My Childhood, My Future

Early Childhood Development in Lebanon

WORLD BANK GROUP

CHAPTER 9

Lebanon

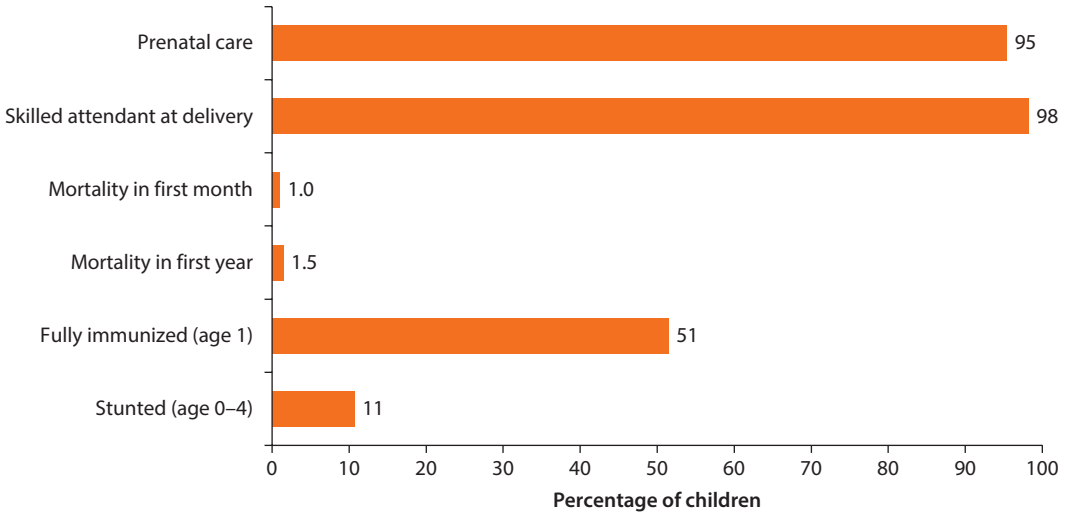
The State of Early Childhood Development in Lebanon

Despite successes in some areas, in Lebanon there are still some gaps in early childhood development (ECD). Lebanon does well on early health and has low mortality rates, but problems with immunizations and stunting threaten many children's development. Figure 9.1 shows summary indicators of ECD in Lebanon. In terms of prenatal and delivery care, 95 percent of births received prenatal care and 98 percent had a skilled attendant at delivery. In the first month of life, 1.0 percent of children die, and in the first year of life, 1.5 percent die. Lebanon is falling short in terms of immunizations, with just 51 percent of children age one fully immunized. Malnutrition is a problem in Lebanon, where 11 percent of children are stunted.

This chapter presents the status of ECD in Lebanon. The health status of children is examined through indicators (see box 9.1) of early mortality, prenatal care, having a trained attendant at birth, and immunizations. Children's nutritional status is measured by stunting (height-for-age). To better understand the context and conditions that influence ECD outcomes, the analysis also examines background factors that may be associated with ECD outcomes at the individual, household, and community levels and their relationships (see annexes 9A, 9B, and 9C for additional information on the data and these relationships). For the overall country context, see box 9.2. Finally, the analysis measures the gaps and extent of inequality in ECD outcomes.

The analysis is based on the latest available data: the Pan Arab Project for Family Health survey (PAPFAM) from 2004. The data cover primarily the health dimension of early childhood from before a child is born up through age four. If more indicators were available and examined, they could provide an even richer picture of ECD in Lebanon. While under normal circumstances ECD indicators change relatively slowly, on the ground today, in light of the crisis in the Syrian Arab Republic and the resulting refugee crisis in Lebanon, there may be substantial changes. Children may face additional challenges, but there may also be opportunities to promote ECD.

Figure 9.1 ECD Summary Indicators



Source: World Bank calculations based on Lebanon Pan Arab Project for Family Health (PAPFAM) 2004.
Note: ECD = early childhood development.

Box 9.1 ECD Indicators Examined in Lebanon

Prenatal care
Trained attendant at delivery
Neonatal mortality (dying in the first month)
Infant mortality (dying in the first year)
Fully immunized
Stunting/Height-for-age

Survival, Health Care, and Nutrition

The first step in healthy ECD is simply surviving early childhood. The rate of infant mortality in Lebanon is lower than other countries in the region. Reducing under-five mortality rates by two-thirds is one of the Millennium Development Goals and a vital goal in Lebanon's effort to promote ECD. In 2004, infant mortality, which refers to children dying before their first birthday, was 15 deaths per thousand births.[1] Lebanon's rate is well below the 2012 average rate for the Middle East and North Africa (MENA) region (24 per thousand) (UNICEF 2014). Most of infant mortality is composed of neonatal mortality—children dying within the first month of life. In 2004 in Lebanon, 10 children out of every thousand died during their first month of life, which is below the 2012 regional average of 15 in every thousand (UNICEF 2014). Infant mortality has been falling over time in Lebanon—down from around 31 children per thousand in 1990; however, compared to other countries in the region, Lebanon has made substantially less progress on infant mortality (World Development Indicators).

Box 9.2 Summary of Development Indicators in Lebanon

Lebanon is an upper-middle-income country with a gross domestic product per capita in 2012 of about $9,705 (in current US Dollars, table B9.2.1). Lebanon has an estimated population of 4.4 million, of which 22 percent are under the age of 15. The average life expectancy at birth in 2012 was 80 years, which was a substantial improvement over 1990's life expectancy of 70 years. The primary gross enrollment rate in Lebanon was 107 percent in 2012. Overall, Lebanon ranks 72 out of 186 countries with comparable data in the 2012 Human Development Index.

Table B9.2.1 Lebanon's Socioeconomic Indicators

	1990	*2012*
Total population (millions)	2.7	4.4
% of population under 15	34	22
GDP per capita (current US dollars)	$1,050	$9,705
Life expectancy at birth (years)	70	80
School enrollment, primary (% gross)	—	107

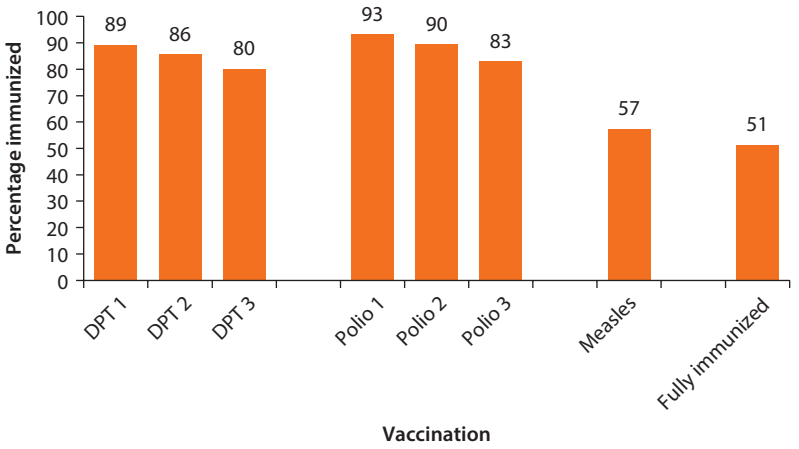
Sources: UNDP 2014; World Development Indicators.
Note: GDP = gross domestic product; — = not available.

In Lebanon, almost all births received prenatal care and were attended by a skilled health professional.[2] Addressing both early mortality and ECD begins during pregnancy. Around 95 percent of births received prenatal care from a health professional,[3] and 98 percent of births were attended by a health professional.[4] Lebanon has been doing well on delivery care for decades; in 1995, the rate was already at 98 percent (World Development Indicators). Lebanon is well above the current regional average for delivery care of 79 percent (UNICEF 2014).

The immunization of children plays an important role in preventing illnesses and reducing mortality (Molina 2012). Yet Lebanon is far from full immunization coverage. Children are considered fully immunized if they have received immunizations for all six major preventable childhood diseases: tuberculosis, diphtheria, whooping cough, tetanus,[5] polio,[6] and measles. Data were not available in the PAPFAM survey on tuberculosis vaccine coverage, so the rate of full immunization is calculated based on the other immunizations. Children should be fully immunized by 12 months of age; this analysis focuses on children 12–23 months to allow for optimal parental recall. In Lebanon only 51 percent of children 12–23 months are fully immunized.[7] As figure 9.2 shows, measles in particular has a low coverage rate at only 51 percent. Additionally, 80 percent of children 12–23 months have received the third DPT (diphtheria, pertussis, tetanus) dose, and 83 percent have received the third polio dose. Looking at more recent (2010) data, vaccination rates have, if anything, deteriorated: only 74 percent of children received the third polio or DPT doses, and 53 percent received the measles vaccine (World Development Indicators).

Nutrition plays an important role in children's healthy development. In Lebanon, 11 percent of children are stunted. As a result of their stunting, these

Figure 9.2 Percentage of Children Aged 12–23 Months Immunized, by Vaccination



Source: World Bank calculations based on Lebanon PAPFAM 2004.
Note: DPT = diphtheria, pertussis, tetanus.

children will accumulate less health and human capital and face lower wages later in life. This is one-tenth of the future workforce that will be less productive in their working years because of almost entirely preventable malnutrition. In terms of weight-for-age, 4 percent of children in Lebanon are underweight (–2 standard deviations [SD] or lower). In terms of weight-for-height, 6 percent of children are wasted (–2 SD or lower).

Ninety-two percent of children under the age of five live in a household with sufficiently iodized salt (World Development Indicators).[8] Micronutrients such as iron, vitamin A, zinc, and iodine play an important role in both physical and cognitive development. Reaching the remaining 8 percent of children can save them from the risk of impaired cognitive development due to the absence of iodine in their diets.

Cognitive, Social, and Emotional Development

While the 2004 PAPFAM does not collect data on early childhood education, other sources indicate that Lebanon has an 81 percent enrollment rate in pre-primary (World Development Indicators). In Lebanon, early childhood care and education (ECCE) is provided by a mix of public and private nurseries and kindergartens. Nurseries are primarily private, while pre-primary school is a mix of public and private (Kaloustian 2012).

Key Factors Affecting Early Childhood Development

A number of background characteristics at the child, family, and community levels affect ECD outcomes: gender, parents' education, household socioeconomic status (wealth),[9] geographic location (region or governorate), and

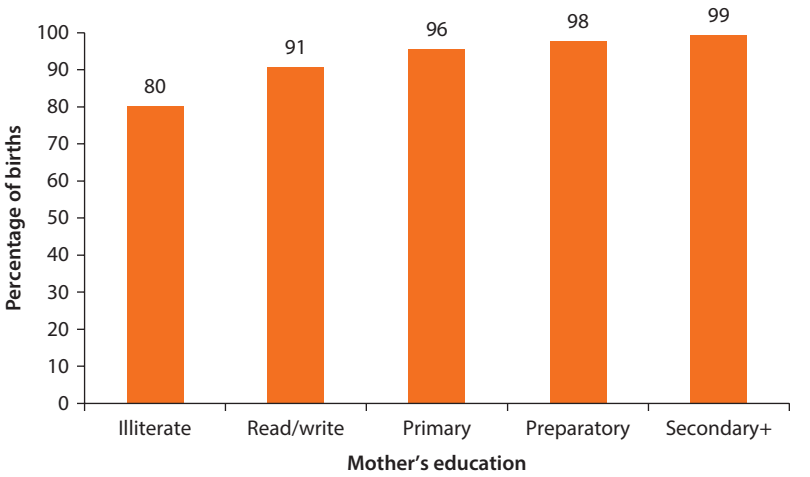
residence (urban/rural). Understanding these relationships can help identify why some children have poor ECD outcomes and which children to target with policy or programmatic interventions.

Survival, Health Care, and Nutrition

Given the relatively small sample size of the survey and the low mortality rates observed in Lebanon, it is not possible to identify risk factors specific to Lebanon for infant mortality and neonatal mortality. However, despite the fact that prenatal care rates are high (95 percent), there are substantial differences in use of prenatal care based on certain background characteristics. Household wealth and mother's and father's education are strongly associated with births having prenatal care. Births in the poorest fifth of households have an 89 percent chance of prenatal care, while births in the richest fifth of households have a 100 percent chance. There are large differences based on mother's education (figure 9.3). While a birth to a mother who is illiterate has an 80 percent chance of receiving prenatal care, a mother even just being able to read and write increases the chance to 91 percent, and secondary or higher educated mothers have a 99 percent chance of receiving prenatal care. There are similar differences based on the father's education as well. After accounting for multiple characteristics, births in the third through richest fifth of households are more likely to receive prenatal care than births in the poorest fifth of households. Having a mother with primary or greater education increases the chance of a birth receiving prenatal care, as does having a father who can read or write or who has preparatory or greater education. Given the nearly universal prevalence of skilled attendants at delivery, it is neither necessary nor possible to identify factors affecting access to these services.

Lebanon had a low level of full immunizations (51 percent) in 2004 and also has an unequal distribution. There are large disparities in rates of immunization

Figure 9.3 Percentage of Births Receiving Prenatal Care, by Mother's Education

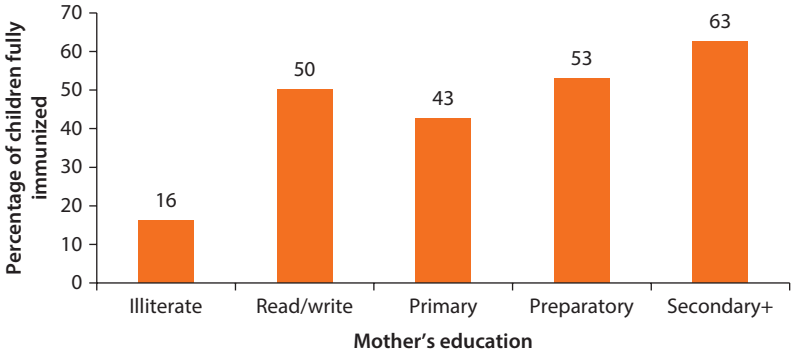


Source: World Bank calculations based on Lebanon PAPFAM 2004.

coverage based on wealth and parents' education. For instance, while only 33 percent of children 12–23 months from the poorest fifth of households have been fully immunized, 78 percent of children from the richest fifth of households have been fully immunized. Differences are also large based on mother's education, as figure 9.4 shows. There is a particularly large gap between illiterate mothers, only 16 percent of whose children are immunized, and educated mothers. After accounting for other characteristics, children in the fourth and richest fifth of households are significantly[10] more likely to be immunized than children in the poorest fifth of households. There are no significant differences based on parents' education.

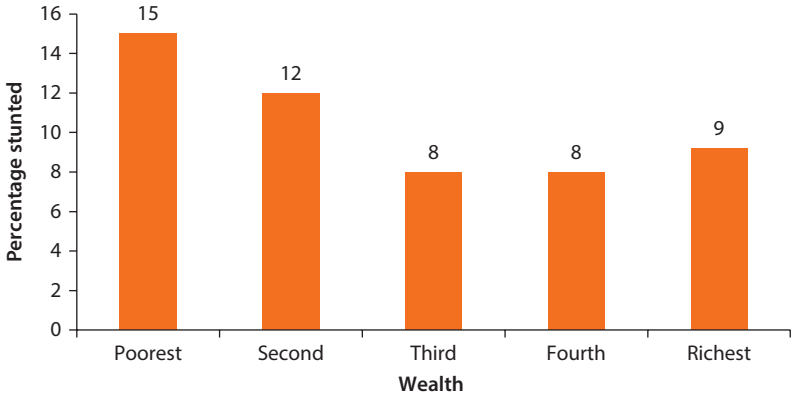
In terms of nutrition, there are also differences based on certain background characteristics. Female and male children have similar chances of being stunted. However, stunting is higher in the poorest (15 percent) and second poorest wealth quintiles of households (12 percent) than in the third, fourth, and richest wealth quintiles (8–9 percent) (figure 9.5). Although information is not available

Figure 9.4 Immunization Coverage of Children Aged 12–23 Months, by Mother's Education



Source: World Bank calculations based on Lebanon PAPFAM 2004.

Figure 9.5 Stunting by Wealth Level, Ages 0–4



Source: World Bank calculations based on Lebanon PAPFAM 2004.

on parents' education in the anthropometric data, information on household head's education is (and the head is likely to be one of the parents). Stunting decreases consistently with increasing household head education, dropping from 22 percent for children with illiterate household heads to 7 percent for children with secondary- or highly educated parents.

After accounting for other characteristics, children are significantly less likely to be stunted if they are from the third wealth level of households, as compared to the poorest households. In terms of height-for-age, children from the third, fourth, and richest fifths of households all have significantly higher height-for-age than children from the poorest fifth of households. The contrast between height-for-age and stunting suggests that while children in the higher levels of wealth do better on average, there is still a minority of children that faces a high chance of stunting. The chance of being stunted decreases and height-for-age increases with the household head's education. Having a preparatory-educated household head significantly decreases the chance of stunting, while having a secondary- or highly educated head significantly decreases stunting and increases height-for-age.

Cognitive, Social, and Emotional Development

Early childhood education has the greatest benefits for disadvantaged and vulnerable children. However, in Lebanon, it is children from the most advantaged backgrounds who are attending ECCE. Total net kindergarten enrollment rates for three-to six-year-olds are 96 percent in Mount Lebanon, 85 percent in Beirut, and 83 percent in Bekaa; however, they are 71 percent in the North, 73 percent in Nabatieh, and 61 percent in the South (Kaloustian 2012). This generally coincides with rates of poverty and income; the South and North have the highest poverty rates (Laithy, Abu-Ismail, and Hamdan 2008).

Children Face Unequal Opportunities for Healthy Development

Children in Lebanon face unequal opportunities for healthy development based on factors beyond their control. To measure the extent of inequality, the analysis calculates (a) the percentage of opportunities that needed to have been distributed differently for equality of opportunity to have occurred for each of the ECD indicators; and (b) the chance of whether these differences might have occurred by random variation (table 9.1). In Lebanon, all

Table 9.1 Percentage of Opportunities to Be Redistributed

	Dissimilarity index
Prenatal care	2.6
Fully immunized	18.4
Stunted	16.4

Source: World Bank calculations based on Lebanon Pan Arab Project for Family Health (PAPFAM) 2004.
Note: Given the very small sample sizes for mortality and the near-universal coverage of delivery care, these outcomes could not be modeled.

of the inequality observed might be due to chance, but the lack of statistical significance might also be due to relatively small sample sizes as well. Immunizations and stunting in particular show substantial inequality of opportunity.

Wealth and education make the largest contributions to children's unequal chances. Table 9.2 shows the different contributions of circumstances to inequality for different outcomes as percentages out of 100 percent. Wealth plays a particularly large role in immunizations and stunting, although differences may be random. Mother's education is particularly important for prenatal care. Father's education plays a particularly important role in immunizations. Household head's education contributes substantially to stunting. A child's gender contributes very little to inequality.

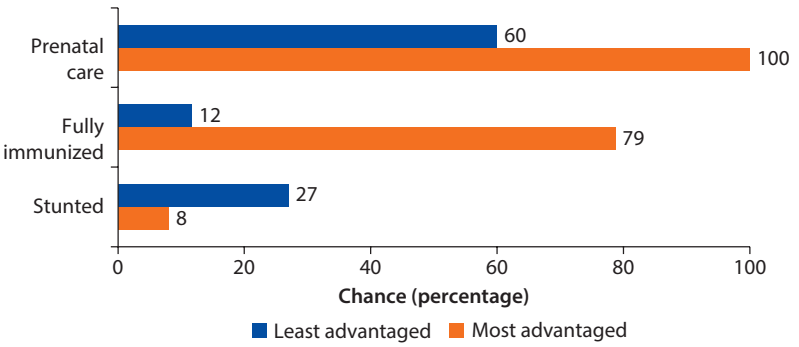
Children tend to be consistently advantaged or disadvantaged across a variety of dimensions of ECD and can face different life chances based on just a few characteristics. Early childhood is when cycles of poverty and inequality are transmitted across generations. If we observe a child who is from the poorest 20 percent of households and with uneducated parents (a least advantaged child) and compare that child to one who has parents with higher education and is from the richest 20 percent of households (a most advantaged child), we find that they have different chances of healthy ECD. Figure 9.6 presents the chances

Table 9.2 Contributions of Background Characteristics to Inequality
Percentage

	Wealth	*Woman's education*	*Partner's education*	*Head's education*	*Child's sex*
Prenatal care	24.0	46.3	29.7	n.a.	n.a.
Fully immunized	50.4	14.8	34.8	n.a.	n.a.
Stunted	45.5	n.a.	n.a.	54.4	0.1

Source: World Bank calculations based on Lebanon PAPFAM 2004
Note: Shapley decompositions of the dissimilarity index. n.a. = not applicable or not available.

Figure 9.6 Most Advantaged and Least Advantaged Simulations



Source: World Bank calculations based on Lebanon PAPFAM 2004.
Note: Given the very small sample sizes for mortality and the nearly universal coverage of delivery care, these outcomes could not be modeled.

(predicted chance) of different ECD indicators (based on the regressions) for these "least advantaged" and "most advantaged" individuals.

Children in Lebanon face very different opportunities for healthy development based on just a few background characteristics. Lebanon has universally high rates of use of skilled birth attendants, and infant and neonatal mortality cannot be modeled given the sample size and low rates. However, in terms of prenatal care, immunizations, and stunting, there are substantial differences in the opportunities children face to accumulate human capital and develop healthily. A least advantaged child has a 60 percent chance of receiving prenatal care, while a most advantaged child has a 100 percent chance—a 40 percentage point difference. While a least advantaged child has a 12 percent chance of being fully immunized, a most advantaged child has a 79 percent chance. In terms of stunting, a least advantaged child has a 27 percent chance of being stunted, while a most advantaged child has an 8 percent chance. Based on differences in these few characteristics, the most advantaged child is 6 times more likely to be fully immunized and a third as likely to be stunted.

Conclusions

Children in Lebanon have high chances of early health care (prenatal and delivery care) and low chances of dying in the first month or year of life. However, as they grow older, children face a number of threats to their development, including low immunization rates and a substantial chance of being stunted. Additionally, children face unequal chances of healthy early development based on their circumstances, with the poorest children and those with the least educated mothers particularly at risk. Children are also likely to face unequal chances to be school-ready, given differences in access to ECCE. More needs to be done to ensure that children can develop successfully and equitably throughout their early years. Additional and more frequent data on children's development in Lebanon could also play a crucial role in assessing other areas where children's development is threatened and tracking progress in addressing these gaps.

Annex 9A: The Data

The Data Set

The analysis utilizes cross-sectional data on the well-being of women and children collected in the Pan Arab Project for Family Health survey (PAPFAM) for 2004 in Lebanon. The PAPFAM survey has a household questionnaire that includes important background characteristics of individuals and families. It also has a questionnaire for ever-married women aged 15–49, which captures information on important components of ECD such as prenatal care, skilled assistance with the delivery of children, and children's immunizations. Weight and height data are collected for children under five years of age. The survey is nationally representative and includes data that allow for an analysis of the relationship between ECD and child and household indicators within Lebanon.

The Sample

The 2004 PAPFAM dataset for Lebanon sampled 5,532 households, 3,032 ever-married women aged 15–49, and 940 children younger than age five (anthropometric measures). The analysis in this note is weighted in order to be representative at the national level. The sample sizes reported (N) in each of the tables are based on the unweighted number of observations in the data.

Annex 9B: Indicators by Background Characteristics

Table 9B.1 Indicators by Background Characteristics

	Prenatal care	*Skilled attendant*	*Fully immunized*	*Died in first month*	*Died in first year*	*Stunted*	*Height-for-age (SD)*	*Percent of children*
Gender								
Male						10.7	0.14	50.4
Female						10.6	0.13	49.6
Wealth quintile								
Poorest	89.2	98.4	33.8			15.0	–0.34	21.7
Second	95.3	97.8	45.7			12.0	0.06	21.6
Third	95.9	97.6	29.5			8.2	0.30	23.0
Fourth	98.9	98.7	72.4			7.6	0.43	17.7
Richest	100.0	98.7	78.1			9.2	0.38	16.0
Woman's education								
Illiterate	80.1	98.0	16.2					5.1
Read/write	90.6	95.2	50.2					19.0
Primary	95.5	98.0	42.7					18.7
Preparatory	97.8	98.9	53.0					22.7
Secondary+	99.3	99.6	62.6					34.5
Partner's education								
Illiterate	82.3	96.6	51.5					5.4
Read and/or write	93.2	96.1	34.1					26.0
Primary	94.0	98.8	46.6					19.6
Preparatory	97.3	98.9	64.5					16.2
Secondary+	99.6	99.4	58.9					32.0
Head's education								
Illiterate						21.9	–0.39	5.9
Read and/or write						13.9	–0.16	4.8
Primary						12.7	0.00	33.6
Preparatory						9.5	0.13	21.9
Secondary						7.1	0.38	18.4
Higher education						6.9	0.45	15.0
Total	95.4	98.2	51.5	1.0	1.5	10.7	0.13	100.0
N (observations)	1,224	1,174	229	3,594	3,594	940	940	

Source: World Bank calculations based on Lebanon PAPFAM 2004.
Note: Indicators by background characteristics for neonatal and infant mortality are omitted due to small sample size and infrequency of deaths. Other blank cells indicate not applicable or not available. SD = standard deviation.

Annex 9C: Relationship between ECD Indicators and Background, When Accounting for Multiple Characteristics

Table 9C.1 Relationship between ECD Indicators and Multiple Background Characteristics

	Prenatal care	*Fully immunized*	*Stunted*	*Height-for-age*
Wealth—20% of households—compared to poorest				
Second				
Third	+		–	+
Fourth	+	+		+
Highest	+	+		+
Woman's education—compared to no education				
Read/write			n.a.	n.a.
Primary	+		n.a.	n.a.
Preparatory	+		n.a.	n.a.
Secondary+	+		n.a.	n.a.
Partner's education—compared to no education				
Read/write	+		n.a.	n.a.
Primary			n.a.	n.a.
Preparatory	+		n.a.	n.a.
Secondary+	+		n.a.	n.a.
Head's education—compared to no education				
Read/write	n.a.	n.a.		
Primary	n.a.	n.a.		
Preparatory	n.a.	n.a.	–	
Secondary	n.a.	n.a.	–	+
Higher education	n.a.	n.a.	–	+
Female	n.a.	n.a.		
P-value (model)	0.000	0.000	0.064	0.002
Observations (N)	1,053	229	940	940
R-squared				0.036
Pseudo R-squared	0.175	0.144	0.028	

Source: World Bank calculations based on Lebanon PAPFAM 2004.
Note: Given the very small sample sizes for mortality and the near-universal coverage of delivery care, these outcomes could not be modeled; ECD = early childhood development; n.a. = not applicable or not available.

Notes

1. Mortality rates are for children born 1–10 years prior to the survey.
2. Either a doctor or a nurse/midwife.
3. Either a doctor or a nurse/midwife.
4. As was true for prenatal care, delivery questions are asked about most recent live births in the last five years only. Since live births are likely to be associated with care by a health professional, the percentage of live births with a health professional is likely to overestimate the number of deliveries with a health professional.

5. The DPT vaccine is a combination vaccine that covers diphtheria, whooping cough (pertussis), and tetanus. Children must receive three doses to be fully immunized.
6. Children must receive three doses to be fully immunized against polio.
7. As with prenatal and delivery care, these questions were asked of the most recent live birth in the past five years.
8. More than 15 ppm of iodine in the salt.
9. Wealth is defined in terms of which 20 percent of households a child falls into, based on an asset (wealth) index of durable goods.
10. Throughout, we use a 5 percent level of significance.

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