# LETTING CHILDREN FLOURISH FROM AN EARLY AGE: EARLY CHILDHOOD CARE AND DEVELOPMENT IN NEPAL

## NEPAL MULTIPLE INDICATOR CLUSTER SURVEY (MICS) 2014 FURTHER ANALYSIS REPORT

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# EXECUTIVE SUMMARY

This further analysis report on early childhood care and development uses data from the fifth round of the Nepal Multiple Indicator Cluster Survey (the 2014 NMICS) to shed light on a number of key domains for children aged 0–59 months in Nepal. The main purpose is to highlight descriptive statistics and trends pertaining to early childhood care, preparation for school and development including the proportion of children i) with access to children's books, ii) who have adult members taking care of them at all times, iii) who attend early childhood development (ECD) programmes, iv) who are engaged in four or more 'developmental' activities by adult household members, v) who are overall healthy, as well as iv) whether or not they are on track developmentally in numeracy and literacy, and in the physical, socio-emotional and learning domains. Within these areas, sub-group analysis disaggregated by geographical area and socioeconomic characteristics helped identify the most marginalized children who had least benefitted from holistic early childhood development.

On early childhood care and preparation, this analysis found that only 16.8 per cent of the surveyed children aged 0–59 months had access to any sort of children's books at home, while only 36.2 per cent were healthy and not stunted, wasted or underweight, nor had suffered from fever or diarrhoea in the two weeks preceding the survey. Wealth played a significant but non-linear role in determining whether 0–59 month old children had overall received good care and preparation. Significantly better outcomes with regards to most of the early childhood care indicators were seen in children in the richest and second richest quintiles compared to those in the lowest three wealth quintiles. Similarly, children in the traditionally marginalized Madhesi, Madhesi Dalit, and Muslim households fared relatively worse on most of the early childhood care and preparation indicators.

On early childhood development, this report found that around 64.4 per cent of the children were developmentally on track on three of the four ECD domains mentioned above. However, only 28.8 per cent of the children were developmentally on track for the literacy and numeracy domain. Wealth quintile again showed a non-linear role in determining whether children were on track developmentally on several of the ECD domains. The jump in differences in ECD outcomes by caste and ethnicity were more linear, with children from Newar and hill Brahmin households faring better than most children across other social groups.

Logistic regressions were used to test associations between early childhood care variables and early childhood development outcomes, controlling for potential confounders including household and individual characteristics. While confirming the non-linear association between wealth and ECD outcomes, as well as traditionally underprivileged communities faring worse, it also affirmed that early childhood care and preparation strongly correlated with whether children were on track developmentally for several important ECD domains.

Despite incorporating ECD as a component of its policies and programmes, the Government of Nepal and other stakeholders have mainly focused on the education component of ECD instead of holistic early childhood development. And while the education component is an integral part of any ECD programme, this further analysis sheds light on a number of other ECD domains and information gaps with regards to pinpointing ECD performance in relation to various socioeconomic characteristics. While explicit policy recommendations are beyond the scope of this report, UNICEF aims to influence policymakers, practitioners and Nepal's legislative bodies by disseminating the important findings in this report.

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# 1   INTRODUCTION

The early years of life are crucial for establishing a sound foundation for the cognitive, social, emotional and physical development for the rest of children's lives.[1] The international development community is increasingly focussing on designing and implementing programmes and policies for early childhood care and development. However, evidence based on the short and long-term impacts of these programmes is rare, especially in low and middle-income countries where data gaps persist. Realizing the importance of early childhood development (ECD), in 2010, UNICEF held its first ever global consultation on ECD with The World Bank, Save the Children, the Earth Institute at Columbia University and other partners to define and advance the research agenda on ECD-related topics.[2]

The Multiple Indicator Cluster Surveys (MICS) have been pioneering modules on ECD and are a primary source of information on the cognitive and socio-emotional development of young children, along with information on their overall health. A preliminary comparative assessment from the fourth round of the MICS results of 30 countries in 2010 found that Nepal (Mid-Western and Far Western Development Regions only[3]) ranked twenty-second on the ECD index. This index tracks 10 indicators related to literacy, numeracy, physical development, socio-emotional development, learning and other subjects.[4] Nepal's performance was the worst in South Asia among the three national sub-regions assessed — the other two being regions of Bhutan and Pakistan. This and other evidence points to the need for action on ECD in Nepal.

This further analysis report uses data from the fifth round of the Nepal MICS (NMICS 2014)[5] to shed light on the domains of early childhood care, preparation for primary schooling and childhood development in Nepal. On early childhood care and preparation, this report presents findings on whether the sample children aged 0–59 months had access to children's books, had at least one adult member of their households to look after them at all times, were attending early childhood development programmes, were engaged in at least four or more 'developmental' activities by adults in their households, and were overall healthy.[6] On early childhood development, this analysis assessed whether children aged 36–59 months were on track in their early childhood development in the domains of numeracy and literacy, physical development, socio-emotional development, learning, and the overall early childhood development index. The equity tree of the early child development index shows the situation of children aged 36–59 months as per the findings of the 2014 NMICS (Figure 1).

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[1] United Nations Children's Fund, 'ECD in Post-2015 Development Agenda', 2013
<www.unicef.org/earlychildhood/index_68189.html>, accessed March 2018.

[2] United Nations Children's Fund, *Report on Global Consultation: Closing the knowledge gap on early childhood development in developing countries*, UNICEF, New York, 2010,
<www.unicef.org/earlychildhood/files/Report_on_ECD_Research_1st_Global_Consultation.pdf>, accessed 27 December 2016.

[3] Note that until 2017 Nepal was divided into five development regions – Far Western, Mid-Western, Western, Central and Eastern Development regions (see Appendix 1). These regions have been superseded by the division of the country into seven provinces under the new federal system of governance. The country's three ecozones (mountains, hills and Tarai) are also shown in Appendix 1.

[4] United Nations Children's Fund, 'ECD Indicators: Multi Indicator Cluster Surveys Fourth Round (MICS4)', PowerPoint presentation, Global Data Analysis, 2013, <www.unicef.org/earlychildhood/files/Website_data_presentation_Global_-_11_July_2013.pdf>, accessed March 2018.

[5] Central Bureau of Statistics, *Nepal Multiple Indicator Cluster Survey 2014: Key findings report*, CBS and UNICEF, Kathmandu, Nepal, 2014, <http://unicef.org.np/uploads/files/44234273128039655-nmics-5-key-findings.pdf>, accessed 2 March 2018.

[6] Questions on ECD attendance and adult engagement were only asked about children aged 36–59 months.

**Figure 1: The equity tree: Early child development index scores (children aged 36–59 months, Nepal) (NMICS 2014)**
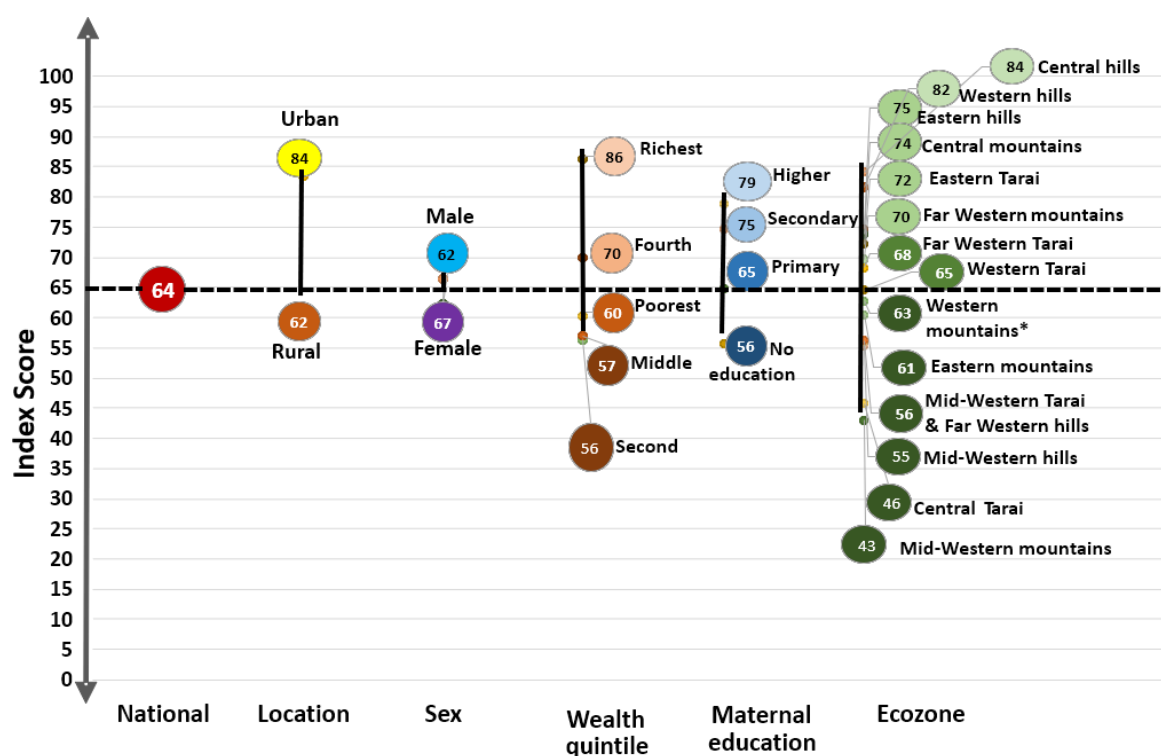


The main purpose of this further analysis is to identify the most marginalized and vulnerable groups of children in Nepal based on sub-group analysis by individual and household characteristics including sex, geographic region, wealth quintile, and caste and ethnicity. This analysis also tested for associations between different indicators of early childhood preparation and care and early childhood development, controlling for individual and household characteristics using a logistic regression framework.

## 1.1    Background

The Sustainable Development Goals have targets on components of early childhood care and development. SDG target 4.2 is: "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." However, the early childhood care and preparation mandate goes beyond narrowly defining the development of children in terms of education for a more holistic view of their cognitive, social and emotional development. UNICEF's Executive Director pointed this out when he said "We now know that it takes more than education for a child's brain to develop – a lot more."[7] With this in mind, SDG target 4.2 includes two indicators: 4.2.1 on ECD overall and 4.2.2 on access to pre-primary education.

According to the 2014 NMICS, overall 64.4 per cent of children aged 36–59 months in Nepal were developmentally on track. Out of the four domains (and 10 indicators) included in the ECD index, only 28.8 per cent of children were developmentally on track for the literacy and numeracy domain and 68.6 per cent on track on the socio-emotional domain, while a significantly better 96.4 per cent were

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[7] Britto Pia, *Why Early Childhood Development is the Foundation for Sustainable Development,* UNICEF Connect, 2015, <https://blogs.unicef.org/blog/why-early-childhood-development-is-the-foundation-for-sustainable-development>, accessed March 2018.

on track on the physical development domain. But only 16.8 per cent of children aged 0–59 months had access to any sort of children's books at home, while only 36.2 per cent of children aged 0–59 months were classified as healthy and were not suffering from stunting or wasting, were not underweight and had not suffered from fever or diarrhoea in the two weeks preceding the survey.

The 2014 MICS in Nepal included questions on attendance at formal ECD programmes, and early childhood care and preparation. Around 51 per cent of the children aged 36–59 months were formally attending ECD programmes, with considerable variation by age, geography and wealth quintile. Among the childhood care and preparation indicators, more than one-fifth of the under five-year-olds had been left with inadequate care in the previous week, only 5 per cent had three or more children's books in their households, and two in three had been engaged by adults in their households in four or more 'developmental' activities in the three days preceding the survey. Finally, the survey found that 3 in 10 of the surveyed under five-year-olds were not living with their biological fathers and 23 per cent of the biological fathers of the under fives were working abroad, including in India.

These facts and figures on the situation of early childhood care and development in Nepal show disparities in the levels of cognitive, physical and socio-emotional development of the surveyed children. This further analysis report further disaggregates these findings to identify the most vulnerable and marginalized children based on sub-group analysis by geography, wealth, caste and ethnicity and other socioeconomic factors. Additionally, this analysis studies the links between early childhood care and early childhood development with a focus on parental absence as a potentially important childhood care variable.

## 1.2    National policies and programmes on early childhood care and development

A number of key players have designed and implemented early childhood care and development programmes in Nepal. The Ministry of Education, the Ministry of Health, the Ministry of Federal Affairs and Local Development, and the Ministry of Women, Children and Social Welfare have all improved aspects of early childhood care and development.[8] Other stakeholders include UNICEF, non-governmental organizations, international non-governmental organizations and the private sectors.

In education, the Basic and Primary Education Project-II (BPEP-II, 1999–2002) had early childhood care and education built into it for the holistic development of children. In 2004, an early childhood development strategy paper was developed by the Ministry of Education with elaborate plans and strategies to expand ECD centres (pre-primary education).[9] It emphasised the importance of coordination among ECD stakeholders, and called for synergies in the planning, management and operational aspects of the national ECD programme. In 2005, a National Early Childhood Development Council was formed chaired by the Ministry of Education and Sports with membership from the ministries of health; local development; women, children and social welfare, United Nations agencies and NGOs. This council "provides a broad base to harmonize ECD activities and to ensure coordination among national and local level programmes."[10]

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[8] Shrestha, K., H.R. Bajracharya, P.N. Aryal, R. Thapa and U. Bajracharya, *Early Childhood Policy Review in Nepal,* Kathmandu: CERID, 2008. <http://unesdoc.unesco.org/images/0016/001611/161196e.pdf>, accessed March 2018.

[9] Department of Education, Nepal, *Strategy Paper for Early Childhood Development in Nepal*, Kathmandu, 2004.

[10] United Nations Educational, Scientific and Cultural Organization, *Nepal: Early Childhood Care and Education Programmes,* UNESCO International Bureau of Education (IBE), Geneva, 2006
<http://unesdoc.unesco.org/images/0014/001472/147200e.pdf >, accessed March 2018.

The government and UNICEF have played key roles in defining the agenda on specific programmes and policies for early childhood development. However, in Nepal most ECD policies and programmes have been limited to the education sector. A 2011 joint evaluation report on the ECD sector by UNICEF and government agency partners found that, "lack of inter-sectoral policy implementation and functional collaboration mechanisms at the national level limit Nepal's ability to implement policies in a coordinated, holistic manner."[11] The 2016 eighth amendment of the 1971 Education Act officially recognized one year of pre-primary education as a part of basic education. In 2016 the Department of Education reported that Nepal had 30,516 community and 5,543 institutional ECD centres.[12]

Another national level project that covered themes relevant to this report was the Education for All project, which was implemented by the government and The World Bank from 2004 to 2010 in Nepal. However, the final ECD outcomes for children were only moderately satisfactory with the final report deeming that the quality of ECD was low.[13]

This further analysis is especially relevant in light of national ECD policies and programmes because the 2014 NMICS for the first time included questions to assess holistic early childhood development that goes beyond just ECD programmes or educational outcomes. By using the responses to the ECD questions, the analysis presented here attempts to identify the most vulnerable children by presenting disaggregated analysis by geography, sex, wealth quintile and caste and ethnicity.

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[11] United Nations Children's Fund, *Nepal: Evaluation of UNICEF's Early Childhood Development Programme with Focus on Government of Netherlands Funding (2008-2010): Nepal country case study report,* UNICEF, New York, 2011, <www.unicef.org/evaldatabase/index_60110.html>, accessed March 2018.

[12] Department of Education, 2016 Flash Report, Sano Thimi, Bhaktapur.

[13] The World Bank, *Project Performance Assessment Report: Nepal, Education for All, 2015,* <http://ieg.worldbankgroup.org/sites/default/files/Data/reports/PPAR.Nepal_Education.pdf>, accessed March 2018.

## 2  DATA AND METHODS

### 2.1  Data

The 2014 NMICS covered a total of 12,405 households and provides a comprehensive picture of women and children across all regions in Nepal. Of particular interest to the current report are the sections of the NMICS on early childhood care, preparation, and development along with individual and household characteristics including the sex, age, caste and ethnicity, wealth quintile and rural/urban location of the households as well as the sections on family composition.

The sample of interest here is the 5,663 children under five in the NMICS sample. The responses on the indicators related to access to children's books, children being left alone and overall child health are available for all 5,663 children aged 0–59 months in the NMICS sample, whereas the responses on the indicators related to attendance at ECD programmes, adult engagement with children in different activities and developmental status cover the subset of 2,575 children who were 36–59 months old.

### 2.2  Methods

Along with compiling a basic profile of children aged 0–59 months in the NMICS 2014 sample, including demographic indicators, nutritional outcomes and attendance at ECD programmes, two key domains and sub-domains were selected for further analysis in this report:

- Early childhood care and preparation, which included:
  - the presence of children's books in the households
  - the presence of adult members to take care of the children
  - whether the children attended an ECD programme
  - whether the children were engaged in four or more 'developmental' activities by adult household members
  - whether the children were overall healthy.
- Early childhood development, which included whether children were on track on:
  - literacy and numeracy outcomes
  - physical development outcomes
  - socio-emotional outcomes
  - learning outcomes
  - at least three of the four aforementioned outcomes.

The two domains were explored in further detail by disaggregating relevant indicators and analysing differences in the mean values by sex, urban/rural residence, wealth quintile and caste and ethnicity. Confidence intervals were used to assess the significance of differences. Finally, associations between the two domains were explored using a logistic regression framework, controlling for potential confounders including household and individual characteristics.

The statistical software Stata (version 14), was used for the analysis. Elements of the sample design were taken into account by using Stata's 'svyset' command (including information on sample weights, clusters, and strata). Most graphs were made in Tableau and the maps were made using R software.

### 2.3  Definition of indicators

1. Early childhood care and preparation – The following five indicators were explored related to early childhood care and preparation:

1. *The presence of children's books* was classified as 1 if children aged 0–59 months had access to at least one children's book in their household; and 0 otherwise.
2. *Child not left alone* was classified as 1 if children aged 0–59 months had been left alone or in the care of another child less than 10 years old for at least one hour in the three days preceding the survey; and 0 otherwise.
3. *Child attended ECD programmes* was classified as 1 if children aged 36–59 months were attending any organized learning or early childhood education programme in a private or government facility including a kindergarten or community child care; and 0 otherwise.
4. *Child engaged in four or more activities* was classified as 1 if, in the three days preceding the survey, any adult household member had engaged the child aged 36–59 months by doing at least four of the following six activities with them – reading books; looking at pictures from books; telling stories; singing songs; taking the child outside the home, yard, compound or enclosure; playing with the child and naming, counting or drawing things; and 0 otherwise.
5. *Child overall healthy* was classified as 1 if children aged 0–59 months were not stunted, wasted or underweight and had not suffered from fever or diarrhoea in the two weeks preceding the survey; and 0 otherwise.

2. Early childhood development – The following five indicators were explored related to early childhood development:

1. *On track for literacy and numeracy* was classified as 1 if children aged 36–59 months could do at least two of the following tasks: identify or name at least 10 letters of the alphabet; read at least four simple, popular words; and know the name and recognize the symbols of all numbers from 1 to 10; 0 otherwise.
2. *On track for physical development* was classified as 1 if children aged 36–59 months could pick up a small object such as a stick or a rock from the ground with two of their fingers, and/or the mother or caretaker did not indicate that the child was sometimes too sick to play; and 0 otherwise.
3. *On track for socio-emotional development* was classified as 1 for children aged 36–59 months for whom any of the following two were true: the child got along well with other children; the child did not kick, bite, or hit other children and the child did not get distracted easily; and 0 otherwise.
4. *On track for learning* was classified as 1 if children aged 36–59 months could follow simple directions on how to do something correctly and/or when given something to do were able to do it independently; and 0 otherwise.
5. *The overall ECD index* was classified as 1 for children aged 36–59 months who were on track on at least three of the above four indicators; and 0 otherwise.

## 2.4    Data limitations

The NMICS is a comprehensive tool to assess the well-being of women and children globally. However, the questionnaire has its limitations for the purposes of this report:

- The analysis was constrained to include children aged 0–59 months, and for a number of indicators only for children aged 36–59 months. As such, the prevalence of stunting or wasting among children up to the age of eight could not be calculated.
- The NMICS provides cross-sectional data and therefore the analysis in this report should be taken as descriptive rather than causal.

- Certain useful information is not available from the NMICS dataset. For example, the survey had no specific questions on the quality of ECD programmes attended by the children, which may cause variation in some of the ECD-related indicators.

Despite these limitations, the following analysis makes the best use of the available data to shed light on early childhood care, preparation, and development in Nepal.

## 3.1   Basic profile of children aged 0–59 months in Nepal

A total of 5,663 or roughly 10.1 per cent of the 56,539 members covered in the NMICS 2014 sample were under the age of five. This is roughly equivalent to the proportion reported in the 2011 National Population and Housing Census where 9.69 per cent of the population were under five.[14] A total of 4,346 or 35 per cent of the 12,405 households in the NMICS sample had at least one member below the age of five out of which 48 per cent were girls.

### 3.1.1   Demographics

The average household size with children aged 0–59 months was 6.5.[15] The average household size of households without any children aged 0–59 months was smaller at 5.7. This difference is statistically significant at the 99 per cent confidence level. Figure 2 shows the distribution of the size of the households with children aged 0–59 months. Close to 62 per cent of the sampled children aged 0–59 months lived in a household with four to seven members, which was not statistically different from households without any children aged 0–59 months. Only 13 per cent of the households with children aged 0–59 months were in urban areas compared to the national average of 18 per cent of all sampled households. This difference is statistically significant.

**Figure 2: Distribution of the size of households with children aged 0–59 months in the 2014 NMICS sample**
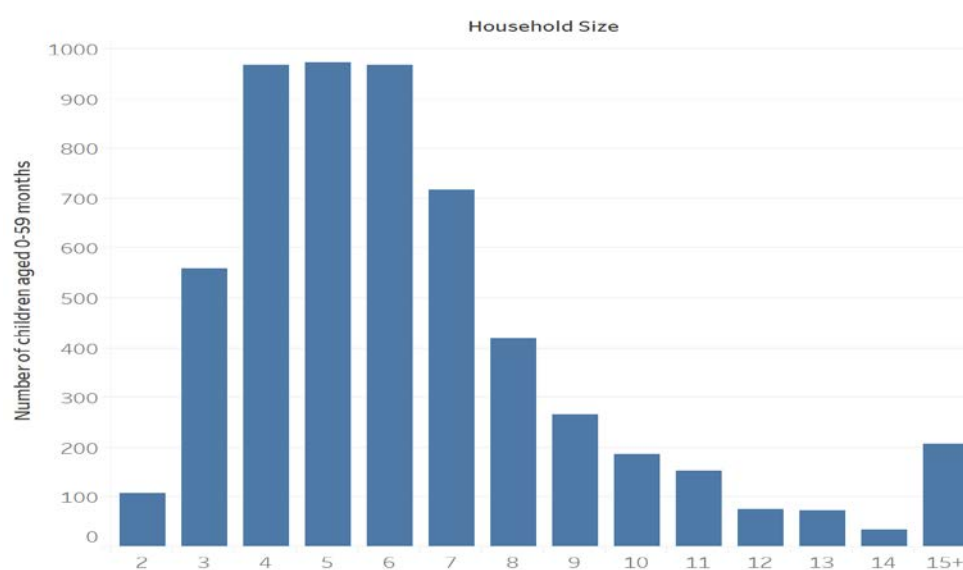


*Close to 62 per cent of children sampled in the NMICS aged 0–59 months lived in households with four to seven members.*

Table 1 summarizes the religions, languages, and caste and ethnic identity of households with children under-five in the 2014 NMICS sample. The majority of the children came from Nepali speaking Hindu households. Maithali, Bhojpuri, and Tharu were other prevalent languages. More than 60 per cent of the households were either hill Janajati, hill Chhetri, hill Brahmin or Madhesi (non-Brahmin/Chhetri). These figures are roughly in line with the ethnic and caste distribution reported in the 2011 census.

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[14] Central Bureau of Statistics, *National Population and Housing Census (National Report),* 2011, <http://cbs.gov.np/image/data/Population/National%20Report/National%20Report.pdf>, accessed March 2018.
[15] With a 95% confidence interval of household size ranging from 6.2 to 6.8.

**Table 1: Religion, language and ethnicity of households with children under five (NMICS 2014)**

| Religion | | Languages | | Caste and ethnicity | |
|---|---|---|---|---|---|
| Hinduism | 85.6% | Nepali | 42.8% | Hill Janajati | 18% |
| Buddhism | 5.6% | Maithili | 15.9% | Hill Chhetri | 18% |
| Islam | 4.9% | Bhojpuri | 10.0% | Madhesi (other) | 16.3% |
| Kirat | 2% | Tharu | 4.9% | Hill Dalit | 10% |
| Christianity | 1.3% | Tamang | 3.6% | Hill Brahmin | 9.9% |
| Other | 0.6% | Newar | 1.8% | Tarai Janajati | 8% |
| | | Limbu | 1.5% | Madhesi Dalit | 5.8% |
| | | Baitadeli | 1.3% | Muslim | 5.2% |
| | | Others | 18.2% | Other | 8.8% |

**Sample size (N) = 5,663**

### 3.1.2    Family characteristics

Among the children aged 0–59 months, 99 per cent were living with their biological mothers, 69 per cent with their biological fathers and 69 per cent with both their biological parents. Twenty-three per cent of the biological fathers of the children aged 0–59 months were working abroad. Children belonging to the hill Chhetri, hill Dalit and hill Janajati ethnic groups were significantly less likely to be staying with both their biological parents compared to children from other caste and ethnic groups.

### 3.1.3    Birthweight and child feeding practices

The 2014 NMICS collected data on the weight at birth of the children born in the last two years and the feeding practices of children up to 36 months of age. According to the final NMICS 2014 report, close to 25 per cent of children born in the two years preceding the survey had weighed less than 2,500 grammes at birth, which is the threshold for low birth weight. The children born into households from the poorest quintile were 10 percentage points more likely to weigh under 2,500 grammes at birth compared to children born into the wealthiest quintile.

The proper feeding of infants and children is crucial to their overall growth and development in their later stages of life. Appropriate feeding also significantly reduces the probability of stunting. The 2014 NMICS collected data on the different kinds of feeding practices for infants and children including breastfeeding, dietary diversity and meal frequency. About 57 per cent of the children aged 0–5 months were exclusively breastfed,[16] and 86 per cent of the 6-23 month olds continued to be breastfed. Overall, 79 per cent of the children aged 0–23 months were appropriately breastfed. However, the children aged 6-23 months fared poorly in terms of minimum dietary diversity with only 37 per cent of them having an appropriate diversity of food in their diets. There was no statistically significant difference in children who received appropriate dietary diversity among the first four wealth quintiles. Only children in the fifth quintile had significantly higher appropriate dietary diversity.

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[16] The definition of being exclusively breastfed was only receiving breast milk, with the exception of oral rehydration solutions, vitamins, and mineral supplements.

### 3.1.4    Attendance at early childhood development programmes

Early childhood development programmes provide important preparation for schooling and learning for children who have not yet reached school-going age. The NMICS questionnaire collected data on the participation of children aged 36–59 months in early childhood development programmes.

Figure 3 shows the distribution of children attending ECD programmes by age and sex. Overall, 51 per cent of the surveyed children aged 36–59 months were attending ECD programmes. As is evident in Figure 2, there was no statistically significant difference in the overall likelihood of attending these programmes by sex, but girls were much more likely to be attending ECD programmes when they were between 48 and 59 months old compared to when they were 36 to 47 months old. Similarly, based on the findings from the final NMICS report, there were significant differences in attendance at ECD programmes by wealth quintile (with the first three wealth quintiles much less likely to attend), by geographic area (rural/urban), and by mother's level of education, which will be explored in more detail in the coming sections.



**Figure 3: Percentage of children aged 36–59 months attending early childhood development programmes – by age and sex (NMICS 2014)**

*Female children aged 48–59 months were more likely than male children to attend ECD programmes.*
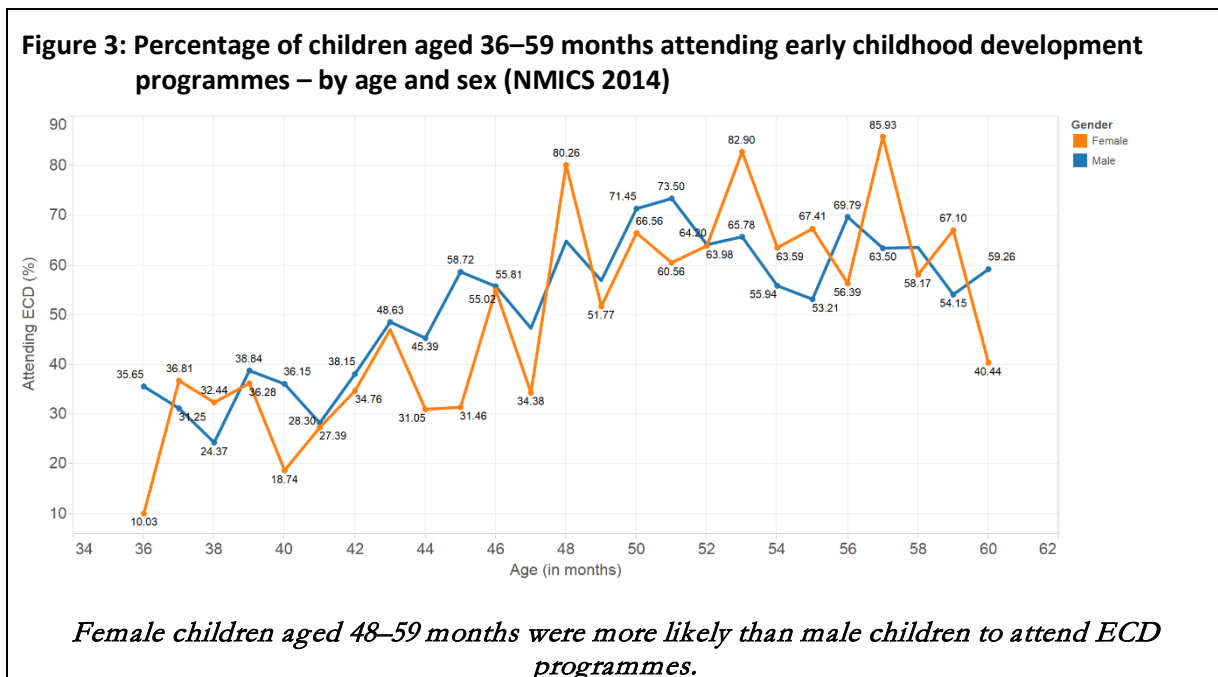
## 3.2    Early childhood care and preparation

### 3.2.1    Geographic variation in early childhood care and preparation

Figure 4 shows the geographic variation in child care and preparation among children aged 36–59 months in the 2014 NMICS sample.[17] Each NMICS cluster is represented by a dot on the map. Red dots represent lower levels of overall care and preparation received by the children aged 36–59 months in a cluster and blue dots represent higher levels of overall care and preparation across a spectrum from red to blue. The indicator used to measure overall child care and preparation was coded as 1 if the children aged 36–59 months in the concerned sampling cluster had access to children's books, had at least one adult member of household to look after them at all times, were attending early childhood development programmes, were engaged in at least four or more activities

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[17] Maps for each child care and preparation indicator are presented in Appendix 2.

by adults in their households and were overall healthy.[18] For example, the value was 100 per cent for a cluster if all children aged 0–59 months in that cluster were receiving good overall preparation and care and were overall healthy, 50 per cent if a half of the children aged 0–59 months were receiving good overall preparation and care and were overall healthy, and so on. Therefore, the red dots show the clusters where most children did not receive good care, preparation and were overall unhealthy.

**Figure 4: Percentage of children aged 0–59 months who received good overall care – by NMICS 2014 sampling cluster**
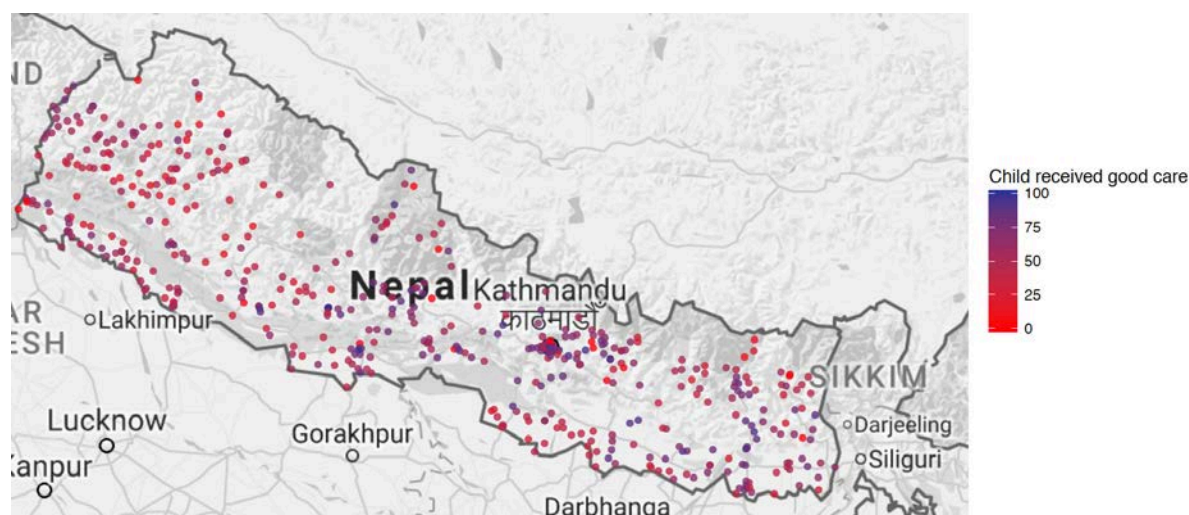


*On average, the children aged 36–59 months in the western half of the country received poorer care compared to children in the eastern half.*

### 3.2.2 Variation by sex, urban/rural distinction, wealth quintile, and caste/ethnicity

This section presents the findings on the childhood care and preparation indicators by sex, urban/rural setting, wealth quintile, and caste and ethnicity among the children aged 0–59 months to identify the most vulnerable groups who lacked proper care and attention in early childhood.

Table 2 presents the percentage point differences in the child care indicators by sex among children aged 0–59 months in Nepal. Four of the five early childhood care indicators analysed here did not show any statistically significant difference by sex. However, the female children aged 0–59 months were 6.1 percentage points less likely to be engaged in four or more developmental activities than the male children by adult household members in the three days preceding the survey.

**Table 2: Percentage points difference of children aged 0–59 months in early childhood care and preparation – by type and sex (NMICS 2014)**

|  | Presence of children's books | Child not left alone | Child attending an ECD programme | Child engaged in >4 activities | Child overall healthy |
|---|---|---|---|---|---|
| **Female** | 0.013 (0.357) | -0.011 (0.398) | -0.026 (0.390) | -0.061** (0.013) | 0.001 (0.940) |
| **Observations** | 5,661 | 5,663 | 2,575 | 2,542 | 5,663 |
| **p-values: * p < 0.1; ** p < 0.05; *** p < 0.01** | | | | | |

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[18] 'Overall healthy children' were defined as children who were not stunted, wasted, underweight or had not suffered from fever or diarrhoea in the last two weeks.

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Table 3 presents percentage point differences in the child care indicators by whether the children aged 0–59 months lived in an urban or rural areas. The urban children fared universally better in all five of the child care and preparation indicators than their rural counterparts (Table 3). They were 31.6 percentage points more likely to attend ECD programmes, 21.9 percentage points more likely to be engaged in four or more activities by adults in the previous three days, 20.1 percentage points more likely to have access to children's books, 14.9 percentage points more likely to be healthy and 6.2 percentage points more likely to have had adults taking care of them at all times in the previous three days.

**Table 3: Percentage points difference among children aged 0–59 months in early childhood care and preparation, by type and urban/rural residence (NMICS 2014)**

|  | Presence of children's books | Child not left alone | Child attending an ECD programme | Child engaged in >4 activities | Child overall healthy |
|---|---|---|---|---|---|
| **Urban household** | 0.201*** | 0.062*** | 0.316*** | 0.219*** | 0.149*** |
|  | (0.000) | (0.002) | (0.000) | (0.000) | (0.000) |
| **Observations** | 5,661 | 5,663 | 2,575 | 2,542 | 5,663 |
| **p-values: * p < 0.1; ** p < 0.05; *** p < 0.01** | | | | | |

Figure 5 shows the differences in early childhood care and preparation for the children aged 0–59 months in the NMICS sample by wealth quintile.



**Figure 5: Percentage of children aged 0–59 months engaged in different early childhood care and preparation – by type and wealth quintile (NMICS 2014)**
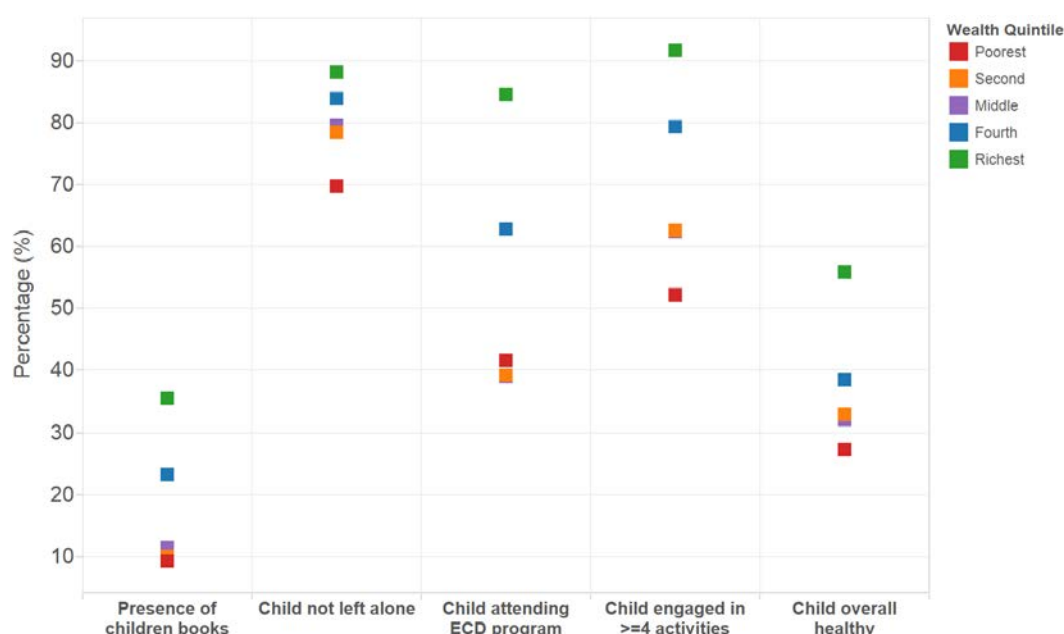
*While the level of good care and preparation for children aged 0–59 months increased from one wealth quintile to the next richest one, this relationship was far from linear and there was no statistical difference in the results for children in the lowest three quintiles for four of the five indicators.*

What is clear from the patterns for all five indicators is that wealth quintile does not linearly affect increased good overall care and preparation for children. For example, there was no statistically significant difference in access to children's books, attending ECD programmes, being engaged in four or more activities, or being overall healthy among children in the poorest three wealth quintiles. Only

children in the fourth and fifth quintiles fared statistically better in the four aforementioned indicators. Similarly, the jump from the third to the fourth quintile and the fourth to the fifth (richest) quintile was significantly higher than the previous quintile for three of the five indicators (presence of children's books, attending ECD programmes and being engaged in four or more activities). Hence it is clear that while wealth matters for children getting good overall care and preparation, it does not necessarily mean that increasing the incomes of low-income households will translate into improved overall good care for children in those households.

Figure 6 shows the differences in the early childhood care and preparation indicators among children aged 0–59 months in the NMICS sample by caste and ethnicity. The results show interesting patterns. First, there is heterogeneity in how ethnicity interplays with the different childhood care and preparation indicators. For example, the indicator on children being left alone without the care of adults in the previous three days showed the least variation by ethnic and caste group, with no significant difference between the different groups, whereas there was significant variation by ethnic and caste group for children who attended ECD programmes. More than 80 per cent of the Newar and hill Brahmin children aged 36–59 months but less than 30 per cent of the Madhesi, Madhesi Dalit and Muslim children attended ECD programmes. This result is statistically significant and illustrates that in some realms of early childhood care and preparation, the marginalized Tarai groups face highly disadvantageous outcomes. In terms of children's overall health, only children in the Newar households fared significantly better than children from other ethnicities and castes.



**Figure 6: Percentage of children aged 0–59 months engaged in types of early childhood care and preparation – by type and wealth quintile (NMICS 2014)**
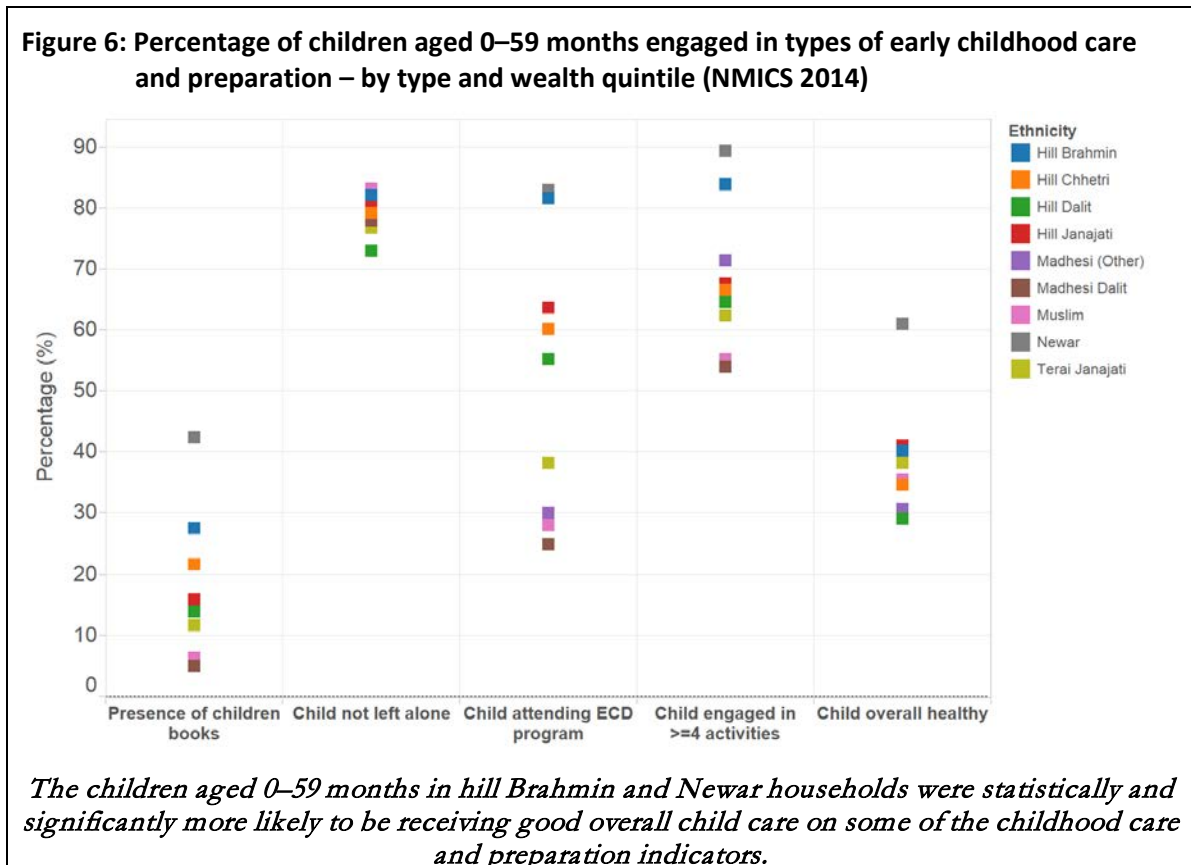
*The children aged 0–59 months in hill Brahmin and Newar households were statistically and significantly more likely to be receiving good overall child care on some of the childhood care and preparation indicators.*
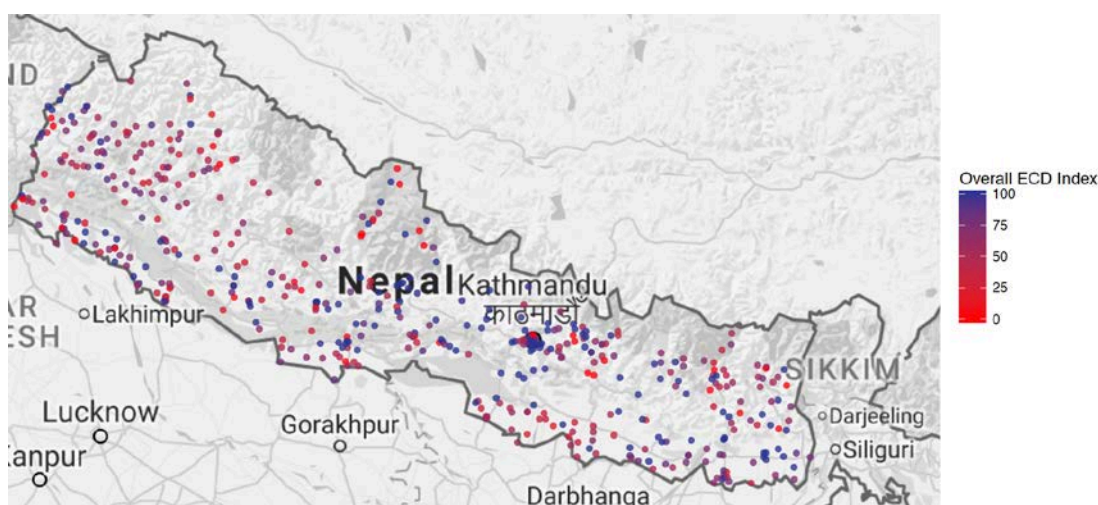
### 3.3    Early childhood development

This section presents data on early childhood development outcomes and its components for children aged 36–59 months in the 2014 NMICS sample. The data is disaggregated by sex, geography, wealth quintile and caste and ethnicity. The five indicators explored are whether the children aged 36–59

months were on track on their early childhood development within the domains of numeracy and literacy, physical development, socio-emotional development, learning and the overall early childhood development index.[19]

### 3.3.1   Geographical variation in early childhood development

Figure 7 shows the geographical variation in overall early childhood development among children aged 36–59 months in the NMICS sample. Each sampling cluster covered in the NMICS is represented by a dot on the map. Red dots represent a lower overall score for the early childhood development indicators in a cluster while blue dots represent higher overall scores for the early childhood development indicators. The indicator used to measure early childhood development was coded as 1 if children aged 36–59 months were developmentally on track for at least three of the four domains covered in this section, namely numeracy and literacy, physical development, socio-emotional development and learning. For example, the value was 100 per cent for a cluster if all children aged 36–59 months in that cluster were developmentally on track for at least three of the four ECD domains, 50 per cent if half of the children aged 36–59 months were developmentally on track for at least three of the four domains and so on. Therefore, the red dots show the clusters where most children were developmentally not on track for one or more of domain of early childhood development.

**Figure 7: Percentage of children aged 36–59 months who were developmentally on track on three of the four early childhood development domains – by NMICS 2014 sampling cluster**



*On average, the children aged 36–59 months in the hill, mountain and southern plains (Tarai) regions fared equally poorly on the early childhood development outcomes*

### 3.3.2   Variation by sex, urban/rural residence, wealth quintile and caste and ethnicity

Table 4 presents percentage point differences in whether the children aged 36–59 months were developmentally on track by sex in the four domains of early childhood development and the overall ECD index. Four of the five ECD indicators analysed did not show any statistically significant difference by sex. However, female children aged 36–59 months were 5.6 percentage points more likely to be on track socio-emotionally than male children.

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[19] See Section 2 for a complete description of the indicators in each domain.

**Table 4: Percentage points difference among children aged 36–59 months in early childhood development index and its domains – by type and sex (NMICS 2014)**

|  | Literacy/numeracy | Physical development | Socio-emotional development | Learning | Overall ECD score |
|---|---|---|---|---|---|
| **Female** | 0.026 (0.320) | 0.007 (0.458) | 0.056** (0.021) | 0.011 (0.600) | 0.042 (0.111) |
| **Observations** | 2,575 | 2,575 | 2,575 | 2,575 | 2,575 |
| **p-values: * p < 0.1; ** p < 0.05; *** p < 0.01** | | | | | |

Table 5 presents the percentage point differences on whether the children aged 36–59 months were developmentally on track on the four ECD domains and the overall ECD index by urban or rural residence. Unlike the results on sex, there were statistically significant differences by urban/rural residence for all five indicators. The children aged 36–59 months in urban areas were 32.8 percentage points more likely to be developmentally on track on numeracy and literacy, 10.8 percentage points more likely to be on track on their socio-emotional development, 9.0 percentage points more likely to be on track on learning and 2.2 points more likely to be developmentally on track on their physical development than their rural counterparts. Overall, the children in urban areas were 21.2 percentage points more likely to be developmentally on track on at least three of the four domains of early childhood development compared to the rural children.

**Table 5: Percentage point differences among children aged 36–59 months for the early childhood development index and its domains – by type and urban/rural residence (NMICS 2014)**

|  | Literacy and numeracy | Physical development | Socio-emotional development | Learning | Overall ECD score |
|---|---|---|---|---|---|
| **Urban household** | 0.328*** (0.000) | 0.022*** (0.001) | 0.108*** (0.000) | 0.090*** (0.000) | 0.212*** (0.000) |
| **Observations** | 2,575 | 2,575 | 2,575 | 2,575 | 2,575 |
| **p-values: * p < 0.1; ** p < 0.05; *** p < 0.01** | | | | | |

Figure 8 shows the percentages of children aged 36–59 months who were developmentally on track for each of the four domains of early childhood development as well as the overall early childhood development index by wealth quintile. While some domains of early childhood development showed considerable variation in the percentage of children who were on track developmentally, others were not much affected by which wealth quintile the children belonged to. For example, there was more than a 50 percentage point variation between the percentage of children who were developmentally on track on numeracy and literacy between children in the poorest and richest quintiles but there was no statistically significant difference between the wealth quintiles in terms of children who were on track on their physical development. The percentage of children who were developmentally on track in numeracy and literacy, socio-emotional development and the overall ECD index showed considerably and statistically significant jumps from the lowest four to the richest quintile, highlighting that while wealth quintiles matters in certain aspects of overall early childhood development, the association with wealth is not always linear.

**Figure 8: Percentage of children aged 36–59 months who were developmentally on track for the five early childhood development indicators – by type and wealth quintile (NMICS 2014)**

*There was no statistically significant difference in the percentage of children who were developmentally on track for at least three of the four early childhood development indicators among children in the lowest four wealth quintiles. Children in the richest quintile were significantly more likely to be developmentally on track for at least three of the four early childhood development indicators.*

Finally, Figure 9 shows the percentages of 36–59 month olds by caste and ethnicity who weredevelopmentally on track for all four ECD indicators and the overall early childhood developmentindex.
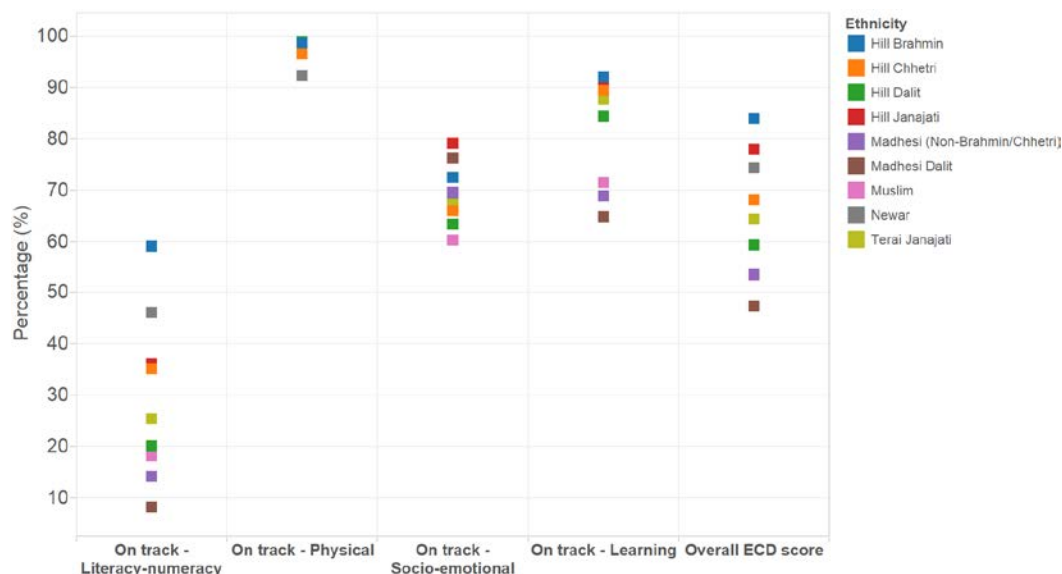
**Figure 9: Percentage of children aged 36–59 months who were developmentally on track for the early childhood development indicators – by type and ethnicity (NMICS 2014)**

*Overall, children aged 36–59 months in the hill Brahmin households were significantly more likely to be developmentally on track for at least three of the four ECD indicators compared to children in other households, except for children in Newar and hill Janajati households.*

Similar to the results by wealth quintile, some indicators showed considerable variation by caste and ethnicity in the percentage of children on track developmentally, while others didn't. For example, there was a more than 50 percentage point difference in the percentage of children who were developmentally on track for numeracy and literacy among children in the best performing hill Brahmin community and the worst performing Madhesi Dalit community. The children aged 36–59 months in Tarai-based Madhesi, Madhesi Dalit and Muslim communities fared significantly worse on the learning indicator compared to children in other communities.

### 3.4   Logistics regression analysis of the determinants of early childhood development among children aged 36–59 months

In this section, the two domains of early childhood preparation and care, and early childhood development are further examined using a logistic regression framework. A host of individual and household level characteristics were used as control variables to test the association between early childhood preparation and care and early childhood development. Two models are explored, which use a logistic regression framework controlling for individual and household characteristics.

- The first model tests the associations between each of the early childhood preparation and care variables and different domains of early childhood development.
- The second model tests the association between overall early childhood care and the different domains of early childhood development.

The reference categories and variables were selected based on the descriptive analysis in the previous sections and a review of the literature on the subject. For example, for geography the Mid-western region was selected as the reference category as this region performs poorly compared to other regions on both childhood care and development. Hill Brahmins were selected as the caste and ethnicity reference category because they are traditionally the most privileged social group. The other variables were sex, wealth quintile, urban/rural residence, household size and whether children's fathers were living abroad. While these variables were selected based on suitability to the context

and based on the preceding analysis, these are not necessarily a comprehensive list of the factors that influence the domains of interest. As such, this section should be treated as an initial exploratory analysis.

### 3.4.1 Model 1 – Logistic regression to test association between different early childhood care and preparation indicators and early childhood development domains

The first model explored the factors that determine early childhood development and its domains of whether children aged 36–59 months in the NMICS sample were developmentally on track on numeracy and literacy, physical development, socio-emotional development and learning. Logistic regression analysis was applied to 12 household and individual characteristics to determine associations between different early childhood care and preparation and early childhood development variables. Reference categories were taken for each characteristic and the odds ratios calculated for the non-reference categories as they varied from the reference category on the likely outcome of the five aspects of childhood development.

The odds ratios in Table 6 show a number of factors that are strongly associated with the early childhood development domains among children aged 36–59 months in the NMICS sample:

- Children who had access to children's books in their households were almost 1.6 times more likely to be developmentally on track for at least three of the four domains in the early childhood development index.
- The children who were attending ECD programmes were 12 times more likely to be developmentally on track in numeracy and literacy and 2.1 times more likely to be developmentally on track for at least three of the four domains in the early childhood development index.
- The children who were overall healthy were 2.4 times more likely to be developmentally on track for numeracy and literacy and 1.3 times more likely to be developmentally on track for at least three of the four domains in the early childhood development index.
- Wealth had a strong but non-linear relationship with different early childhood development variables. The children in the richest quintile were almost 2.2 times more likely to be developmentally on track than the children in the lowest four quintiles for at least three of the four domains in the early childhood development index.
- Compared to the reference category of children in the Mid-Western Development Region, children in the Eastern, Western, and Far Western regions were more likely to be developmentally on track for at least three of the four domains in the early childhood development index.
- Compared to the children living in smaller households (1–4 members), the children in medium and large-sized households were less likely to be developmentally on track for at least three of the four domains in the early childhood development index.
- Newar, hill Dalit, Madhesi Dalit and Madhesi chdilren were less likely to be developmentally on track than hill Brahmin children for at least three of the four domains in the early childhood development index.
- The female children aged 36–59 months were 1.4 times more likely to be developmentally on track on numeracy and literacy, socio-emotional development and the overall early childhood development index than male children of the same age group.

**Table 6: Logistic regression analysis to test associations between early childhood preparation and care indicators and early childhood development indicators (NMICS 2014)**

| Background characteristics | Odds ratios | | | | |
|---|---|---|---|---|---|
| | Literacy & numeracy | Physical development | Socio-emotional development | Learning | Overall ECD score |
| **1. Presence of children's books** | | | | | |
| *Ref. category: No children's books in household* | | | | | |
| At least one children's book in household | 1.691*** | 6.486*** | 1.287 | 1.315 | 1.600*** |
| **2. Child not left alone** | | | | | |
| *Ref. category: Child left alone without adults* | | | | | |
| Child in presence of at least one adult | 0.942 | 0.279** | 0.925 | 0.911 | 0.845 |
| **3. Child attending ECD programmes** | | | | | |
| *Ref. category: Child did not attend ECD programmes* | | | | | |
| Child attended ECD programmes | 12.53*** | 1.256 | 0.959 | 1.986*** | 2.097*** |
| **4. Child engaged in >=4 developmental activities** | | | | | |
| *Ref. category: Not engaged in >= 4 activities* | | | | | |
| Engaged in >= activities | 2.357*** | 0.702 | 1.069 | 1.136 | 1.349** |
| **5. Child overall healthy** | | | | | |
| *Ref. category: Unhealthy* | | | | | |
| Overall healthy | 1.338* | 1.062 | 1.237 | 1.160 | 1.235 |
| **6. Region** | | | | | |
| *Ref. category: Mid-Western* | | | | | |
| Eastern | 1.427 | 0.203** | 3.365*** | 0.234*** | 1.950*** |
| Central | 0.866 | 0.531 | 1.945*** | 0.206*** | 1.131 |
| Western | 1.302 | 1.629 | 2.170*** | 0.384*** | 1.639** |
| Far Western | 0.676 | 0.391* | 1.884*** | 0.488*** | 1.603** |
| **7. Household size** | | | | | |
| *Ref. category: Small (1+4)* | | | | | |
| Medium (5+8) | 0.771 | 1.139 | 0.952 | 0.777 | 0.766* |
| Large (8 or higher) | 0.732 | 0.440 | 0.968 | 0.800 | 0.664* |
| **8. Urban/rural** | | | | | |
| *Ref. category: Rural* | | | | | |
| Urban | 1.234 | 2.424 | 1.388* | 0.965 | 1.233 |
| **9. Caste and ethnicity** | | | | | |
| *Ref. category: Hill Brahmin* | | | | | |
| Hill Chhetri | 0.884 | 0.446 | 1.083 | 0.710 | 0.692 |
| Newar | 0.331** | 0.0591*** | 0.729 | 1.036 | 0.379** |
| Madhesi Brahmin/Chhetri | 0.592 | 1 | 1.824 | 0.616 | 0.833 |
| Hill Dalit | 0.477** | 1.288 | 0.988 | 0.505* | 0.520** |
| Hill Janajati | 0.729 | 0.747 | 1.795** | 1.142 | 1.079 |
| Tarai Janajati | 0.872 | 0.787 | 1.247 | 1.080 | 0.813 |
| Other | 0.358*** | 1.116 | 0.981 | 0.318** | 0.502 |
| Muslim | 0.618 | 1.538 | 0.861 | 0.429** | 0.561 |
| Madhesi Dalit | 0.253** | 1.554 | 1.614 | 0.404** | 0.439** |
| Madhesi (non-Brahmin/Chhetri) | 0.311*** | 2.165 | 1.231 | 0.417** | 0.521* |
| **10. Wealth quintile** | | | | | |
| *Ref. category: Poorest* | | | | | |
| Second | 1.758** | 1.790 | 0.707* | 0.993 | 0.809 |
| Middle | 2.469*** | 1.111 | 0.820 | 0.987 | 0.959 |
| Fourth | 3.079*** | 0.914 | 0.613** | 1.367 | 1.099 |
| Richest | 4.846*** | 5.681 | 1.207 | 1.570 | 2.252** |
| **11. Father abroad** | | | | | |
| *Ref. category: Father not abroad* | | | | | |
| Father abroad | 0.784 | 1.136 | 0.908 | 1.095 | 0.814 |
| **12. Sex** | | | | | |
| *Ref. category: Male* | | | | | |
| Female | 1.426** | 1.358 | 1.389*** | 1.200 | 1.406*** |
| **Sample size (N)** | **2,542** | **2,530** | **2,542** | **2,542** | **2,542** |

p-values: * p < 0.1; ** p < 0.05; *** p < 0.01

### 3.4.2 Model 2 – Logistic regression to test association between overall early childhood care and early childhood development domains

The second model explored the factors that determine early childhood development and its domains – whether children aged 36–59 months in the NMICS sample were developmentally on track on numeracy and literacy, physical development, socio-emotional development and learning. A logistic regression framework was applied to eight household and individual characteristics to determine the associations between overall childhood care and early childhood development variables. Reference categories were taken for each characteristic and the odds ratios calculated.

The odds ratios in Table 7 show a number of factors that were strongly associated with different forms of early childhood development among children aged 36–59 months in the NMICS sample:

- Children who received overall good care were 5.1 times more likely to be developmentally on track on physical development, 3.2 times more likely to be developmentally on track on numeracy and literacy and 2.8 times more likely to be on track for at least three of the four domains of the early childhood development index.
- Wealth had a strong but non-linear relationship with the different early childhood development variables. Children in the second richest quintile were 1.6 times and children in the richest quintile 3.1 times more likely to be developmentally on track than children in the lowest three quintiles for at least three of the four domains in the early childhood development index.
- Compared to the reference category of children living in the Mid-Western Development Region, children in the Eastern, Western, and Far Western regions were more likely to be developmentally on track for at least three of the four domains of the early childhood development index.
- Compared to children in smaller households (1–4 members), the children in the medium and large households were less likely to be developmentally on track for at least three of the four domains in the early childhood development index.
- Newar, hill Dalit, Muslim, Madhesi Dalit, and Madhesi children were less likely to be developmentally on track than hill Brahmin children for at least three of the four domains in the early childhood development index.
- Female children aged 36–59 months were 1.3 times more likely to be developmentally on track on numeracy and literacy, socio-emotional development, and the overall early childhood development index, compared to male children aged 36–59 months.

**Table 7: Logistic regression to test associations between overall childhood care indicators and early childhood development indicators (NMICS 2014)**

| Background characteristics | Odds ratios | | | | |
|---|---|---|---|---|---|
| | Literacy & numeracy | Physical development | Socio-emotional development | Learning | Overall ECD score |
| **1. Child receives overall good care** | | | | | |
| *Ref. category: Child doesn't receive overall good care* | | | | | |
| Child receives overall good care | 3.248*** | 5.147** | 1.834** | 1.542 | 2.810*** |
| **2. Region** | | | | | |
| *Ref. category: Mid-Western* | | | | | |
| Eastern | 1.687** | 0.196*** | 3.261*** | 0.292*** | 2.084*** |
| Central | 1.106 | 0.417 | 1.910*** | 0.251*** | 1.225 |
| Western | 2.180*** | 1.460 | 2.177*** | 0.529* | 2.042*** |
| Far-western | 0.631* | 0.331** | 1.872*** | 0.475*** | 1.426** |
| **3. Household size** | | | | | |
| *Ref. category: Small (1-4)* | | | | | |

| Background characteristics | Odds ratios | | | | |
|---|---|---|---|---|---|
| | **Literacy & numeracy** | **Physical development** | **Socio-emotional development** | **Learning** | **Overall ECD score** |
| Medium (5-8) | 0.709** | 0.991 | 0.946 | 0.735 | 0.750* |
| Large (8 or higher) | 0.635** | 0.412 | 0.985 | 0.742 | 0.638** |
| **4. Urban/rural** | | | | | |
| *Ref. category: Rural* | | | | | |
| Urban | 1.290 | 2.860 | 1.385* | 1.113 | 1.399* |
| **5. Caste and ethnicity** | | | | | |
| *Ref. category: Hill Brahmin* | | | | | |
| Hill Chhetri | 0.879 | 0.520 | 1.081 | 0.768 | 0.701 |
| Newar | 0.376*** | 0.103** | 0.773 | 1.127 | 0.411** |
| Madhesi Brahmin/Chhetri | 0.561 | 1 | 2.138 | 0.658 | 0.818 |
| Hill Dalit | 0.469** | 1.568 | 0.981 | 0.534* | 0.512** |
| Hill Janajati | 0.634 | 0.769 | 1.801** | 1.140 | 1.001 |
| Tarai Janajati | 0.458** | 0.701 | 1.264 | 0.864 | 0.624 |
| Other | 0.127*** | 0.873 | 0.936 | 0.231*** | 0.311*** |
| Muslim | 0.203*** | 1.061 | 0.833 | 0.318*** | 0.355*** |
| Madhesi Dalit | 0.104*** | 1.163 | 1.590 | 0.305*** | 0.293*** |
| Madhesi (non-Brahmin/Chhetri) | 0.147*** | 1.889 | 1.192 | 0.318*** | 0.354*** |
| **6. Wealth quintile** | | | | | |
| *Ref. category: Poorest* | | | | | |
| Second | 2.112*** | 1.718 | 0.710* | 1.101 | 0.936 |
| Middle | 3.353*** | 1.218 | 0.837 | 1.173 | 1.193 |
| Fourth | 5.799*** | 1.077 | 0.648** | 1.755** | 1.579** |
| Richest | 9.460*** | 5.092 | 1.255 | 2.061* | 3.126*** |
| **7. Father abroad** | | | | | |
| *Ref. category: Father not abroad* | | | | | |
| Father abroad | 0.763 | 1.165 | 0.897 | 1.109 | 0.825 |
| **8. Sex** | | | | | |
| *Ref. category: Male* | | | | | |
| Female | 1.343** | 1.384 | 1.374*** | 1.161 | 1.341** |
| **Sample size (N)** | **2,575** | **2,562** | **2,575** | **2,575** | **2,575** |

p-values: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

# 4   DISCUSSION AND CONCLUSIONS

This report presents key findings on the overall state of early childhood care, preparation and early childhood development in Nepal. A total of 64.4 per cent of the children were found to be developmentally on track for three of the four analysed early childhood development domains. Of the four domains (and 10 indicators) included in the ECD index, only 28.8 per cent of the children were developmentally on track for the literacy and numeracy domain, 68.6 per cent were on track for the socio-emotional development domain, while a significantly better 96.4 per cent were on track for the physical development domain. This further analysis also found that only 16.8 per cent of children aged 0–59 months had access to any children's books at home and only 36.2 per cent of them were classified as healthy being not stunted, wasted or underweight, and having not suffered fever or diarrhoea in the two weeks preceding the survey.

This analysis also enumerated the basic profile of the NMICS 2014 0–59 month old children. Only 13 per cent of the NMICS sample households with children aged 0–59 months lived in urban areas compared to 18 per cent overall. In terms of the likelihood of attending ECD programmes, there was no statistical differences by sex, but 48–59 month-old female children were much more likely to be attending ECD programmes than 36–47-month old female children.

The topic of early childhood care and development was further analysed by disaggregating data on the two domains by sex, urban/rural residence, wealth quintile and caste and ethnicity. On early childhood care and preparation, the analysis found that the female children aged 36–59 months were significantly less likely to be engaged in four or more developmental activities by adult household members than their male counterparts. Similarly, the children aged 0–59 months in urban households had universally better childhood care and preparation outcomes than the rural children. For specific indicators, the likelihood of attending ECD programmes showed the greatest variation by wealth quintile and caste and ethnicity for children aged 36–59 months, whereas the likelihood of a child being left alone without the presence of an adult showed the least variation both by wealth quintile and caste and ethnicity for children aged 0–59 months.

On early childhood development, this report found that female children aged 36–59 months were more likely to be on track on socio-emotional development. Similarly, children aged 36–59 months in urban households were universally more likely to be on track for all four ECD domains compared to rural children. Being on track in literacy and numeracy showed the greatest variation by both wealth quintile and caste and ethnicity for children aged 36–59 months, whereas being on track for physical development showed the least variation both by wealth quintile and caste and ethnicity.

Results from the logistic regressions shed further light on associations between the early childhood care and the early childhood development indicators. Two models were explored – the first one with each childhood care and preparation indicator separately as independent variables and the second with a combined overall early childhood care indicator as a composite independent variable. Both models found strong associations between several aspects of the early childhood care and the early childhood development indicators while controlling for potential confounders in the form of the household and individual characteristics. For example, the first model found that children who attended ECD programmes were significantly more likely to be on track on the literacy and numeracy domain and had good overall ECD index scores. The second model found that children who received overall good care and preparation were significantly more likely to be on track for all four ECD domains.

This report presents detailed disaggregated findings on early childhood care and development. The findings help fill the large information gaps on the early childhood development domain in the Nepali context. It is hoped that policymakers will use this information to identify the most marginalized groups of children and consider their needs when designing policies and programmes on early childhood care and development. The success of holistic ECD programmes has yet to go beyond the education sector in Nepal and this report sheds much needed light on the areas where progress is lacking and that need addressing to create a better future for all Nepal's under five-year-olds children.

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**Appendix 1: Map of the NMICS ecozones and Nepal's fomer development regions**
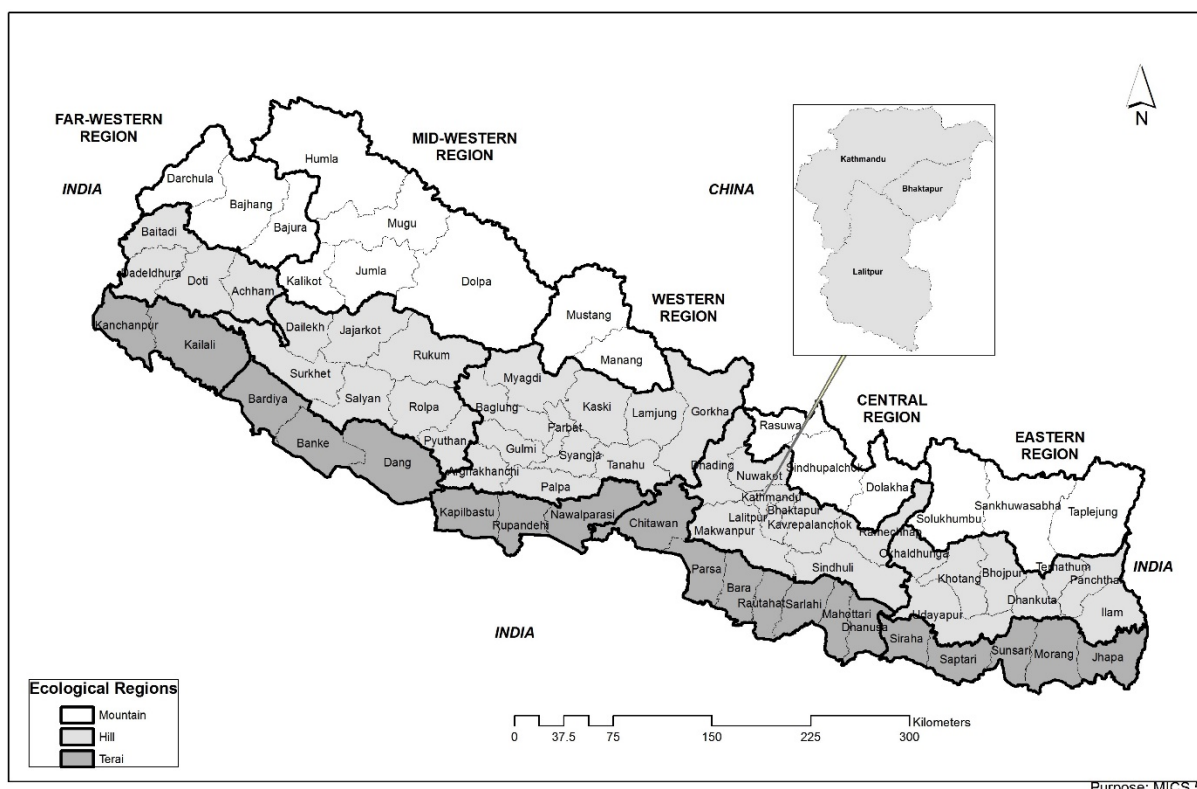
**Appendix 2: Additional maps showing results of the NMICS 2014 further analysis**

## 1. Early childhood care and preparation

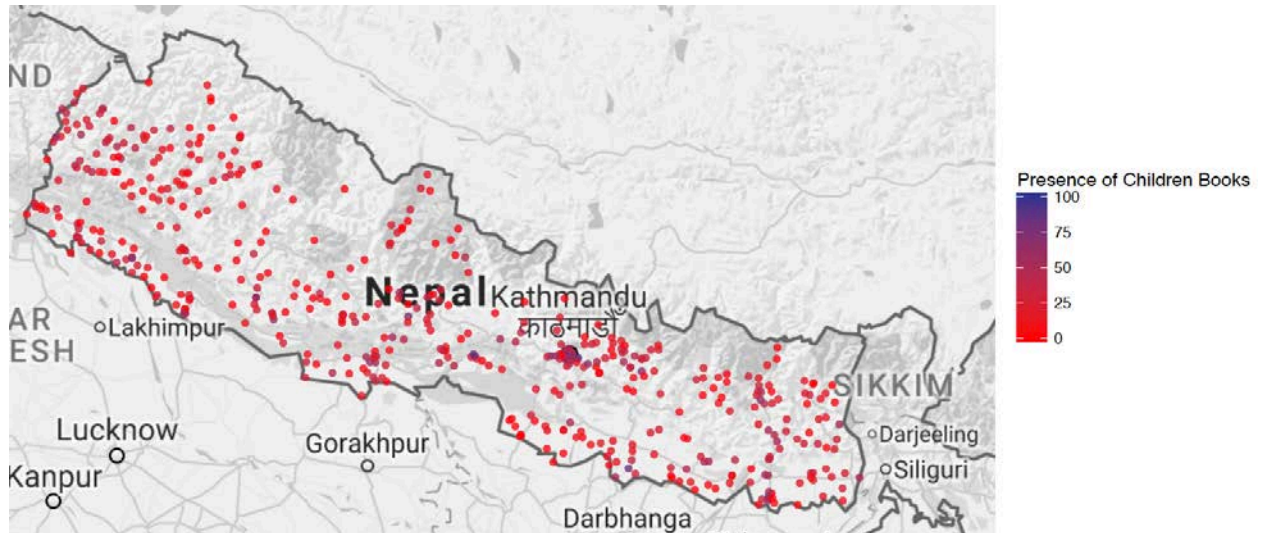**Figure A1: Presence of children's books (0–59 month olds) – by NMICS 2014 sampling cluster**



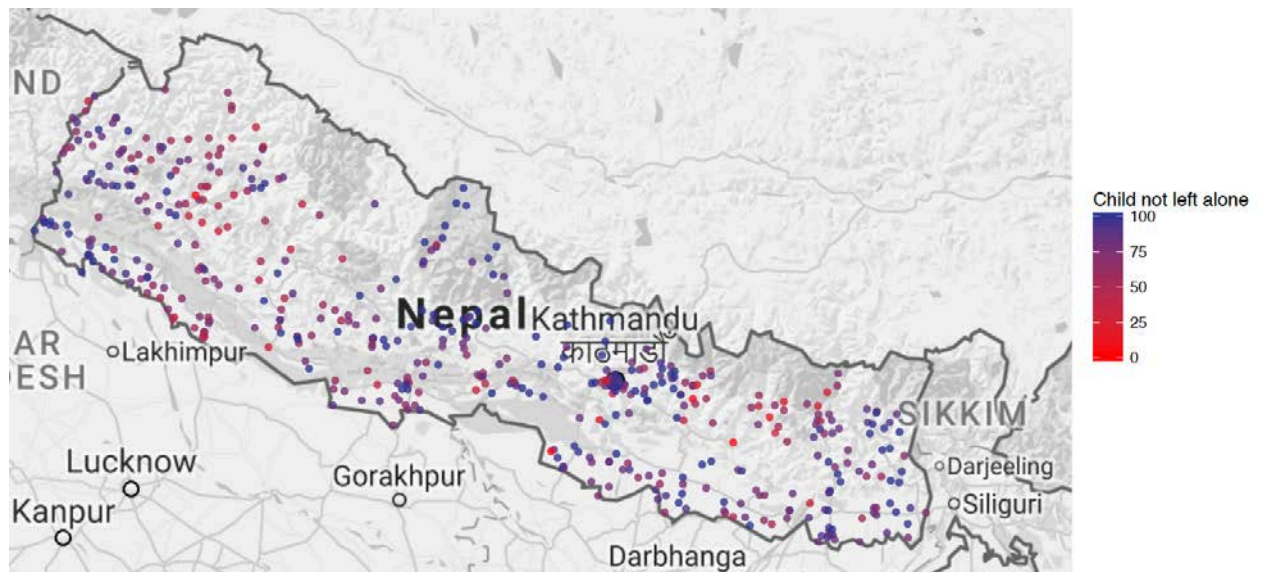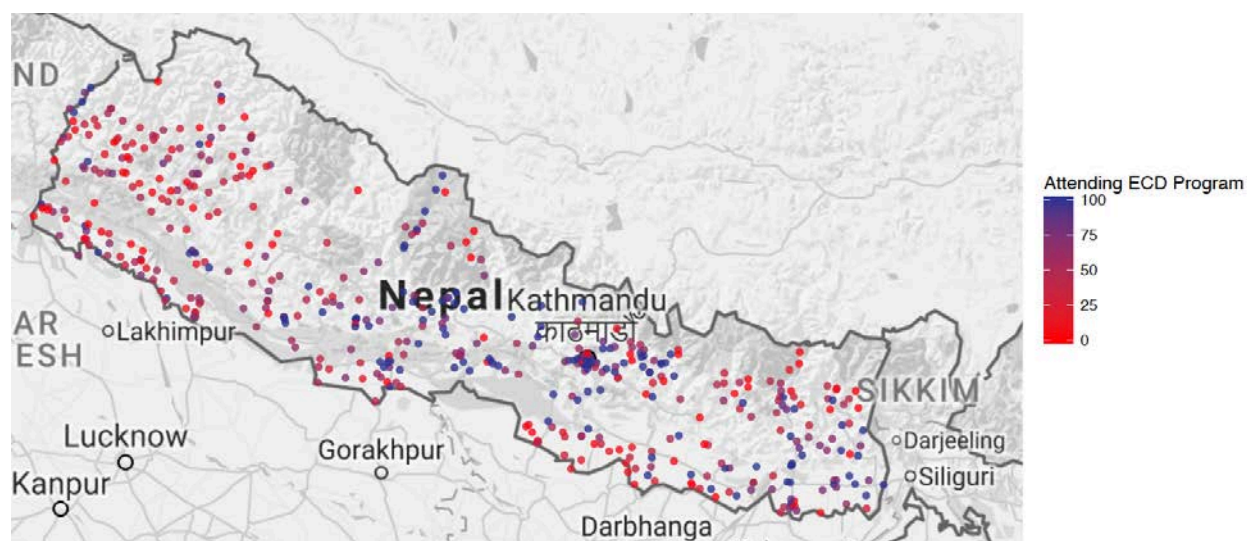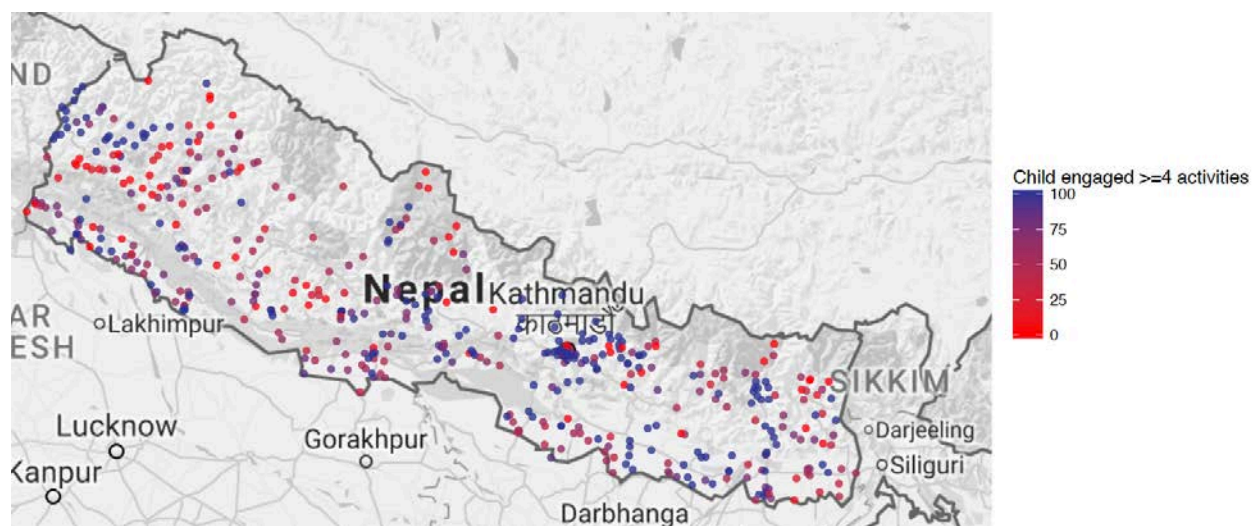**Figure A2: Child not left alone (0–59 month olds) – by NMICS 2014 sampling cluster**

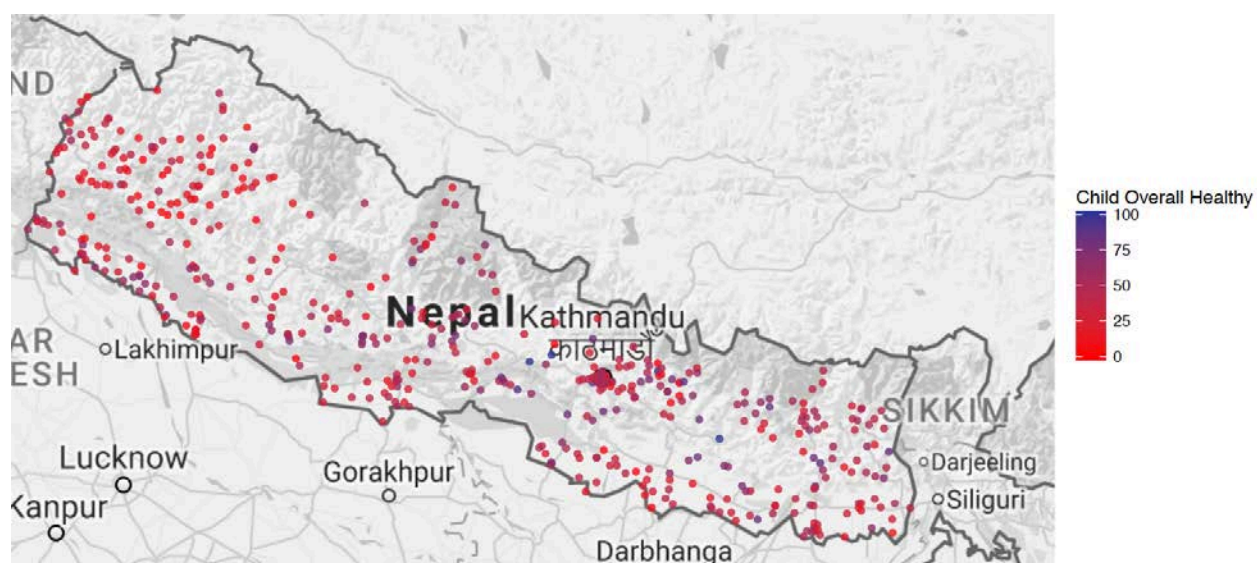**Figure A3: Child attending ECD programmes (36–59 month olds) – by NMICS 2014 sampling cluster**



**Figure A4: Child engaged in >4 activities (36–59 month olds) – by NMICS 2014 sampling cluster**



**Figure A5: Overall child health (0–59 month olds) – by NMICS 2014 sampling cluster**

## 2. Early childhood development domains

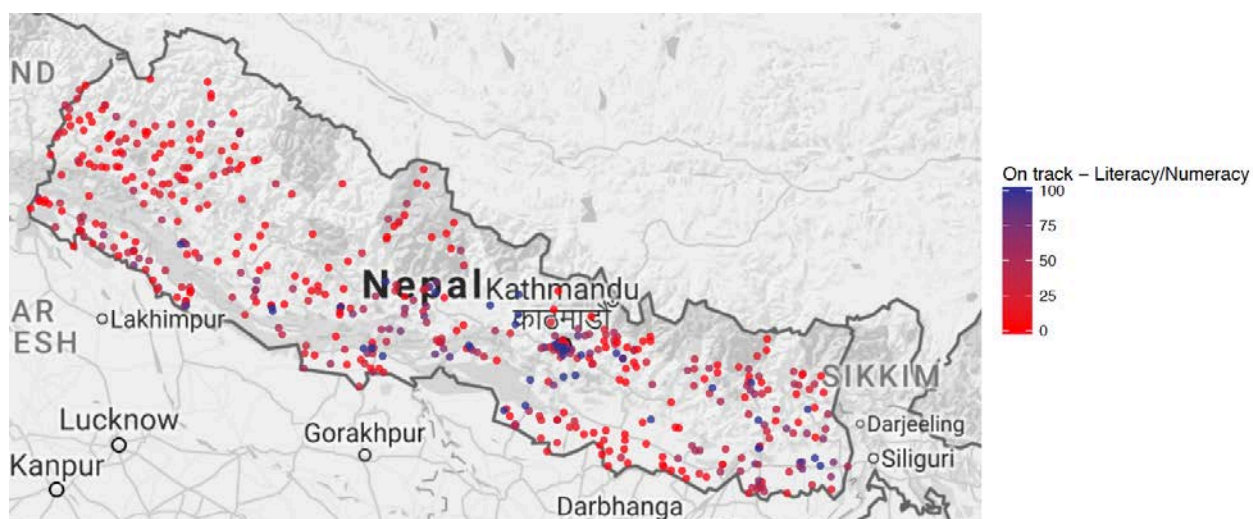**Figure A6: On track on literacy and numeracy (36–59 month olds) – NMICS 2014 sampling clusters**



**Figure A7: On track on physical development (36–59 month olds) – NMICS 2014 sampling clusters**
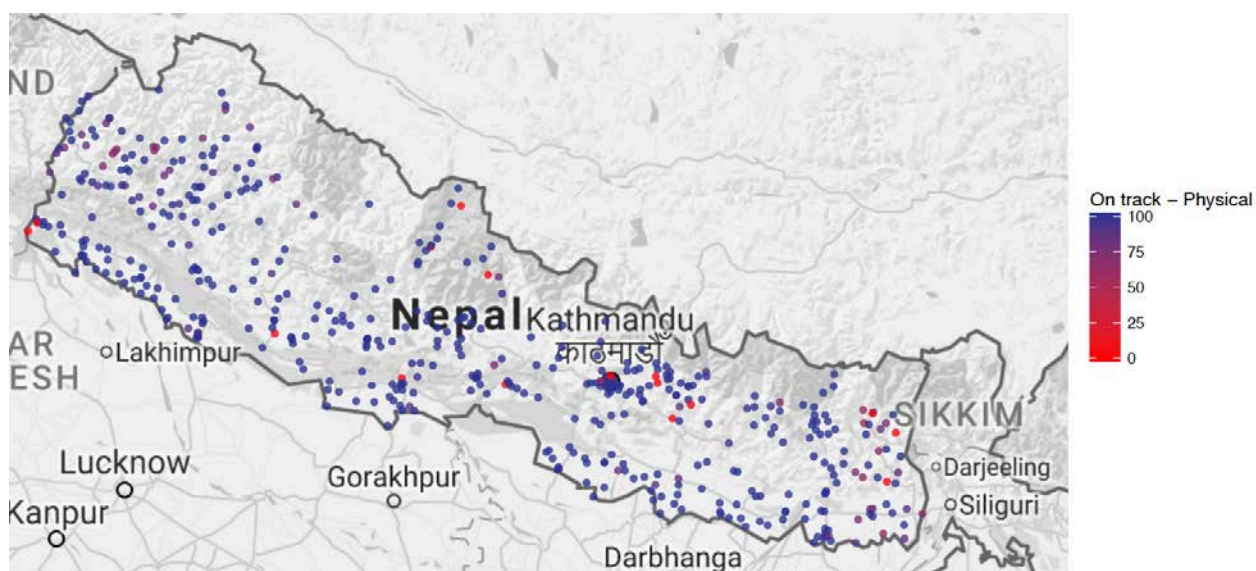
**Figure A8: On track on socio-emotional development (36–59 month olds) –NMICS 2014 sampling clusters**
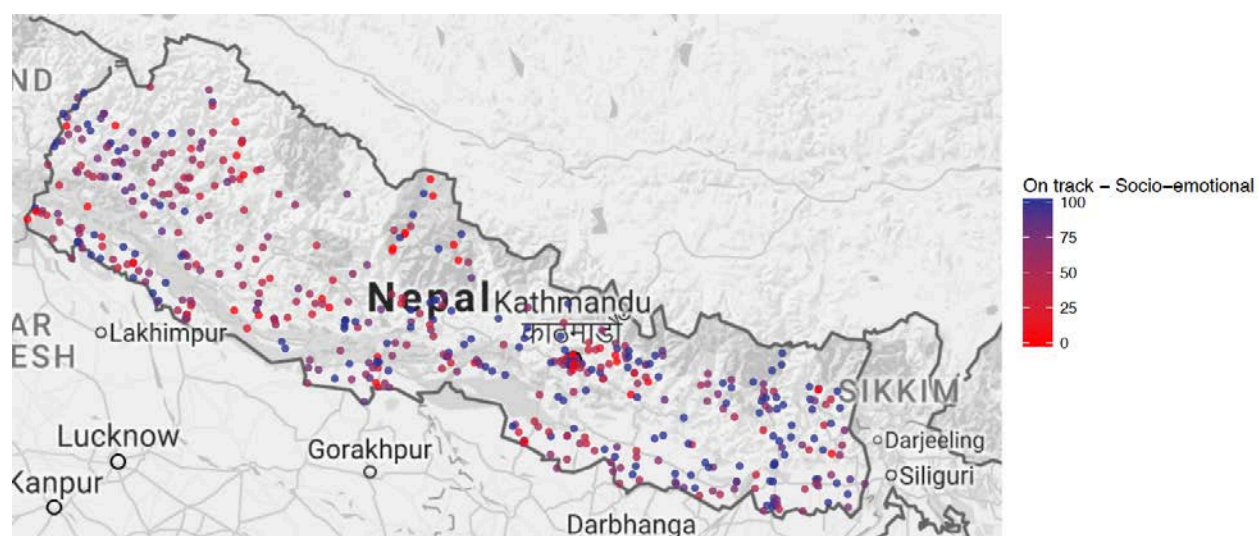


**Figure A9: On track on learning (36–59 month olds) – NMICS 2014 sampling clusters**