I would now like to read you some statements about your child's preschool, and I want you to tell me whether you think each is not at all true, a little bit true, mostly true, or very true in your opinion. All the answers you provide will be kept confidential. This means that no one at your child's school will know what you tell me here.

11. The school was a good place for my child to be.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

12. The school did a good job preparing children for their futures.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

13. Going to school exposed my child to harmful people or ideas.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

14. The school met my child's academic needs.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

15. The school met my child's social and behavioral needs.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

16. Doing well in preschool will improve my child's chances of having a good life when he/she grows up.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

17. This preschool kept me informed about my child's performance and behavior.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

18. I like the teacher(s) at the preschool.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

19. I feel comfortable talking with my child's preschool teacher.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

20. The preschool is a welcoming place for families like mine.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

21. The preschool is a safe place for my child.

Not at all true	1
A little bit true	2
Mostly true	3
Very true	4

1. Closing

2. Why didn't you send your child to preschool in 2018?

He/she was too young	1
There was no preschool in my area	
My family didn't like the preschool(s) in my area	2
There were not enough spaces in the preschool(s) in my area	3
Other	8
Unsure	88
Refused	99

Closing

Thank you for taking the time to speak with me today.

Appendix F. Teacher Questionnaire

Date of Interview: _____ / _____ / ___

School name: _____

School ID_____

Introduction

Thank you for your time. My name is _____, and I work for Data International Ltd. and we are evaluating how well the Early Years Preschool Programme meets the needs of Bangladeshi children, and learning how the prorgamme could be improved. Your answers to the following questions will help us greatly in reaching this purpose. This interview is voluntary. We are not here to judge you as a teacher, so please let us know your honest opinions. You do not need to answer any questions that you do not wish to answer, and you can stop answering questions any time without penalty. All of your answers are confidential. Again, thank you for your time.

PART 1: Perceptions of the Early Years Preschool Programme

I am going to read ten statements about the Early Years Preschool Programme. For each, please tell me if you feel that this statement is not at all true, a little bit true, mostly true, or very true. Again, there are no right or wrong answers to these questions.

1. The programme is necessary for children in this community.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
2. The programme builds children's early mathematics skills well.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
3. The programme builds children's early literacy skills well.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
4. The programme builds children's vocabularies.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
5. The programme builds children's understanding of how the world works.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
6. The programme builds children's social skills with their peers.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)

7. The programme builds children's ability to behave well in a classroom.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
8. The children enjoy attending the programme.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)

PART 2: Teaching the Early Years Preschool Programme

Now I would like to ask you about your experiences teaching the Early Years Preschool Programme. Again, I am not here to judge you as a teacher, but rather to learn how well the programme works and where it could be improved.

9. I have received adequate training and/or coaching to be able to teach the programme well.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
10. The instructions for teachers are clear, so I know how to deliver activities in the curriculum.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
11. I have the materials I need to deliver the activities in the curriculum.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
12. I am able to maintain control of my class while carrying out the curriculum.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)

13. Sometimes children find the programme activities boring.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
14. The curriculum activities to teach mathematics are <u>too</u> <u>easy</u> for many children in my class.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
15. The curriculum activities to teach mathematics are <u>too difficult</u> for many children in my class.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
16. The curriculum activities to teach literacy are <u>too</u> <u>easy</u> for many children in my class.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
17. The curriculum activities to teach literacy are <u>too difficult</u> for many children in my class.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)
18. I am able to meet the learning needs of <u>all</u> of the children in my class.	❒ Not at all true (1) ❒ A little bit true (2) ❒ Mostly true (3) ❒ Very true (4) ❒ Don't know (99)

PART 3: Recommendations

19. Based on your experiences, what are the three best things about the programme?	[Open response 1] [Open response 2] [Open response 3]
20. Based on your experiences, what three things most need to be improved about the curriculum?	[Open response 1] [Open response 2] [Open response 3]
21. Based on your experiences, are there any things that should be improved about the training or support teachers receive to deliver the programme?	No [1] Yes [2]
22. If yes, what should be improved? [If more than three, note only top three]	[Open response 1] [Open response 2] [Open response 3]

AIR®

AMERICAN INSTITUTES FOR RESEARCH®

Established in 1946, American Institutes for Research (AIR) is an independent, nonpartisan, not-for-profit organization that conducts behavioral and social science research on important social issues and delivers technical assistance, both domestically and internationally, in the areas of education, health, and workforce productivity.

MAKING RESEARCH **RELEVANT**

AMERICAN INSTITUTES FOR RESEARCH
1000 Thomas Jefferson Street NW
Washington, DC 20007-3835 | 202.403.5000
www.air.org

LOCATIONS

Domestic: Washington, DC (HQ) | Monterey, Sacramento, and San Mateo, CA | Atlanta, GA | Honolulu, HI | Chicago and Naperville, IL Indianapolis, IN | Metairie, LA | Waltham, MA | Frederick and Rockville, MD | Chapel Hill, NC | New York, NY | Columbus, OH | Cayce, SC Austin, TX | Reston, VA

International: El Salvador | Ethiopia | Haiti | Honduras | Kyrgyzstan | Tajikistan | Zambia