

Myanmar East Asia- Pacific Early Child Development Scales (EAP-ECDS) Project

Nirmala Rao

Ben Richards

Mami Umayahara

with Jin Sun, John Bacon-Shone, Patrick Ip, Diana Lee, and Yvonne Becher

HKU Early Childhood Development and Education Research Team

Faculty of Education, The University of Hong Kong

June, 2017

Acknowledgements



We thank the Myanmar team which is led by the Rector of the Yangon University of Education, implemented by the Professors and students from the Education Psychology Department of the Yangon University of Education, in collaboration with education officials from the Department of Basic Education and Department of Education, Research, Planning and Training of the Ministry of Education, early childhood development trainers, language teachers and translators from Language and Cultural Committees of Sakaw Kayin, Mon, Jingspaw, Tai Nay Shan, Yinthway Foundation and UNICEF for their dedication and high quality work. We also express our gratitude to the children and parents who participated in this study. Our gratitude also goes to community level representatives of General Administration Department of the Ministry of Home Affairs for providing children's information and principals of preschools supported by the Department of Social Welfare of the Ministry of Social Welfare Relief and Resettlement and also of the Faith Based Organizations, NGOs and CBOs for supporting assessment of children participating in their program. This study was funded by UNICEF Myanmar, Denmark and European Union as part of the Building on Quality Basic Education Programme. The authors declare no conflict of interest.



Contents



Contents

Acknowledgements	3
Executive Summary	9
Background	13
Country context	14
Objectives	17
Methodology	19
The EAP-ECDS	20
Sample	20
Results	23
Analysis Plan	25
Findings	26
Overview of early childhood development and learning	26
Impact of preschool attendance: demographic groups	35
Impact of preschool attendance: types of preschool	37
Medium of instruction: language provision	39
Impact of preschool attendance on different child development domains	42
Recommendations	45
Annexes	49
Annex 1. EAP-ECDS Scoring Form (Short form - English version)	50
Annex 2. EAP-ECDS Parent questionnaire (English version)	51
Annex 3. Additional data on height, weight, and home learning environment	52
Age, gender and urbanicity differences in height and weight	52
Home learning environment	53

List of Tables

Table 1.	Composition of sample	22
Table 2.	Tests of reliability - Cronbach's alpha scores for each domain	24
Table 3.	Correlations between EAP-ECDS domains	24
Table 4.	Overview of EAP-ECDS scores (range from 0 to 100)	29
Table 5.	Number of minority-language speakers attending minority-language preschools	40



List of Figures

Figure 1a.	Differences in overall development scores by group (range 0 to 100)	30
Figures 1b to 1d	Age differences across Gender, Urbanicity, Preschool Attendance	31
Figure 2.	Differences in scores for Health, Hygiene and Safety	32
Figure 3.	Differences in scores for Motor Development	33
Figure 4.	Differences in scores for Language and Emergent Literacy	34
Figure 5.	Differences in overall development scores for children attending preschool compared to those not attending, by different demographic groups	36
Figure 6:	Tests of statistical significance for differences of preschool impact between demographic groups	37
Figure 7.	Associations between preschool attendance and overall development by type of preschool	38
Figure 8.	Proportion of preschool intake from each wealth quintile, by preschool type	39
Figure 9a:	Marginal mean development scores of minority-language children attending preschools with a minority language as the main language of provision, compared to those attending preschools with Myanmar as the main language of provision	41
Figure 9b:	Developmental scores of minority-language children attending preschools with a minority language as the main language of provision, compared to those attending preschools with Myanmar as the main language of provision	41
Figure 10a.	Differences in raw development scores by preschool attendance	43
Figure 10b:	Differences in developmental scores between children attending preschool and those not attending across developmental domains, in standard deviation units	44
Figure A1.	Age, gender, and urban-rural differences in height	52
Figure A2.	Age, gender, and urban-rural differences in weight	53
Figure A3.	Adult-child activities	54

Executive Summary



Background

The Republic of the Union of Myanmar has been implementing major political and economic reforms since 2011. The Myanmar Early Childhood Care and Development (ECCD) Policy was endorsed in 2014 signalling the priority placed on the early years of development. Against this background, UNICEF Myanmar commissioned The University of Hong Kong to provide technical support to the Yangon University of Education (YUoE) in administering the East Asia and Pacific Early Child Development Scales (EAP-ECDS) in Myanmar. No measures of child development existed hitherto in Myanmar.

Objectives

The main objective of this project was to equip the key ECCD stakeholders in Myanmar with a reliable measurement tool to assess the holistic developmental status of children from three to five years of age. A secondary objective was to work closely with the research team members in Myanmar to further strengthen their research capacity.

Methodology

The EAP-ECDS Short Form (SF) consists of 33 items to assess children's development in seven domains: Cognitive Development; Socio-Emotional Development; Motor Development; Language and Emergent Literacy; Health, Hygiene, and Safety; Cultural Knowledge and Participation; and Approaches to Learning. The EAP-ECDS SF was administered to 1,502 children (769 girls). The sample was stratified by state/region, urban or rural location, age and gender. The assessments were conducted in Myanmar (Burmese language) and several ethnic minority languages between November 2016 and February 2017. In addition to child assessments, the participating children's parents or guardians were interviewed in individual sessions.

Findings

Result indicate that in terms of **demographic variables**: (i) older children had significantly higher scores than younger children in all domains of development showing that the Myanmar version of the EAP-ECDS SF is a developmental scale; (ii) girls performed better than boys in all domains except Motor Development; (iii) urban children did better than rural children in most domains, but children residing in the Yangon satellite areas tended

to have the lowest scores; (iv) children from the ethnic majority group had higher scores than ethnic minority children in all domains; (v) children from wealthier families had higher scores than those from poorer households; (vi) urban and wealth differences were less apparent for Motor Development than in other domains.

Findings also signalled the potent influence of **preschool attendance** on children's development. Even after suitable statistical controls, preschool attendance was significantly associated with higher overall development scores for all wealth quintiles, majority and minority ethnic groups, boys and girls, and those residing in both urban and rural areas. However, the benefits of attending preschool differed: (i) the most economically disadvantaged children (lowest wealth quintile) and the most advantaged children (highest wealth quintile), respectively showed larger benefits from attending preschool than other children; (ii) the impact of preschool attendance was higher for children from ethnic majority than those from ethnic minority groups; (iii) the type of preschool attended made a difference with largest developmental scores noted among children attending faith-based programmes (church or monastery) compared to other programmes, including school-based preschools; (iv) Children attending stand-alone kindergartens or preschools attached to primary or secondary schools also had higher development than those who attended community-based centres or preschools attached to basic education middle schools or high schools. On the other hand, there were no gender or regional difference in the benefits of preschool attendance. The positive impact of preschool attendance was similar for boys and girls and for children residing in either urban or rural areas.

Results also indicated that the **language of instruction in preschool** was associated with overall developmental scores. Minority-language children attending a preschool had higher domain scores for Language and Emergent Literacy, Approaches to Learning, Cultural Knowledge and Participation, and Motor Development when the main language of instruction was a minority language than those attending preschools with Myanmar as the main language of provision.

Recommendations

On the basis of the findings from the EAP-ECDS SF administration in Myanmar, we make the following recommendations:

1. Address gender, regional, ethnic and socioeconomic differences in early childhood development through the provision of ECCD programmes.
2. Continue and accelerate the efforts to expand access to ECCD programmes as ALL children have been shown to benefit from attendance in ECCD programmes.
3. Enhance the quality of the programmes for marginalised and disadvantaged groups, including ethnic minorities and the urban poor (e.g. Yangon satellite). Currently urban and ethnic majority children seem to benefit more from attending preschool programmes than other children.
4. Encourage the sharing of best teaching practices from church or monastery-based preschools.
5. Provide ECCD programmes in children's mother tongue and integrate appropriate strategies for official language (Myanmar) acquisition and transition to primary school.
6. Support children's development and learning across different domains of development as they are interconnected.
7. Use these findings as a baseline and monitor the country's progress in increasing access to ECCD programmes and enhancing child outcomes.

On the basis of the international literature we recommend that the country continues to adopt an integrated and coordinated approach in ECCD policy and programmes, particularly those targeting disadvantaged children, so that the ECCD services combine education, health, nutrition and protection as well as support for the family and the community. This study did not consider the quality of programmes but we know that programme quality matters. Hence we recommend that **both** preschool expansion **and** quality are given policy priority.

BACKGROUND



Country context

The Republic of the Union of Myanmar has experienced tremendous changes in recent years. The political and economic reforms launched in 2011 led to the opening of a country that had been isolated since 1962 because of the rule of repressive military regime. These reforms also allowed increased freedom of the press and association as well as a nationwide cease-fire agreement with several of the country's ethnic groups. In November 2015, the National League for Democracy achieved a landslide parliamentary election victory and the country's first credibly elected civilian government was sworn into office in March 2016.

Myanmar consists of seven Regions of the Bamar ethnic majority group, seven States that bear the name of the largest non-Bamar group and the Nay Pyi Taw Union Territory, which was created in 2006 as the country's administrative capital. Myanmar is composed of at least 135 national ethnic groups whose members speak over 100 languages. Many of these ethnic groups are found in border regions, and currently most of them are unable to access early childhood care and development (ECCD) services¹.

The country has one dominant national language, the Myanmar language, which is spoken as a mother tongue by the Bamar ethnic group. It is the official language, the main medium of education and the language used in the government and in the justice system². The exclusive control of the state education system and the school curriculum by the central government was changed in 2014 with the passing of the 2014 Education Law. This Law devolved some responsibility for the curriculum to lower administrative levels and supported the introduction of ethnic languages into education, starting from lower education levels. However, despite the existence of a great variety of non-state ethnic education regimes in minority ethnic states, there has been no progress towards making ethnic languages the medium of instruction in government schools³. The vast bulk of primary, secondary and higher education is carried out in government schools, and the examination system and the approval for non-government schools and higher education institutions remain under central control⁴.

1 The Republic of the Union of Myanmar. (2014). *Myanmar Policy for Early Childhood Care and Development*. http://www.themimu.info/sites/themimu.info/files/documents/Ref_Doc_Early_Childhood_Care_Development_Policy_2014.pdf.

2 Bradley, D. (n/d). 'The Languages of Myanmar'. Mimeo.

3 South, A. and Lall, M. (2016). *Schooling and Conflict: Ethnic Education and Mother Tongue-based Teaching in Myanmar*. <http://asiafoundation.org/publication/schooling-and-conflict-ethnic-education-and-mother-tongue-based-teaching-in-myanmar/>.

4 Bradley, D. *op. cit.*

According to the 2014 Myanmar Population and Housing Census⁵, Myanmar's population is 51,186,253, of which 24,824,586 (48.2%) were males and 26,661,667 (51.8%) were females. The same census shows that 70% of the population live in rural areas and 30% live in urban areas. However, the government foresees increasing urbanization in the coming decades and forecasts that by 2040 half of Myanmar's people will be living in urban areas⁶. The 2014 census also reveals that the country's literacy rate (population 15 years or older) is 89.5%, which may be considered high for a low- and middle-income country but the figure masks urban/rural, gender and regional disparities that exist within the country. For example, literacy rates vary from 95.2% for the urban population to 87.0% for the rural population. The literacy rate for males (92.6%) is higher than that for females (86.9%). The disparities in adult literacy rate are even more prominent among Regions/States ranging from 64.6% (male 70.3%, female 59.4%) in Shan to 96.6% (male 98.0%, female 95.5%) in Yangon.

Myanmar's Human Development Index value for 2015 is 0.556, which puts the country in the medium human development category and positions it at 145 out of 188 countries and territories⁷. It is estimated that 26% of the population is below the poverty line – with the poverty rate being twice as high in rural areas where 70% of the population lives. The remote border areas, mainly populated by Myanmar's minority ethnic groups and areas emerging from conflict are particularly poor⁸. Only 26 percent of the population has access to electricity. While poverty is concentrated in rural areas⁹, with increased urbanisation, urban poverty is also pronounced (estimated at 34.6% in 2010), reflecting high living costs and limited access to stable and well-paid employment¹⁰. In Yangon, slums are home to 10-15% of the population. Here employment opportunities are sparse and social safety nets are weak¹¹.

5 Department of Population. (2015). *The 2014 Myanmar Population and Housing Census: The Union Report. Census Report Volume 2*. Ministry of Immigration and Population: Nay Pyi Taw.

6 Asian Development Bank. (2016). *Making Myanmar's Cities More Inclusive: A Way Forward*. <https://www.adb.org/sites/default/files/publication/190669/making-mya-cities-inclusive.pdf>.

7 UNDP. (2016). Briefing note for countries on the 2016 Human Development Report. http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/MMR.pdf.

8 UNDP. <http://www.mm.undp.org/content/myanmar/en/home/countryinfo.html>. Accessed on 12 May 2017.

9 World Bank. <http://www.worldbank.org/en/country/myanmar/overview#1>. Accessed on 12 May 2017.

10 World Bank (2014) cited in Doberman, T. (2016). *Urban Myanmar*. <http://www.theigc.org/wp-content/uploads/2017/01/IGC-Urban-Myanmar.pdf>

11 Ibid.

When it comes to the situation of young children, updated information and statistics are scarce. According to the Myanmar Multiple Indicator Cluster Survey (2009-2010), 22.9% of children aged 36-59 months were attending early childhood education (ECE) in Myanmar in 2009-2010 – an increase from 9% in 2000¹². Inequities in ECE participation are prominent in terms of urban vs. rural (39.1% vs. 15.9%), richest vs. poorest wealth quintiles (46.0% vs. 7.6%) and across States/Regions (ranging from 5.4% in Rakhine to 60.7% in Kayah). The country has an under-five mortality rate of 50 per 1,000 live births, ranking at 44th highest among 193 countries, and as many as 35% of children under five years were estimated to be stunted during the 2010-2015 period¹³. In this context, the development of the Myanmar Early Childhood Care and Development Policy (2014) is indeed historical and expected to have a major impact as it represents the government's priority and strong commitment to holistic development of children from conception to eight years of age. The Policy is to be implemented through successive Five-Year ECCD Strategic Plans.



12 Ministry of National Planning and Economic Development, Ministry of Health and UNICEF. (2011). *Myanmar Multiple Indicator Cluster Survey 2009–2010*, UNICEF: Nay Pyi Taw.

13 UNICEF. (2016). *The State of the World's Children 2016: A Fair Chance for Every Child*. UNICEF: New York.

OBJECTIVES



No measures of child development existed hitherto in Myanmar¹⁴. The main objective of this project was to equip the key ECCD stakeholders in Myanmar with a reliable measurement tool to assess the holistic developmental progress of children from three to five years of age. UNICEF Myanmar commissioned The University of Hong Kong to provide technical support to the Yangon University of Education (YUoE) in implementing the East Asia and Pacific Early Child Development Scales (EAP-ECDS) in Myanmar. A secondary objective was to work closely with the research team in Myanmar to further strengthen their research capacity. This final report presents the findings of the first application of the EAP-ECDS Short Form (SF) in Myanmar and the recommendations for future work.

The development, validation and finalisation of the original EAP-ECDS of 85 items was carried out between 2010 and 2014 with support of UNICEF, the Asia-Pacific Network for Early Childhood (ARNEC) and the Open Society Foundations (OSF) with technical guidance provided by the Early Childhood Development and Education Research Team, Faculty of Education, The University of Hong Kong. The EAP-ECDS SF consisting of 33 items was subsequently developed.

Today, countries around the world recognise the critical importance of early childhood development, care and education as a foundation for lifelong learning and human development as reflected in the adoption of Target 4.2 of the Sustainable Development Goals: 'by 2030 ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education'. More and more governments are willing to provide free or subsidised – and even compulsory – pre-primary education and improve its quality and outcomes. It was expected that stakeholders in Myanmar including policy makers, universities, research institutions and development partners would be able to utilise the findings of this assessment of young children's learning and development outcomes to promote quality early childhood development, care and education and optimise the human development potential by further investing in the early years.

14 The Republic of the Union of Myanmar. (2014). *Myanmar Policy for Early Childhood Care and Development*. http://www.themimu.info/sites/themimu.info/files/documents/Ref_Doc_Early_Childhood_Care_Development_Policy_2014.pdf.

METHODOLOGY



The EAP-ECDS

The original EAP-ECDS consisting of 85 items was developed on the basis of the Early Learning and Development Standards (ELDS) from countries in the East Asia and Pacific region. The EAP-ECDS was shown to be a valid and reliable measure of developmental functioning across all six countries (Cambodia, China, Mongolia, Papua New Guinea, Timor-Leste and Vanuatu). An equally psychometrically robust 33-item version of the EAP-ECDS was created in 2016. The EAP-ECDS involves the direct assessment of children's learning and development in seven domains:

1. Cognitive Development
2. Socio-Emotional Development
3. Motor Development
4. Language and Emergent Literacy
5. Health, Hygiene, and Safety
6. Cultural Knowledge and Participation
7. Approaches to Learning

EAP-ECDS assessments in Myanmar were carried out between November 2016 and February 2017 by trained assessors. Training was provided by members of the HKU team. Assessments were administered in the Myanmar language, and in several ethnic minority languages: Sakaw Kayin, Mon, Jingphaw, and Tai Nai Shan. Translation into ethnic minority languages enabled the inclusion of survey participants for whom Myanmar was not their first language. Back-translation procedures were used to ensure equivalence between questionnaires in different languages. Particular attention was given to: (i) ensuring that the specific items were culturally appropriate; (ii) training assessors to use standardised assessment processes; (iii) evaluating inter-assessor reliability; and (iv) minimising bias and errors in the assessment process.

Sample

The sample was drawn from five states or regions with a wide range of economic development and with a large number of different ethnic groups. Three States (Kachin, Mon and Rakhine) and two Regions (Sagaing and Yangon) were selected to represent a variety of different ethnicities and a variety of different socioeconomic circumstances.

The EAP-ECDS SF was administered to a total of 1,502 children. The sample was stratified by state/region, urban or rural location, age and gender. Approximately 300 children were selected from each state/region, and in each state/region approximately 150 were selected



Source: Myanmar Information Management Unit

from urban and 150 from rural areas. The exception to this was Yangon, for which the sample was stratified by urban, rural and Yangon satellite areas, with a target of approximately 100 children sampled from each. The Yangon satellite areas are located on the outskirts of the city of Yangon and were specifically sampled in this way because of the presence of migrant populations.

After stratification by state/region and urban or rural location, wards (for urban areas) or village tracts (for rural areas) were randomly selected with the probability of selection being in proportion to an estimate of the 3- to 5- year old population of each ward or village tract, based on national census data. Sampling with replacement was used in cases where there was a clear safety risk to assessors in travelling to the sampled ward or village tract because of armed conflict. Within each sampled ward or village tract, children were randomly selected for assessment, but stratification ensured that approximately equal numbers of 3, 4 and 5 year olds, and equal numbers of boys and girls, were selected in each case. Table 1 below shows the final composition of the sample broken down by urban-rural residence, gender, age, and region or state. Children from the Yangon satellite areas are also shown separately.

In addition to child assessments being carried out, the participating children's parents or guardians were also interviewed in individual sessions to obtain: (i) standard demographic data, (ii) reports on the child's early learning and development and (iii) information about the child's health and habits. Preschool teachers or other personnel of ECCD programmes attended by the children were not interviewed or observed as part of this study.



Table 1. Composition of sample

State/ region	Urban						Rural						Missing data	Total
	Boys			Girls			Boys			Girls				
	3y	4y	5y	3y	4y	5y	3y	4y	5y	3y	4y	5y		
Yangon	22	17	22	21	17	22	16	18	18	14	16	16	3	222
Yangon satellite	12	14	14	15	13	12	0	0	0	0	0	0	0	80
Sagaing	22	22	25	26	25	27	21	28	24	28	24	24	4	300
Mon	19	23	23	21	20	22	29	28	27	26	31	29	2	300
Rakhine	20	23	21	24	19	21	26	32	27	28	27	28	4	300
Kachin	20	23	13	17	23	25	25	29	30	33	32	29	1	300
Total	115	122	118	124	117	129	117	135	126	129	130	126	14	1,502

RESULTS



Table 2 below shows that, with the exception of the Motor Development, all domains had high reliability with coefficients of 0.87 or above. Motor Development had lower reliability with a coefficient of 0.68.

Table 2. Reliability coefficients for the EAP-ECDS SF Myanmar version

Domain	Cronbach's alpha
Cognitive Development	0.90
Socio-emotional Development	0.88
Motor Development	0.68
Language and Emergent Literacy	0.94
Health, Hygiene and Safety	0.89
Cultural Knowledge and Participation	0.89
Approaches to Learning	0.91

Table 3 shows the inter-correlations between the different domains of the EAP-ECDS. All correlations were significant. Strong positive correlations were evident among the four domains that have been shown to be particularly related to school readiness and early achievement: Cognitive Development, Socioemotional Development, Language and Literacy and Approaches to Learning.

Table 3. Correlations between EAP-ECDS domains

	CD	SED	MD	LEL	HHS	CKP	ATL
Cognitive Development (CD)	1.00						
Socio-emotional Development (SED)	0.68	1.00					
Motor Development (MD)	0.51	0.43	1.00				
Language and Emergent Literacy (LEL)	0.80	0.67	0.47	1.00			
Health, Hygiene and Safety (HHS)	0.60	0.66	0.45	0.57	1.00		
Cultural Knowledge & Participation (CKP)	0.50	0.53	0.37	0.55	0.51	1.00	
Approaches to Learning (ATL)	0.68	0.59	0.47	0.66	0.52	0.43	1.00

Analysis Plan

Means and standard deviations for children's scores in each developmental domain were calculated. An overall development score, calculated as the total of all domain scores divided by the number of domains (7), was also determined. Scores were converted to have a range of between 0 and 100 for ease of interpretation and to help comparability between domains. Descriptive statistics are broken down by age (3, 4 and 5 years), gender, urban-rural residence (urban, rural and Yangon satellite areas), preschool attendance (within the last 30 days), ethnicity (majority vs minority), and household wealth quintile. Household wealth was calculated based on questions on asset ownership taken from UNICEF's Multiple Indicator Cluster Survey (UNICEF, 2005). These included whether the household has electricity, a radio, television, telephone, refrigerator, motorcycle, car, or boat. Following Filmer and Pritchett¹⁵, Principal Components Analysis (PCA) was used to construct a composite wealth indicator based on the first component. Because type of asset ownership differed between states and regions, PCA was conducted for each state or region separately so wealth quintiles are derived based on asset ownership relative to other households in that state or region.

Hierarchical Linear Modelling (HLM) was then used to compare differences in developmental scores by preschool attendance, controlling for urban-rural residence, gender, ethnicity, wealth quintile, maternal education, and age. HLM is an appropriate technique as it accounts for clustering within the survey design¹⁶. In this sample, children resided in particular village tracts or wards, and these village tracts or wards were located within particular regions or states. HLM provides a technique to analyse children within this hierarchical structure and accounts for potential similarities between children residing in the same area.

HLM was used to analyse:

- Differences in overall development scores for children attending preschool compared to those not attending, across different demographic groups;
- Differences in developmental scores between children attending preschool and those not attending across developmental domains.

15 Filmer, D. and Pritchett, L. H. (2001). Estimating wealth effects without expenditure data—or tears: an application to educational enrolments in states of India. *Demography*, 38(1), 115-132.

16 Bartholomew, D. J., Steele, F., Galbraith, J., and Moustaki, I. (2008). *Analysis of multivariate social science data*. CRC press.

- For those attending preschool, differences in development scores depending on the type of preschool location (such as Church or Monastery, community-based preschool, or a preschool in a primary school); and
- For children with a minority language as their first language, differences in development scores between children attending minority-language preschools compared to those attending Myanmar-language preschools;

Findings

Overview of early childhood development and learning

Table 4 shows descriptive statistics of child development scores for each domain and for the mean overall development score, broken down by age, gender, urban-rural residence (with the Yangon satellite areas also shown separately), recent preschool attendance, ethnicity, and wealth quintile. Standard deviations are also shown beneath the development scores to indicate the range of the scores within the group.

Results show that:

- Older children consistently have higher scores than younger children;
- Girls have higher scores than boys in all domains except Motor Development;
- Urban children have higher scores than rural children in most domains, but children residing in the Yangon satellite areas tend to have the lowest scores of all except for Language and Emergent Literacy;
- Children from the ethnic majority group have higher scores than ethnic minority children in all domains; and
- Children from wealthier households tend to have higher scores than children from poorer households, but this pattern is not apparent for the Motor Development domain.

Figures 1 to 4 illustrate these differences graphically. Figure 1a shows differences in the overall development score across these different groups, with scores ranging from 0 to 100. Children's age makes the most obvious differences in scores with three-year-olds have an average score of 31.7, whilst five-year-olds have an average score of 70.4. Also important is children's preschool attendance as those who have recently attended preschool have an average score of 57.2, whilst those who have not had an average score of 42.1. Children in the poorest wealth quintile have an average score of 43.5, whilst those in the richest quintile have an average score of 56.0.

Figure 1b shows difference in overall development score by age and gender. The difference between boys and girls is not significant at any age group. This is because boys did better than girls in Motor Development whereas girls did better than boys in other domains. Figure 1c also shows that urbanicity differences are only significant for 4-year-olds and Figure 1d shows that preschool attendance is associated with significantly better development at all ages.

Figure 2 shows differences in scores for Health, Hygiene and Safety – the domain that shows the largest wealth differences. Children in the poorest wealth quintile have average scores of 60.6, whilst those in the richest quintile have scores averaging 81.9. The differences between those attending preschool and those not attending are almost as large, at 80.4 and 62.8 respectively.

Figure 3 shows differences in scores for Motor Development. The smallest wealth differences were recorded for this domain, ranging from 63.4 for the poorest quintile to 67.3 for the wealthiest quintile. Overall differences between urban and rural areas are also small with rural children scoring marginally better (65.9) than urban children (65.2), but children from the Yangon satellite areas have the lowest scores (60.4). This is the only domain in which boys did better than girls (68.3 vs. 62.4).



Figure 4 shows differences for scores in Language and Emergent Literacy, which has moderate wealth and ethnicity differences among children, ranging from 34.8 for the poorest wealth quintile to 47.1 for the richest wealth quintile. The average ethnic majority score is 43.2 compared to the average ethnic minority score of 40.3. While children's age makes a major difference, ranging from 19.9 for three-year-olds to 67.4 for five-year-olds, preschool attendance also makes difference as those recently attending preschool have an average score of 48.6 whilst those not recently attending preschool have an average score of just 32.1.



Table 4. Overview of EAP-ECDS scores (range from 0 to 100)

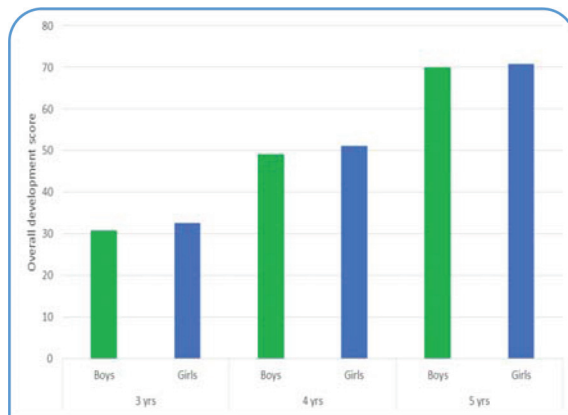
	Age		Gender		Urban-rural			Preschool attendance		Ethnicity		Wealth Quintile					
	3 y.o.	4 y.o.	5 y.o.	Boys	Girls	Urban	Rural	Yan-gon satellite	Yes	No	Majority	Minority	Q1 (poorest)	Q2	Q3	Q4	Q5 (richest)
	487	504	503	738	764	649	767	80	880	622	722	768	301	300	303	299	299
Development scores (means, with standard deviations shown below)																	
Overall development score	31.7	50.1	70.4	50.3	51.6	53.2	49.5	46.4	57.2	42.1	52.9	49.0	43.5	48.9	50.9	55.5	56.0
	16.0	17.6	15.4	22.6	22.8	22.5	22.8	22.0	20.8	22.5	22.6	22.6	23.2	22.0	23.1	21.6	21.4
Cognitive Development	15.9	28.9	48.9	30.5	32.3	33.1	30.1	29.7	36.0	24.8	32.1	30.7	25.2	28.9	30.7	35.8	36.4
	11.1	15.7	18.6	20.5	20.6	20.5	20.4	21.2	20.0	19.5	20.7	20.3	19.4	19.0	20.9	21.1	20.2
Socio-emotional Development	30.3	45.3	64.3	45.8	47.8	49.3	45.3	39.5	53.0	38.1	48.1	45.7	37.2	44.4	48.3	52.5	51.7
	21.0	22.5	22.5	26.1	26.0	25.0	26.7	25.7	25.0	25.0	25.0	26.8	26.4	24.6	26.5	24.6	25.0
Motor Development	47.4	67.0	81.1	68.3	62.4	65.2	65.9	60.4	69.8	59.0	65.6	64.8	63.4	64.1	65.1	67.3	66.6
	26.3	22.9	18.3	26.9	25.8	27.0	26.1	26.6	24.3	28.2	26.3	26.7	27.7	27.4	26.5	25.9	24.8
Language and Emergent Literacy	19.9	37.3	67.4	39.4	44.0	44.4	39.5	41.8	48.6	32.1	43.2	40.3	34.8	39.1	41.2	46.8	47.1
	14.8	22.2	23.3	28.1	28.5	28.9	28.1	25.0	27.9	26.1	29.1	27.6	25.7	26.6	28.9	29.1	29.6
Health, Hygiene and Safety	54.7	74.6	89.5	72.8	73.4	75.4	71.7	66.9	80.4	62.8	75.6	71.0	60.6	70.5	74.2	78.4	81.9
	32.4	27.1	17.8	30.1	29.8	28.1	31.1	32.4	24.9	33.2	29.0	30.6	34.4	30.4	30.0	25.6	23.5
Cultural Knowledge and Participation	31.8	48.8	62.6	46.2	49.7	49.3	47.3	44.2	52.7	41.2	54.1	42.1	43.1	46.2	47.5	51.4	51.6
	27.5	28.8	26.5	30.0	30.6	29.7	31.5	22.3	29.5	30.2	28.4	30.9	29.0	30.1	31.1	29.7	30.9
Approaches to Learning	22.1	48.6	79.3	48.9	51.6	55.4	46.7	42.1	59.8	36.8	51.9	48.5	40.5	49.0	49.3	55.9	56.7
	30.5	39.1	31.2	41.0	41.1	40.6	40.7	43.9	39.3	39.8	40.8	41.3	39.9	41.4	41.0	41.1	40.2

Figure 1a. Differences in overall development scores by group (range 0 to 100)



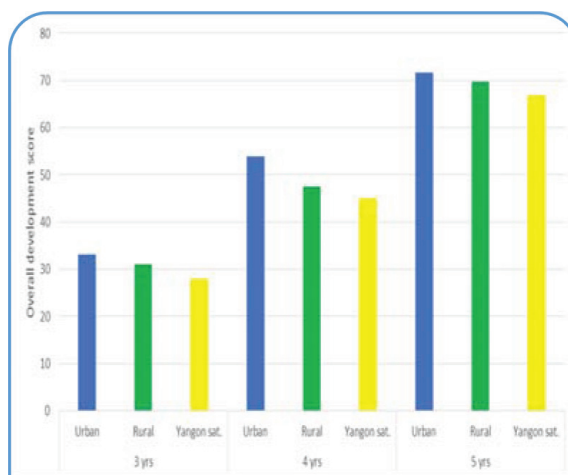
Figures 1b to 1d. Age differences across Gender, Urbanicity, Preschool Attendance

Figure 1b Overall development scores by age and gender (range 0 to 100)



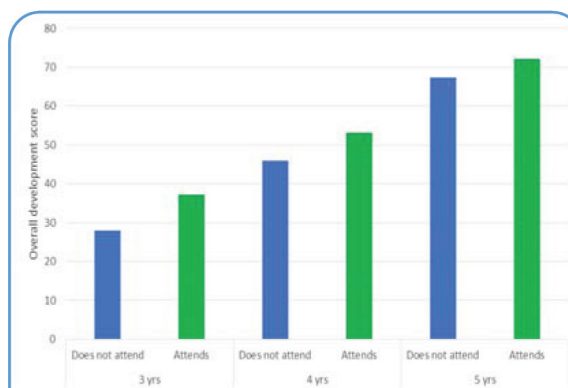
Differences between boys and girls are not significant at any age

Figure 1c Overall development scores by age and urbanicity



Difference is only significant for 4-year-olds

Figure 1d Overall development score by age and preschool attendance



Preschool attendance is associated with a significantly higher overall developmental scores at all ages

Figure 2. Differences in scores for Health, Hygiene and Safety



Figure 3. Differences in scores for Motor Development

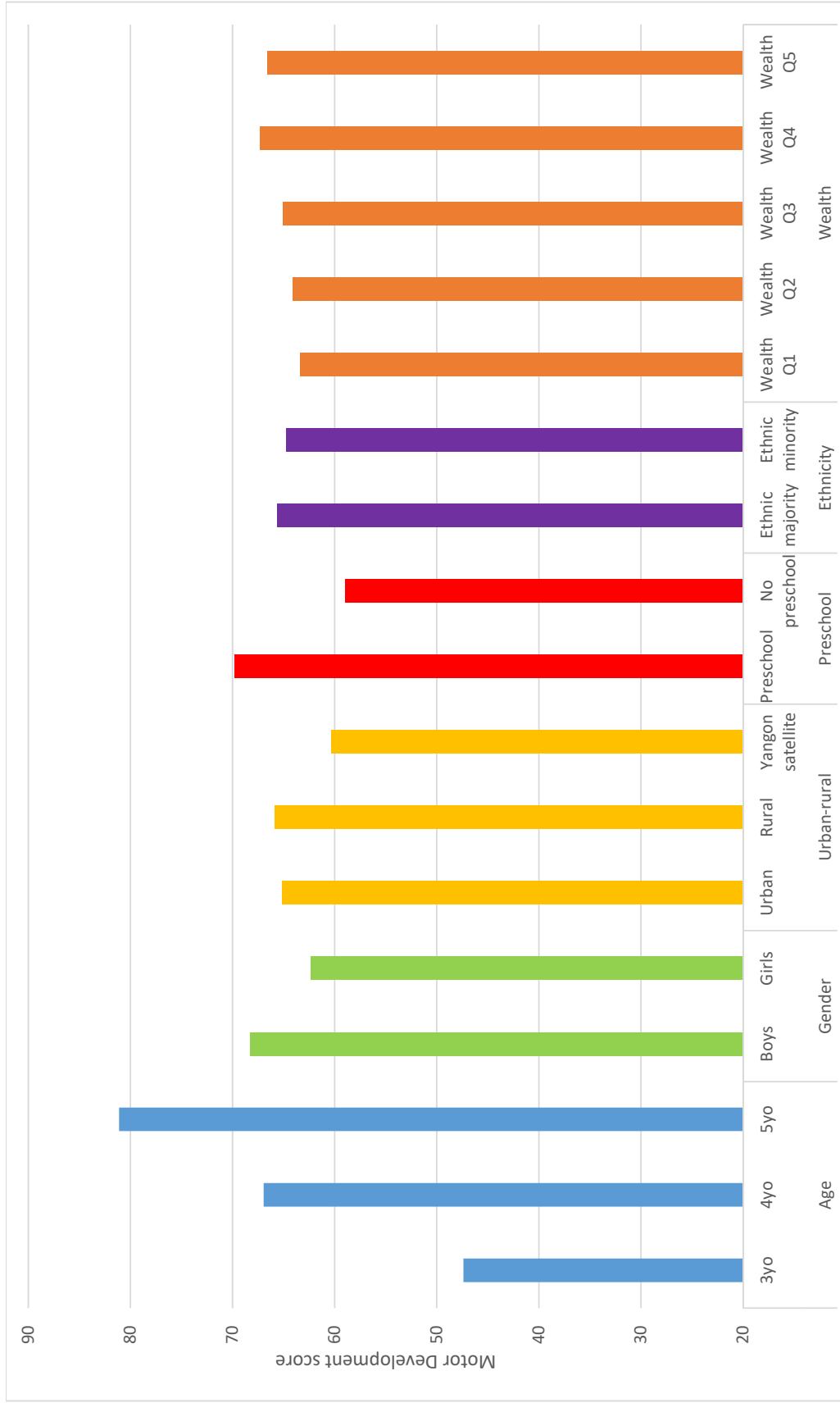
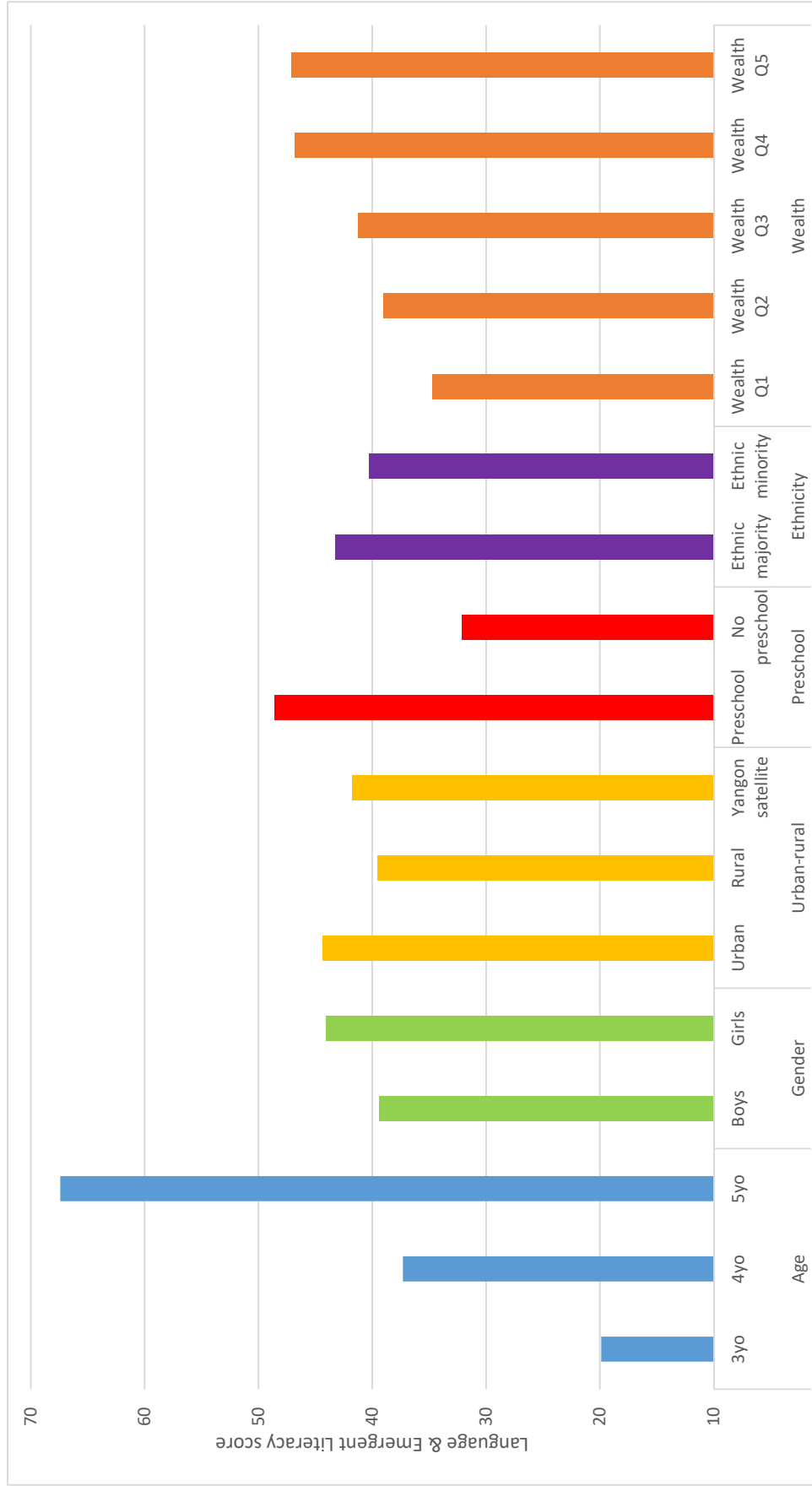


Figure 4. Differences in scores for Language and Emergent Literacy



Impact of preschool attendance: demographic groups

The descriptive statistics show that children attending preschool had higher developmental scores than children not attending preschool. However, this may be for a number of reasons. Children attending preschool are more likely to be from wealthy families, to reside in urban areas, and to belong to the ethnic majority group, for instance. Therefore, to investigate the direct effect of preschool attendance on developmental outcomes, a series of multi-level regression models were used. Each model controls for urban-rural residence, gender, ethnicity, wealth quintile, maternal education, and age.

Figure 5 shows differences in overall development scores for children attending preschool compared to those not attending, disaggregated by different demographic groups. This makes it possible to understand: (a) whether preschool attendance is associated with higher developmental scores even after controlling for other demographic variables; and (b) whether preschool attendance makes more or less of a difference to development scores for different groups.

Preschool attendance is significantly associated with higher overall development scores for all wealth quintiles, majority and minority ethnic groups, boys and girls, and those residing in both urban and rural areas, even after controlling for other variables. It is most strongly associated with increased development scores for children in the lowest wealth quintile, with an increase in development scores of 7.6 compared to those not recently attending. The difference in scores for wealth quintiles 2 and 3 becomes progressively smaller, but preschool attendance becomes progressively more important for quintiles 4 and 5. The results resemble a 'U' shape for the effect of preschool attendance on developmental scores, with children in the poorest and richest wealth quintiles benefitting from preschool the most. A large body of research shows that preschool participation has larger effects for children from disadvantaged backgrounds (e.g. Burger¹⁷, 2010; Engle et al., 2011¹⁸), partly because these children can have less stimulating home environments. High income children tend to have more stimulating home environments and may attend preschools with better quality teaching and resources. In light of the existing literature these findings – that preschool is particularly beneficial for the lowest and highest wealth children – are not surprising.

17 Burger, K. (2010). How does early childhood care and education affect cognitive development? An international review of the effects of early interventions for children from different social backgrounds. *Early Childhood Research Quarterly*, 25(2), 140-165.

18 Engle, P. L., Fernald, L. C., Alderman, H., Behrman, J., O'Gara, C., Yousafzai, A., ... & Iltus, S. (2011). Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *The Lancet*, 378(9799), 1339-1353.

Among children who attend preschool, those from ethnic majority groups had higher development scores than those from ethnic minority groups. The difference between attenders and non-attenders was 7.3 and 5.5 points for the majority and minority groups, respectively. Girls who attended preschool had about 6.4 points higher than girls who did not. On the other hand, boys who attended preschools received a score of 5.3 points more than boys that did not. The advantage of attending preschool is very similar in urban and rural areas.

Figure 5. Differences in overall development scores for children attending preschool compared to those not attending, by different demographic groups

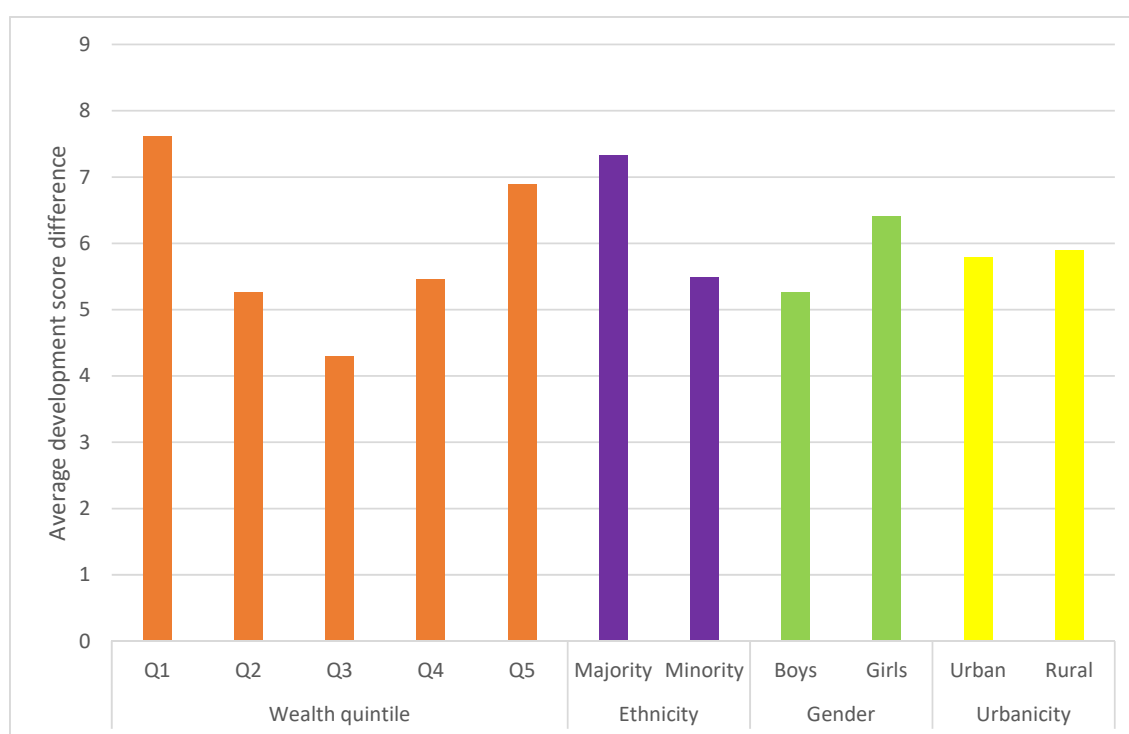
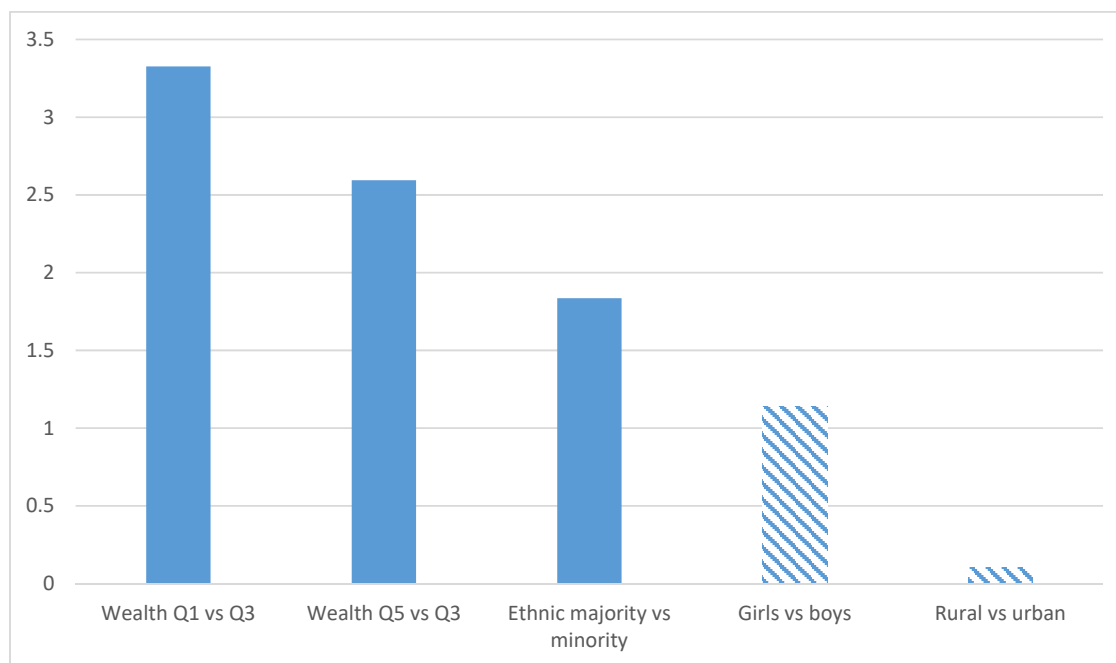


Figure 6 shows the results of tests of statistical significance for these differences between demographic groups. Bars show the difference between each of the groups in the positive effect of attending preschool. Significant results are shown as solid bars, whilst insignificant differences are shown as diagonal striped bars.

The effect of attending preschool for children in wealth quintile 1 is 3.3 points larger than the effect of attending preschool for children in wealth quintile 3, and this difference is statistically significant. Similarly, the effect of attending preschool for children in wealth quintile 5 is significant and is 2.6 points larger than for those in quintile 3. The difference in the effect of preschool between ethnic majority and minority children is also significant, with the association for ethnic majority children being 1.8 points greater. Differences between

boys and girls, and between children residing in urban and rural areas, are not statistically significant.

Figure 6: Tests of statistical significance for differences of preschool impact between demographic groups



Impact of preschool attendance: types of preschool

Multilevel regression models were next used to examine whether the positive associations between recent preschool attendance and developmental scores varied among different types of preschool/ECCD programmes. Figure 7 shows associations between preschool attendance (compared to non-attendance) for the following types of preschool: preschools based in churches or monasteries; community-based centres; standalone preschool centres; preschools in primary schools; private preschools; BEHS or BEMS preschools (held in high schools or middle schools); and any 'other' preschool types. Urban-rural residence, gender, ethnicity, wealth quintile, maternal education, and age were again controlled for. Results show that the association between preschool attendance and overall development scores is largest when the preschool is located in a church or monastery, with a difference of 10.2 points between attenders and non-attenders. By contrast, attendance of preschools located in community-based centres, or in BEHS/BEMS schools, was not associated with any statistically significant increase in overall development scores. Attendance of private preschools and of preschools located in standalone centres, primary schools, or 'other' venues was significantly associated with increased development scores, but with smaller effect sizes than for those based on churches or monasteries.

Figure 7. Associations between preschool attendance and overall development by type of preschool

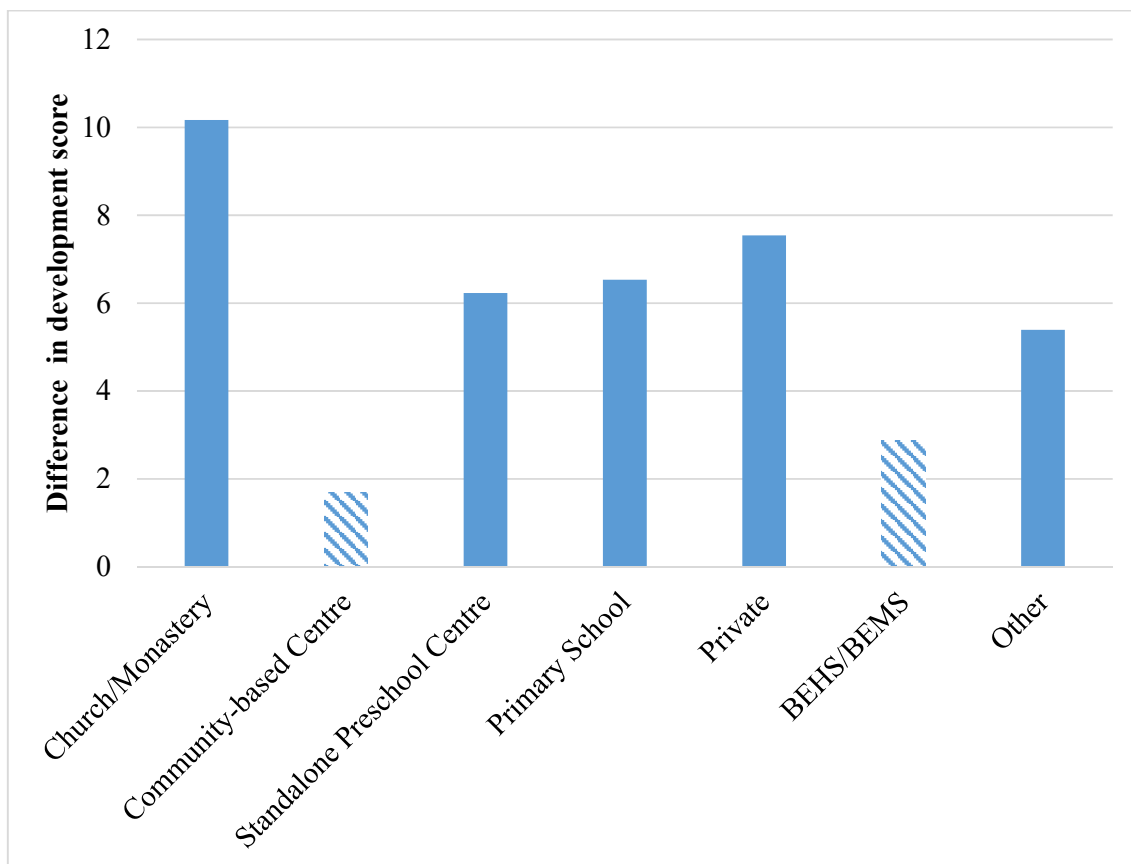
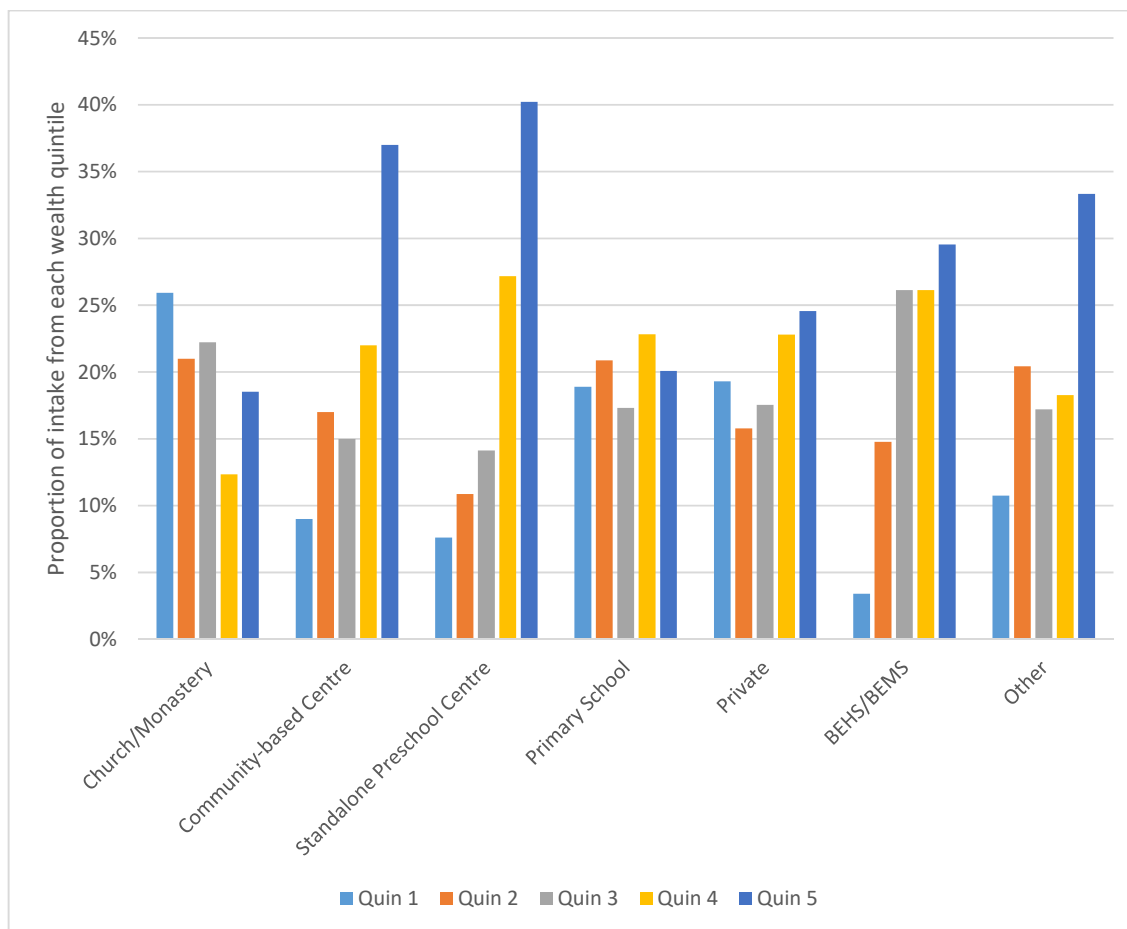


Figure 8 explores these differences by showing the demographic intake of each type of preschool. Although Figure 7 shows results that control for wealth and maternal education, it is informative to understand which types of preschool are most beneficial for which demographic groups. Figure 8 shows that, in addition to having a larger impact on children’s development scores, church or monastery based preschool have a lower-wealth intake than many other preschool types. By contrast, standalone preschool centres and community-based centres take a large proportion of their intake from the richest wealth quintile.

Figure 8. Proportion of preschool intake from each wealth quintile, by preschool type



Medium of instruction: language provision

Table 5 gives descriptive statistics of minority-language children attending minority-language preschools, in terms of the language spoken at home and the first language of instruction in preschool. It shows that most minority-language speakers attending minority-language preschools in the sample tend to be taught in their mother tongue. Kayin speakers are an exception to this as they are likely to have English as a medium of instruction.

Table 5. Number of minority-language speakers attending minority-language preschools

		First language of instruction at preschool						Total
		English	Kachin/Jinghpaw	Kayin and English	Mon	Rakhine	Other	
Language at home	Kayin	21	0	53	0	0	0	74
	Kachin/Jinghpaw	0	60	0	0	0	2	62
	Mon	1	0	0	29	0	0	30
	Rakhine	5	0	0	0	62	1	68
	Other	0	10	0	0	0	7	17
	Total	27	70	53	29	62	10	251

Multi-level regression models were used to analyse the developmental scores of children who did not speak Myanmar as their first language. Figure 9a shows marginal mean development scores for minority-language children attending preschools with a minority language as the main language of provision, compared to minority-language children attending preschools with Myanmar as the main language of provision. Across all domains scores are higher for those attending schools with a minority language as the main language of provision.

Figure 9b shows that, of minority-language children attending a preschool, those in preschools with a minority language as the main language of provision had overall developmental scores 4.7 points higher than those in preschools with Myanmar as the main language of provision. This difference was statistically significant. Differences were largest for the Language and Emergent Literacy domain, with minority-language children attaining scores 8.6 points higher when the main language of provision was not Myanmar. Significant differences were also apparent in the Motor Development, Cultural Knowledge and Participation, and Approaches to Learning domains. Differences were not significant for Cognitive Development, Socio-emotional Development, and Health, Hygiene and Safety.

Figure 9a: Marginal mean development scores of minority-language children attending preschools with a minority language as the main language of provision, compared to those attending preschools with Myanmar as the main language of provision

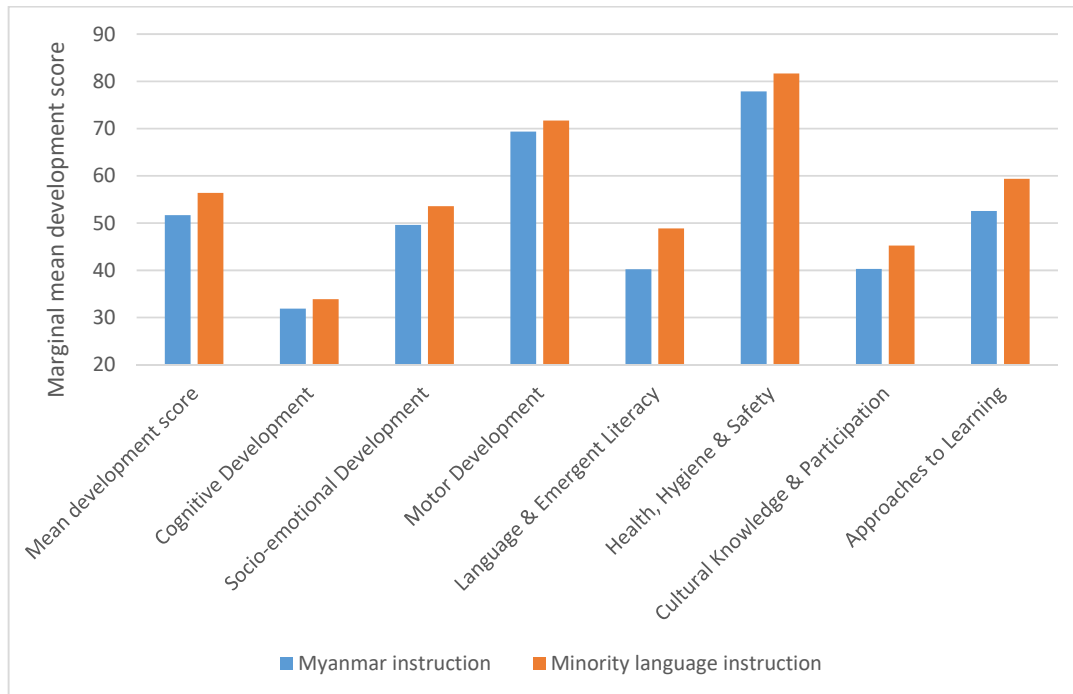
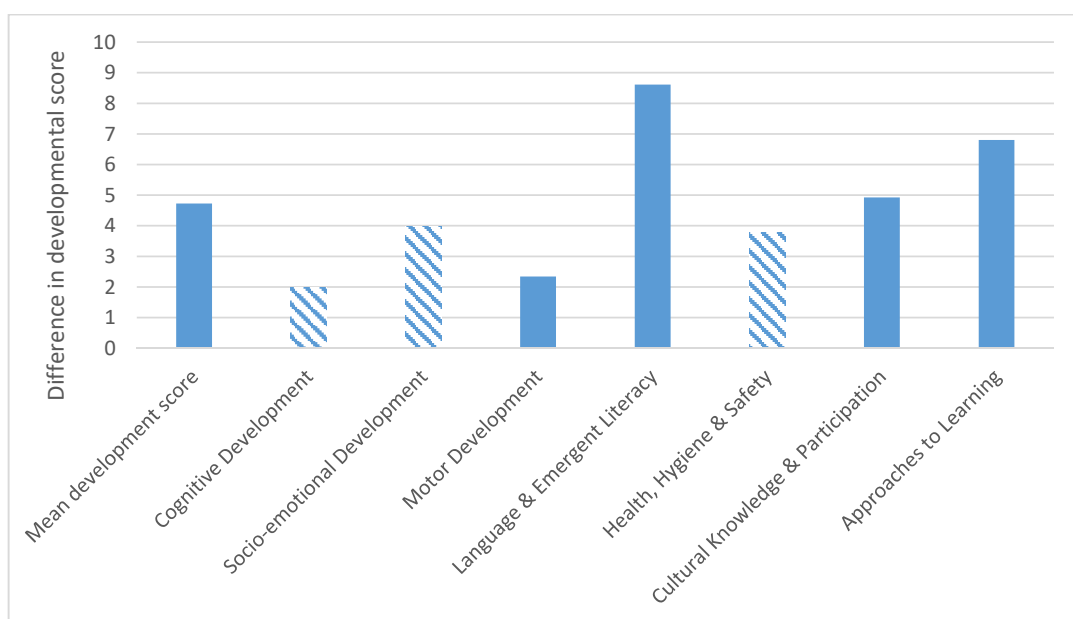


Figure 9b: Developmental scores of minority-language children attending preschools with a minority language as the main language of provision, compared to those attending preschools with Myanmar as the main language of provision



Impact of preschool attendance on different child development domains

Multi-level regression models were next used to analyse how associations between recent preschool attendance and developmental scores differed between domains of development. To ensure comparability in effect sizes between different domains, month-of-age-adjusted z-scores were created for each domain of development. This makes it possible to compare the effect of preschool attendance across domains in standard deviation units. A coefficient size of 0 indicates no difference between those attending preschool and those not; and a score of +1 indicates those attending preschool have developmental scores one standard deviation above those not attending preschool, compared to their same-age peers.

To illustrate differences in raw scores by preschool attendance, Figure 10a shows that children attending preschool on average have higher developmental scores across all domains. Figure 10b uses HLM modelling to show that the association between preschool attendance and developmental scores is largest for Language and Emergent Literacy, with those attending preschool having scores 0.4 standard deviations greater than those not attending. Preschool has the second largest effect for Health, Hygiene and Safety, closely followed by Cognitive Development; and with Cultural Knowledge and Participation and Approaches to Learning having smaller but still significant coefficient sizes. The associations between preschool attendance and development were not significant for Socio-emotional Development or Motor Development.



Figure 10a. Differences in raw development scores by preschool attendance

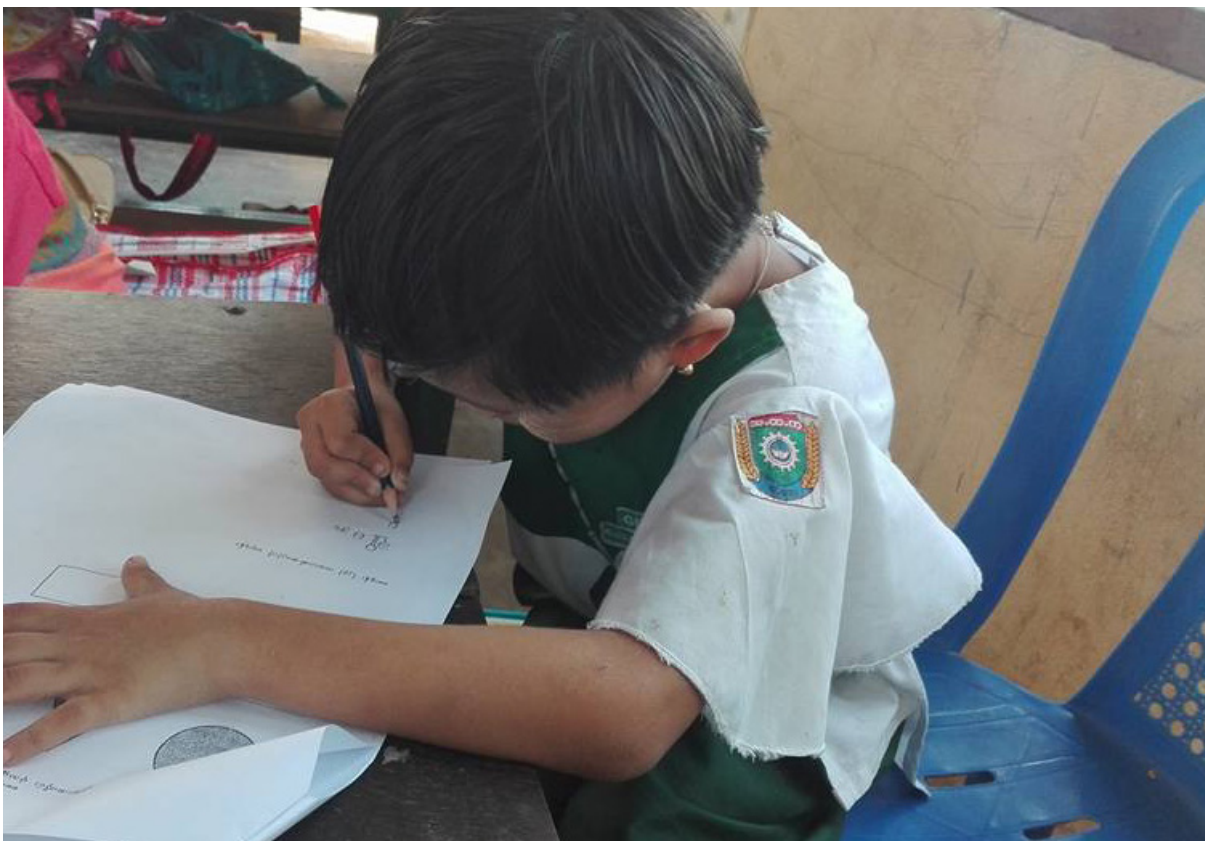
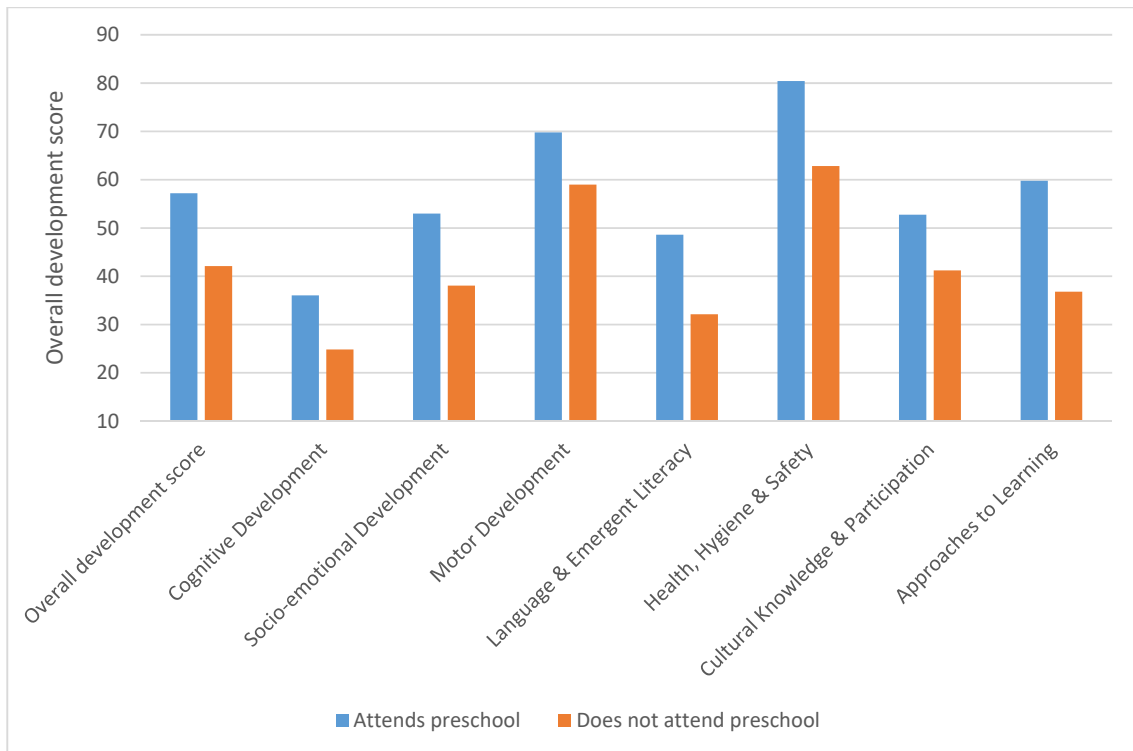
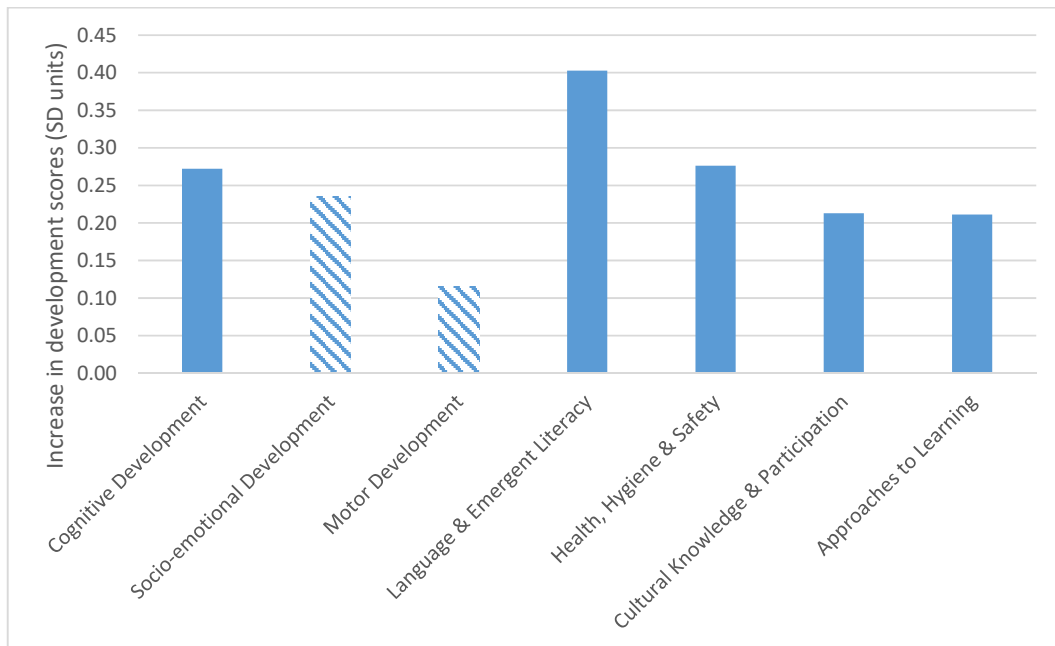


Figure 10b: Differences in developmental scores between children attending preschool and those not attending across developmental domains, in standard deviation units



RECOMMENDATIONS



Based on the analysis and findings of the EAP-ECDS SF administration in Myanmar, the following recommendations are made for consideration.

1. Address gender, regional, ethnic and socioeconomic differences in early childhood development through the provision of ECCD programmes. On the EAP-ECDS SF, girls received higher scores than boys; children from the ethnic majority group did better than those from ethnic minority families; and children from more economically advantaged families did better than their less advantaged counterparts. Efforts should be made to tackle these group differences so that “disadvantaged children are not left behind at the starting gate of school”. (See Figures 1a to 4)
2. Continue and accelerate the efforts to expand access to ECCD programmes for ALL children. This study found that all groups of children have shown benefits from attendance in ECCD programmes. However, the most economically disadvantaged children (lowest wealth quintile) and the most advantaged children (highest wealth quintile), respectively showed larger benefits from attending preschool than other children. These findings have implications for the quality of ECCD programmes as it is likely that more advantaged populations attend better quality programmes. (See Figures 1a to 4)
3. Enhance the quality of the programmes for marginalised and disadvantaged groups, including ethnic minorities and the urban poor (e.g. Yangon satellite). Currently urban and ethnic majority children seem to benefit more from attending preschool programmes than other children. This may be because children from urban, ethnic majority and more wealthy families attend higher quality programmes. (See Figures 5 and 6).
4. Encourage the sharing of best pedagogical practices from church or monastery-based preschools. Preschools based in Churches or Monasteries have the best value-added for child development. We did not observe preschools and further research is needed to understand what they are doing and how best to replicate this in other preschools. Further, their demographic intake incorporates a relatively large number of children from low wealth backgrounds, so they provide a model for inclusive education for all. (See Figures 7 and 8).

5. Provide ECCD programmes in children's mother tongue and integrate appropriate strategies for official language (Myanmar) acquisition and transition to primary school. While all children benefit from quality ECCD programmes, this study shows that ethnic majority children benefit more from the preschool experience than ethnic minority children. Furthermore, children with a minority language as their first language have significantly higher developmental scores when attending preschools with a minority language as the main language of provision, compared to those attending preschools with Myanmar as the main language. This disparity in development outcomes is most notable in the domains of Language and Emergent Literacy, Cultural Knowledge and Participation and Approach to Learning. In this sense, it is promising that the 2014 Myanmar Policy for ECCD explicitly includes the use of mother tongue in the Policy Strategy 5: Transition, kindergarten and early primary grades (5 to 8 years) and pledges that all early childhood intervention services from antenatal care through preschool will be provided in the mother tongue of the parents and will be culturally appropriate (p. 101 and p. 109). (See Figures 9a and 9b).
6. Support children's development and learning across different domains of development as they are interconnected. This study shows that preschool attendance in Myanmar is significantly associated with all domains of development except Motor Development or Socio-emotional Development. Preschool attendance has the highest impact on children's language and literacy development of all domains. Healthy growth and physical development is essential for children to be ready for school, while socio-emotional competence is essential for cooperating with their peers and teachers, engaging in and persevering in educational activities, and realising the child's well-being. (See Figure 10b).
7. Use these findings as a baseline and monitor the country's progress in increasing access to ECCD programmes and enhancing child outcomes. The EAP-ECDS represents the first assessment of child outcomes in Myanmar, and this instrument can be used in future research and evaluation, together with other assessments of the quantity and quality of ECCD services to inform policy directions. The Myanmar ECCD Policy foresees the establishment of the ECCD management information system, as 'a nationwide database for children and ECCD services in Myanmar and will guide the internal and external monitoring and evaluation of all major ECCD services'. This is a daunting but essential task for monitoring Myanmar's progress toward its

national ECCD policy goals as well as SDG Target 4.2 on equitable access to quality early childhood development, care and education.

8. Ensure an integrated and coordinated approach in ECCD policy and programmes that combines education, health, nutrition and protection as well as support for the family and the community. This recommendation is made based on the international literature as there is strong evidence that integrated ECCD interventions that combine health, nutrition and stimulation yields greater benefits for children's health and development than health and nutrition alone. This study did not consider the quality of programmes but we know that programme quality matters. Hence we recommend that both preschool expansion and quality are given policy priority.



ANNEXES



Annex 1. EAP-ECDS Scoring Form (Short form - English version)

East Asia-Pacific Early Child Development Scales Scoring Form (Short Form)

	Month	Day	Year
Test Date:	_____	_____	_____
Birth Date:	_____	_____	_____
Age*	_____	_____	_____
* Do not round up			

Section A: Identifying Information

Record number: _____

Country: _____ Province: _____

District: _____ Village/City: _____

Assessor's name: _____ Location of test: Centre School Home

Child's name: _____ Child ID number: _____

Gender: M F

Child's first language: _____

	Item Number	Sub-Total Score of the Subscale
1 Cognitive Development	1 - 8	
Sub-Total (Cog.Dev.)		
2. Socio-Emotional Development	9 - 14	
Sub-Total (Soc.-Em.Dev.)		
3. Motor Development	15 - 18	
Sub-Total (Mot.Dev.)		
4. Language and Emergent Literacy	19 - 24	
Sub-Total (Lan.& Em. Lit.)		
5. Health, Hygiene, and Safety	25 - 28	
Sub-Total (Health, Hyg. & Saf.)		
6. Cultural Knowledge and Participation	29 - 32	
Sub-Total (Cult. Knowl. & Parti.)		
7. Approaches to Learning	33	
Sub-Total (Appr. To Lrng)		
Total		
Physical development indicators		
Height	_____ cm	
Weight	_____ pounds	

Annex 2. EAP-ECDS Parent questionnaire (English version)

Section A: Identifying Information
Items 1 to 13

Section B: About the Family
Items 14 to 40

Section C: About the Child's Early Learning and Development
Items 41 to 55

Section D: About the Child's Health and Habits
Items 56 to 69



Annex 3. Additional data on height, weight, and home learning environment

Age, gender and urbanicity differences in height and weight

Figure A1. Age, gender, and urban-rural differences in height

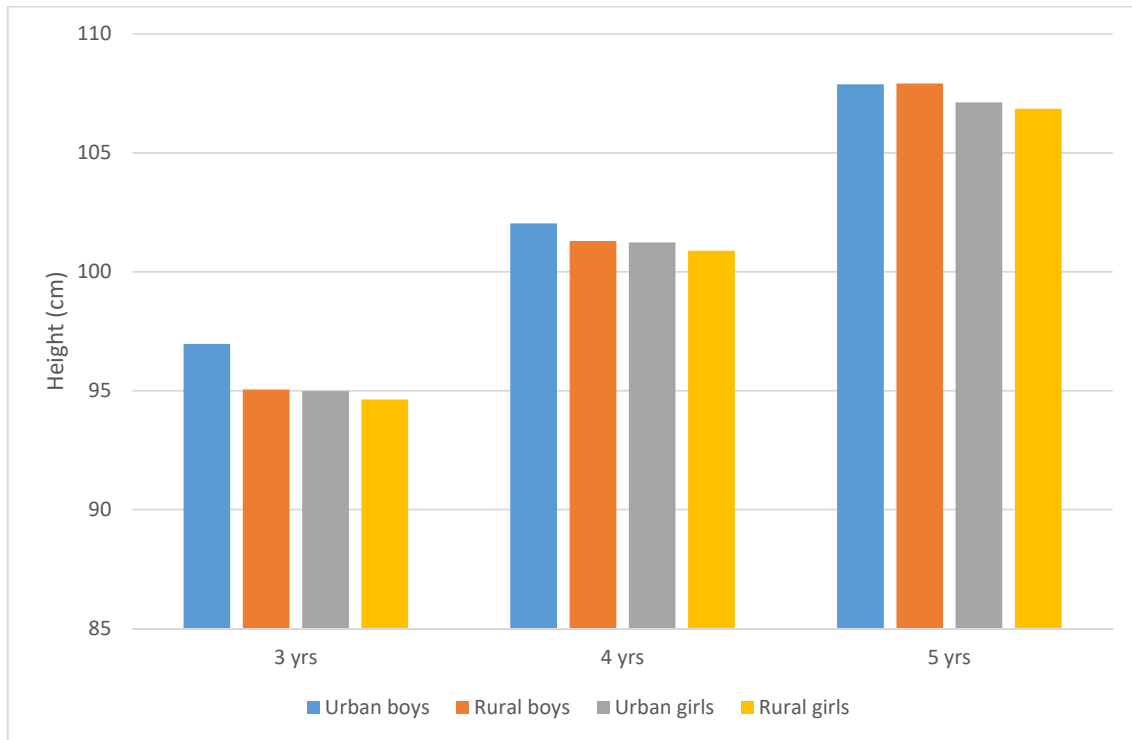
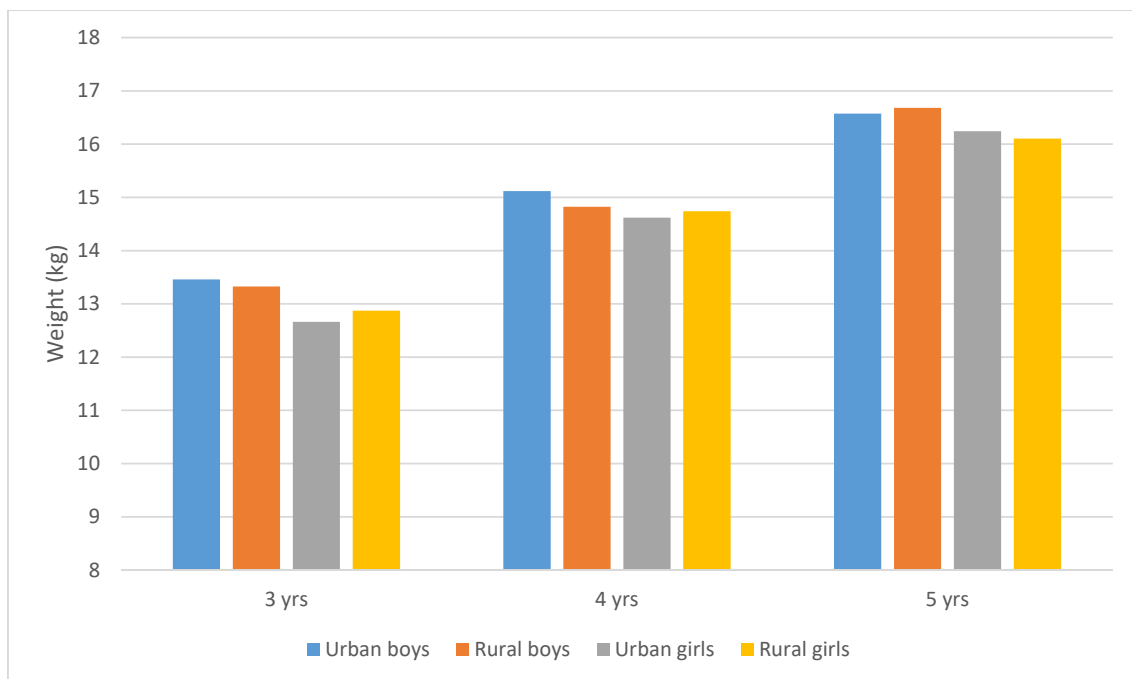


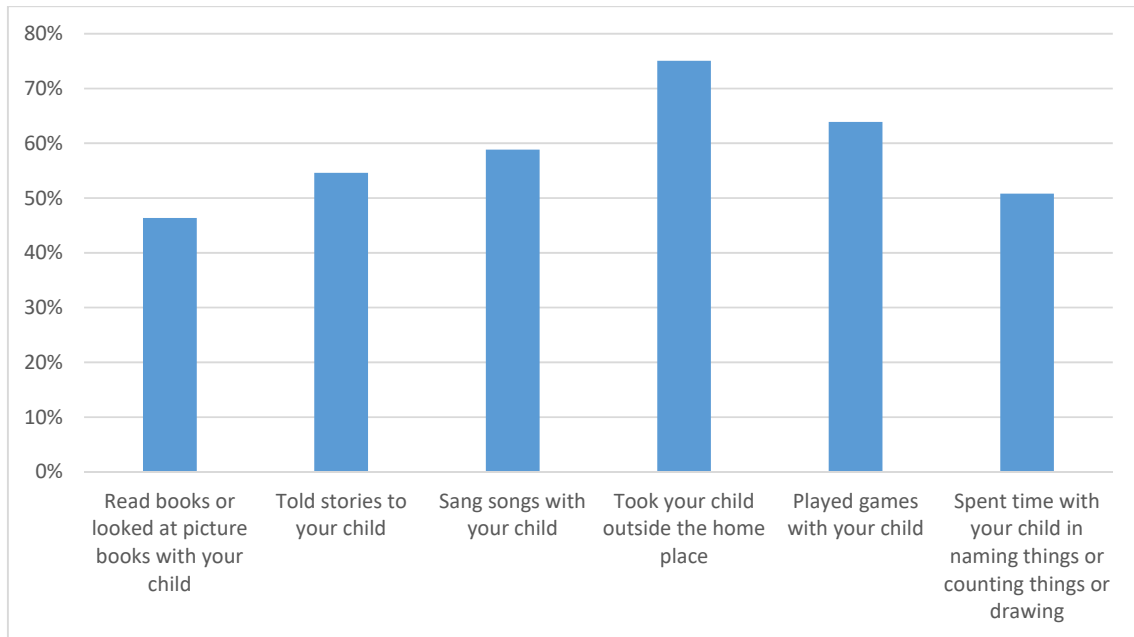
Figure A2. Age, gender, and urban-rural differences in weight



Home learning environment

- A large majority (89%) of caregivers reported that they or another family member engaged in some early learning-related activities at home with their child.
- The most common learning-related activity was to take the child outside their home place (75%, see Figure A3).
- Mothers were most likely to take their child outside the home place (66%) and to sing songs with their child (65%). Fathers were most likely to play games with their child (17%); whilst other family members were most likely to read books or play games (both 33%).
- Mothers with higher levels of education (high school or above) were more likely to spend time naming things, counting things or drawing (66%) than mothers with a lower level of education (55%).
- Fathers with higher levels of education were more likely to read books with their child (13%) than those with lower levels of education (9%).

Figure A3. Adult-child activities



In the past 3 days, did you or any family member(s) over 15 years of age engage in these activities with your child?

