My Childhood, My Future

Early Childhood Development in Djibouti

WORLD BANK GROUP

CHAPTER 5

Djibouti

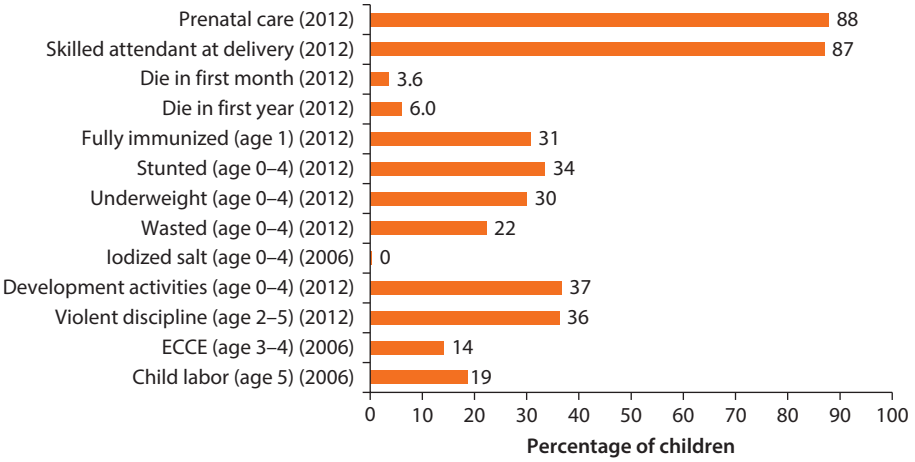
The State of Early Childhood Development in Djibouti

With a number of deficits in early childhood development (ECD), children in Djibouti are falling short of their full potential. Figure 5.1 summarizes the status of ECD in Djibouti. As the figure shows, Djibouti has moderate gaps in prenatal and delivery care; 88 percent of births received prenatal care and 87 percent had a skilled attendant at delivery. In the first month of life, 3.6 percent of children die, and in the first year of life, 6.0 percent of children die. Djibouti also has low immunization rates, with only 31 percent of children age 1 fully immunized. Malnutrition is a serious problem in Djibouti, where 34 percent of children are stunted, 30 percent are underweight, and 22 percent are wasted. Zero percent of children in Djibouti have access to adequately iodized salt, seriously jeopardizing their cognitive development. Social and emotional development is also low among children in Djibouti, with only 37 percent experiencing development activities and 36 percent of children being violently disciplined. Children are more likely to be engaged in child labor at age five (19 percent) than to attend early childhood care and education (ECCE) at ages three to four (14 percent).

This chapter presents an analysis of the status of ECD in Djibouti using a number of indicators (see box 5.1). The health status of children is examined through indicators of early mortality, prenatal care, having a trained attendant at birth, and immunizations. Children's nutritional status is measured by stunting (height-for-age), underweight (weight-for-age), and wasting (weight-for-height), as well as the availability of micronutrients, specifically iodine. To assess cognitive and social or emotional development, the analysis looks at the extent to which children are engaged in developmental learning activities, attendance in ECCE, whether children are violently disciplined, and whether children are engaged in child labor at age five. If more indicators were available and examined, they could provide an even richer picture of ECD in Djibouti.

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 5A, 5B, and 5C for additional information on the data

Figure 5.1 ECD Summary Indicators



Source: World Bank calculations based on Djibouti PAPFAM 2012 and Djibouti MICS 2006.
Note: ECCE = early childhood care and education; ECD = early childhood development.

Box 5.1 ECD Indicators Examined in Djibouti

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
Underweight/Weight-for-age
Wasting/Weight-for-height
Early childhood care and education
Parental development activities
Violent child discipline
Child labor

and these relationships). For the overall country context, see box 5.2. 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 Family Health Survey of 2012 and the Multiple Indicator Cluster Survey (MICS) from 2006. The data cover the various dimensions of early childhood from before a child is born up until the age of school entry (six years old, in Djibouti).

Survival, Health Care, and Nutrition

The first step in healthy ECD is simply surviving early childhood. In Djibouti, 1 in every 17 children dies by age one. As of 2012, infant mortality, dying in the first year of life, was 60 deaths per thousand births,[1] a rate that is more than twice

Box 5.2 Summary of Development Indicators in Djibouti

Djibouti is a lower-middle-income country with a gross domestic product per capita in 2012 of about $1,062 (in current US Dollars, table B5.2.1). Djibouti has an estimated population of 0.9 million, of which a third are under the age of 15. The average life expectancy at birth is 61 years, which compares poorly with other countries at this level of development. The primary gross enrollment rate in Djibouti was 70 percent in 2012. Overall, Djibouti ranks 164 out of 186 countries with comparable data in the 2012 Human Development Index.

Table B5.2.1 Djibouti's Socioeconomic Indicators

	1990	*2012*
Total population (millions)	0.6	0.9
% of population under 15	45	34
GDP per capita (current US Dollars)	$767	$1,062
Life expectancy at birth (years)	57	61
School enrollment, primary (% gross)	33	70

Sources: UNDP 2014; World Development Indicators.
Note: 2012 gross domestic product (GDP) is 2007 data.

the average for the Middle East and North Africa (MENA) region (24 per thousand) (UNICEF 2014). Most of infant mortality is neonatal mortality, deaths in the first month of life. As of 2012, the neonatal mortality rate in Djibouti was 36 deaths per thousand births. Early mortality represents the ultimate loss of human potential, and reducing under-five mortality rates by two-thirds from 1990 to 2015 is one of the Millennium Development Goals (MDGs). Djibouti has made limited progress in reducing neonatal and infant mortality over time; over the six years from 2006 to 2012, infant mortality decreased only slightly, from 67 deaths per thousand births (Ministry of Health and League of Arab States 2007) to 60 deaths per thousand births.

Addressing both early mortality and ECD begins during pregnancy and delivery. Delivery with a skilled attendant[2] is vital to reducing newborn mortality and morbidity. Prenatal care and delivery care are important components of achieving the MDGs. In Djibouti, 88 percent of mothers who had live births[3] had received prenatal care from a health professional, and 87 percent of the births were attended by a skilled health professional.[4,5] This is above both the MENA region average for both indicators (83 percent for prenatal care and 79 percent for skilled delivery) and the average for the least developed countries (UNICEF 2014). Although Djibouti is doing relatively well in early health care, especially for its level of income, there are still some births that receive no prenatal care and do not have skilled delivery care, putting these children and mothers at great risk.

Access to prenatal care and attended delivery in Djibouti has shown uneven improvements over time; in 2003, 67 percent of births received prenatal care and 61 percent of births were attended by a health professional (World Development Indicators). By 2006, these rates were 93 percent (prenatal care) and

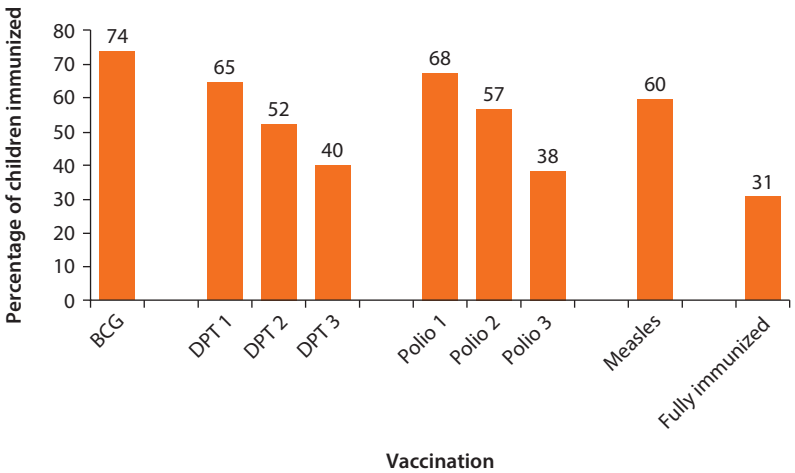
92 percent (delivery care). Rates in 2012, 88 percent for prenatal care and 87 for delivery care, therefore represent a slight decrease in early health care.

The full immunization of children plays an important role in reducing childhood diseases that can hamper growth or cause death. Yet, only a third (31 percent) of children age one in Djibouti are fully immunized. Children are considered fully immunized if they have received immunizations for all six major preventable childhood diseases: tuberculosis, diphtheria, whooping cough, tetanus,[6] polio,[7] and measles. They should be fully immunized by 12 months of age. Djibouti falls short of the level of immunization coverage that will allow for herd immunity,[8] with only 31 percent of children 12–23 months fully immunized.

A variety of different vaccines are underutilized (figure 5.2). Measles vaccines have only 60 percent coverage. Children are often not receiving all the doses of DPT (diphtheria, pertussis, tetanus) or polio vaccines, with only around 40 percent of children receiving the third doses of each vaccine. Most children are, however, receiving some vaccinations, which provides contact with the health care system and the opportunity to readily achieve fuller coverage by following up on multiple immunizations.

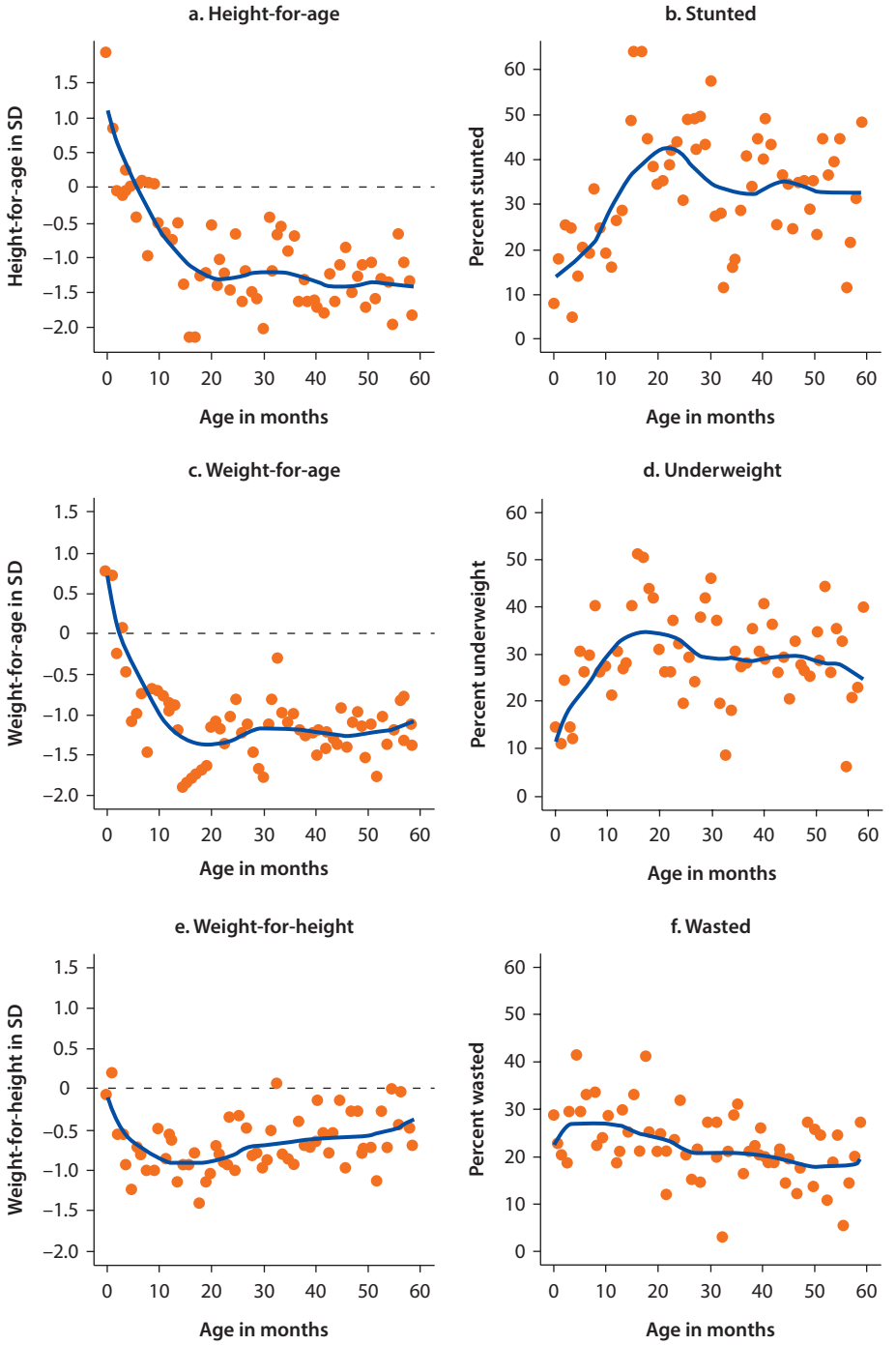
In terms of nutrition, children in Djibouti start their lives on fairly healthy footing; however, over the first two years of life, they experience a substantial falling off from healthy growth. Figure 5.3 shows how Djiboutian children fare in terms of growth compared to a healthy reference population.[9] One-third of children in Djibouti are stunted, 30 percent are underweight, and 33 percent are wasted as of 2012. Up through around the eighth month of life, children are, on average, at or above the height-for-age and weight-for-age of the reference population, but fall below healthy weight-for-height within the first few months of life. Up through 18 months, there is faltering in height-for-age and weight-for-age

Figure 5.2 Percentage of Children Aged 12–23 Months Immunized, by Vaccination



Source: World Bank calculations based on Djibouti MICS 2012.
Note: BCG = Bacillus Calmette-Guérin (tuberculosis vaccine); DPT = diphtheria, pertussis, tetanus.

Figure 5.3 Average Height-for-Age, Weight-for-Age, and Weight-for-Height Compared to Healthy Reference Population in Standard Deviations and Percentage Stunted, Underweight, and Wasted, by Age in Months, Ages 0–4 Years



Source: World Bank calculations based on Djibouti PAPFAM 2012.
Note: SD = standard deviations. Most interviews took place in June, July, and August, so those would be "month zero."

that brings the average far below the healthy reference population. Thereafter, the average remains below the healthy reference population by at least 1 SD, generally fluctuating between -1 and -1/2 SD.

The trends in stunting and being underweight are similar, with low stunting and underweight among young children (but fairly high wasting), and rising rates of stunting and underweight from birth through 20 months of age. Stunting peaks at around 50 percent of children age 20 months, and underweight peaks at around 35 percent of children age 20 months. While stunting falls slightly as children age, underweight and wasting are fairly level, and all remain around 20–30 percent of children through age five.

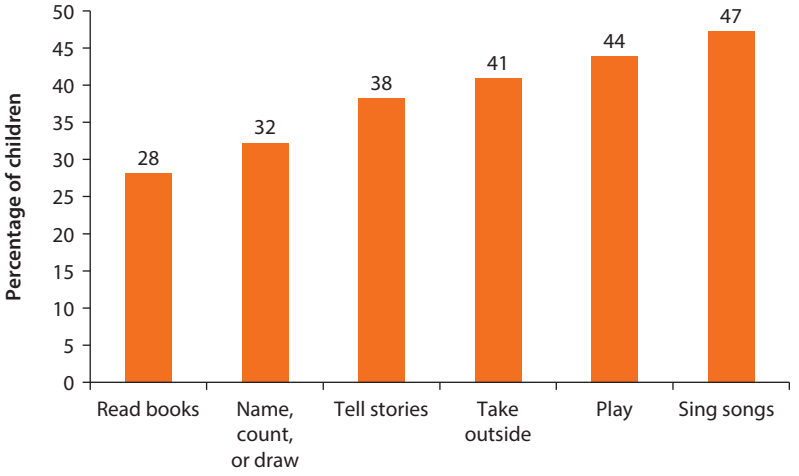
A major risk to children's cognitive development in Djibouti is lack of adequately iodized salt in their households. Micronutrients such as iron, vitamin A, zinc, and iodine play an important role in healthy physical and cognitive development. Iodized salt is the primary means for delivering iodine to children. In Djibouti, almost 100 percent of children under the age of five live in a household that does not have sufficiently iodized salt.[10]

Social, Emotional, and Cognitive Development

Although it has been proven that play and interaction are important components of ECD, children in Djibouti are missing out on important opportunities for psychosocial growth. In the Djibouti 2012 PAPFAM survey, caretakers of children ages 0–4 were asked whether adults in the household had engaged in any of six different activities that support child development.[11] Only a third of children (37 percent) experienced four or more development activities. While all the activities are important to social and emotional development, reading and naming, counting, and drawing have important educational and cognitive components. However, the activities of singing songs, playing, and being taken outside were most commonly observed (figure 5.4), with 41–47 percent of children having experienced each of these activities. The least frequently observed activity was reading books (or picture books)—28 percent of children. Additionally, only 32 percent of children were engaged in naming, counting, or drawing.

Evidence has shown that ECCE improves cognition and socioemotional development, with benefits that can last a lifetime. In Djibouti as of 2006, only 14 percent of children ages three and four attend an early childhood education program. The MENA region generally has low early childhood attendance rates, with gross enrollment in pre-primary education at 27 percent (World Development Indicators),[12] and Djibouti lags behind the regional average. There are more young children ages three to four attending some form of ECCE than older children attending pre-primary. For children ages five to six, rates of pre-primary school attendance are around 6 percent. This suggests that many children attending ECCE at three to four are attending programs other than pre-primary. In Djibouti, in 2006 the primary entry rate was 64 percent (Ministry of Health and League of Arab States 2007). Around a tenth (9 percent) of children in the first year of primary were previously in pre-primary school—some children may be entering school late, but are still attending pre-primary.

Figure 5.4 Percentage of Children Experiencing Different Development Activities, by Activity



Source: World Bank calculations based on Djibouti PAPFAM 2012.

Other challenges that risk hindering the healthy development of children in Djibouti are violent discipline[13] and early child labor. Over a third (36 percent) of children ages two to five in Djibouti have experienced some form of violent child discipline as of 2012. Disciplining children is an important part of child rearing. However, research has found that violent discipline negatively impacts the physical, psychological, and social development of children (UNICEF 2010). Additionally, as of 2006, 19 percent of five-year-old children in Djibouti engaged in some type of child labor in the week preceding the survey—working for someone not a member of the household, doing household chores or other family work.[14] Child labor, engaging in work or chores, can be particularly dangerous for young children. It also may hamper their ability to successfully transition to school. The majority of children were engaged in chores (12 percent of five-year-olds) but some were engaged in family work (2 percent of five-year-olds) or work for others (8 percent of five-year-olds). Most of the work for others was unpaid, with 7 percent of five-year-olds doing unpaid work and only 1 percent doing paid work.

Key Factors Affecting Early Childhood Development

Health and Nutrition

A number of background characteristics at the child, family, and community levels affect ECD outcomes: gender, parents' education, household socioeconomic status (wealth),[15] 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.

The chances that children die in the first month or year of life have complex relationships with children's background. Male children are more likely to die

early than female children, but this is a pattern that is common globally due to genetic factors (Hill and Upchurch 1995). The relationship of early mortality with wealth and education does not follow a clear systematic pattern, and there are also no differences by region or urban versus rural. When accounting for multiple characteristics, the relationship between characteristics and early mortality was not significant.[16]

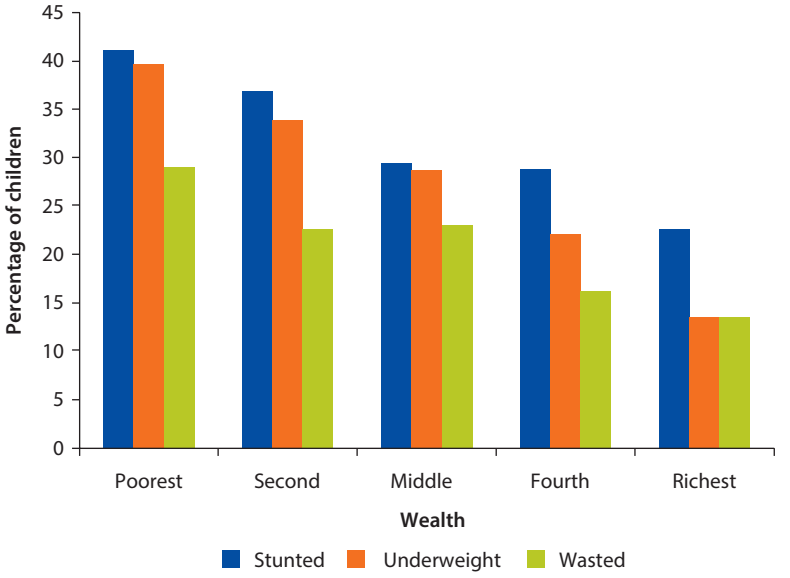
Although there were no associations with early mortality, the use of prenatal care is associated with wealth and education. For instance, while 68 percent of births in the poorest fifth of households received prenatal care, 98 percent of births from the fourth and richest wealth levels did so. Mothers with no education had an 84 percent chance of prenatal care, while mothers with basic education had a 97 percent chance, and mothers with a secondary or higher education a 98 percent chance. There are also large differences based on residence in the use of prenatal care, which likely represent differences in access to health infrastructure. While 96 percent of births in urban areas received prenatal care, just two-thirds (67 percent) of births in rural areas received prenatal care. Access to prenatal care is also lower in other districts (74 percent) than Djibouti proper (95 percent).

After accounting for other characteristics, living in a rural area significantly decreased the chance of receiving prenatal care. A mother having primary as compared to no education significantly increased the probability of prenatal care, as did a father having primary or secondary education. As compared to the lowest wealth level, some of the other, higher wealth levels had significantly higher chances of prenatal care.

There is an even stronger wealth gradient in accessing skilled birth attendants than for prenatal care, with 58 percent of births from the poorest households having skilled attendants, compared to almost 100 percent of births from the richest households. Similar patterns occurred by parents' education. Rural births were also less likely to have skilled birth attendants (55 percent) than urban births (98 percent). Taking into consideration other characteristics, there were no significant differences based on mother's education in the chances for delivery with a skilled attendant, but there were significant differences for father's education, with more educated fathers increasing the chances of skilled delivery. There were also substantial wealth and geographic differences. Births in the second through richest 20 percent of households in terms of wealth were more likely to have skilled delivery attendants. Births in rural areas were significantly less likely to have a trained attendant.

Access to immunization varies substantially by wealth, with rates of 17–26 percent for the three lowest wealth levels compared to 43–45 percent for the top two wealth levels. Immunization—which should be a widely available public health service—instead shows large disparities based on families' wealth.[17] There are some differences by education, with more educated parents generally more likely to immunize their children. There are only small differences in immunization based on place of residence or region, with slightly higher rates of immunization in other districts (36 percent) than in Djibouti proper (28 percent). After accounting for other characteristics, children in Djibouti were significantly less

Figure 5.5 Percentage of Children Aged 0–4 Years Stunted, Underweight, or Wasted, by Wealth Level



Source: World Bank calculations based on Djibouti MICS 2006.

likely to be immunized than children in other districts. Children with more educated fathers and from the top two wealth levels were also significantly more likely to be immunized.

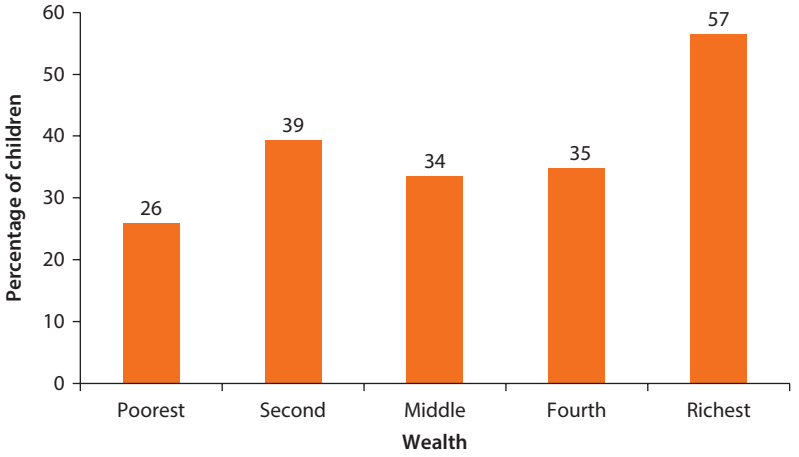
While malnutrition threatens all children, poorer children and those living in rural areas are more likely to be malnourished. In Djibouti, 41 percent of children from the poorest fifth of households compared to 23 percent from the richest fifth of households are stunted (figure 5.5). Being underweight or wasted likewise decreases with wealth. Rates of stunting are higher in rural areas (42 percent) than urban areas (30 percent), and higher in other districts (39 percent) than Djibouti proper (30 percent). Similar patterns are observed for being underweight or wasted. Having a secondary educated mother or father decreases the chances of malnutrition.

Even after accounting for other background characteristics, wealth shows a strong relationship with malnutrition. The chances of being stunted significantly decreased at the highest wealth level. The chances of being underweight, as well as being wasted, are lower in the fourth and richest levels compared to the poorest 20 percent of households.

Social, Emotional, and Cognitive Development

Social, emotional, and cognitive development are related to the wealth level of the child's household, parents' education, and the location of the household. Poorer children, from the lower four wealth levels, are less likely to experience at least four development activities than children from the richest fifth of

Figure 5.6 Percentage of Children Experiencing at Least Four Development Activities, by Wealth Level



Source: World Bank calculations based on Djibouti MICS 2012.

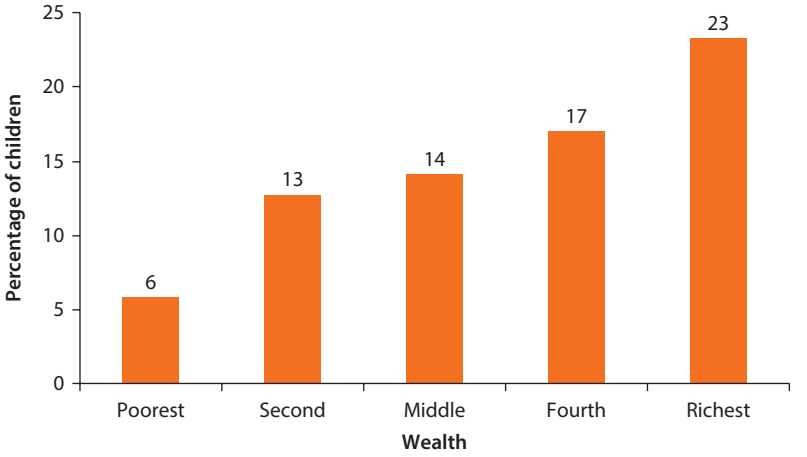
households (figure 5.6). Children in rural areas and other districts are also less likely to experience development activities than children in urban areas and Djibouti proper. Children with uneducated mothers have only a 33 percent chance of experiencing development activities, compared to a 51 percent chance for children with mothers with a secondary or higher education; similar patterns are observed for fathers. Taking into consideration multiple characteristics, children living in Djibouti proper as compared to other districts, and children in the richest as compared to poorest wealth level were significantly more likely to experience development activities.

Among three-to-four-year-olds, only 6 percent attend ECCE among the poorest fifth of households, while 23 percent attend among the richest fifth of households (figure 5.7). The greatest benefits from ECCE are likely to be for the poorest and most vulnerable children, yet they have the least access. This situation further compounds differences in young children's early cognitive and socioeconomic experiences. Taking into account other characteristics, only being in Djibouti proper as compared to other districts significantly increases the chance of attending ECCE.

Violent discipline shows a complex relationship with background characteristics. The rate of violent discipline is slightly lower for children in the poorest household, but varies across the second through richest wealth levels, with similar fluctuations observed by education. It is higher among children from urban households (42 percent) than in rural areas (20 percent).[18] Taking into consideration multiple characteristics, only rural children have significantly lower chances of violent discipline.

Child labor is highest among children from the second poorest (31 percent) and poorest fifth of households (23 percent), and lowest for children from the

Figure 5.7 Percentage of Children Aged 3–4 Years Attending ECCE, by Wealth Level



Source: World Bank calculations based on Djibouti MICS 2006.

richest fifth of households (7 percent). Children also engage in labor in both urban and rural settings, although rates are higher for rural children. The lower rate of child labor in Djibouti proper as compared to other districts is statistically significant, even after accounting for other factors. After accounting for other factors, children from the richest fifth of households are less likely to be engaged in child labor than children from the poorest fifth of households. However, children with mothers with secondary education are more likely to be engaged in child labor.

Children Face Unequal Opportunities for Healthy Development

Children in Djibouti 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 5.1).

For prenatal and delivery care, 6–10 percent of opportunities for early health care would have to be distributed differently for equality of opportunity to have prevailed. There is also substantial inequality in immunizations and stunting, but this could be due to chance. There is inequality in terms of early cognitive and socioemotional development; inequality is particularly high for ECCE, but differences could be due to chance. Differences in development activities are high, with 13.9 percent of opportunities needing to be redistributed, and this is not due to chance. Violent discipline and child labor also show substantial inequality.

Table 5.1 Percentage of Opportunities to Be Redistributed

	Dissimilarity index
Prenatal care	6.4**
Skilled delivery	9.6***
Fully immunized	22.2
Stunted	9.6
Development activities	13.9*
Violent discipline	11.6
ECCE	34.6
Child labor	23.2

Source: World Bank calculations based on Djibouti PAPFAM 2012 and Djibouti MICS 2006.
Note: Neonatal and infant mortality not modeled given statistical insignificance of overall regression models. Significance level: * = chance < 5%, ** = chance < 1%, *** = chance < 0.1%. ECCE = early childhood care and education.

Table 5.2 Contributions of Background Characteristics to Inequality
Percentage

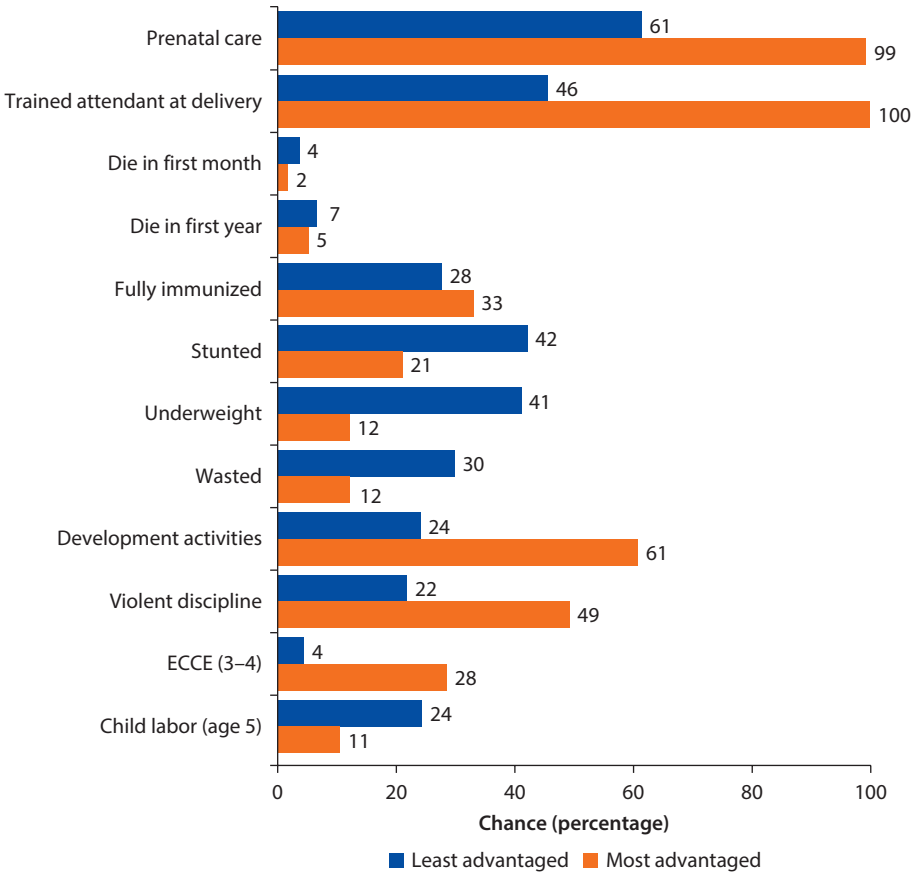
	Wealth	*Mother's education*	*Father's education*	*Rural*	*Region*	*Child's sex*
Prenatal care	28.8	6.3	10.2	32.4	22.2	n.a.
Skilled delivery	30.2	4.4	9.2	37.5	18.7	n.a.
Fully immunized	40.6	2.9	28.1	3.9	22.0	2.6
Stunted	52.9	2.7	12.0	21.4	10.7	0.2
Development activities	13.4	8.9	3.5	8.7	64.2	1.2
Violent discipline	36.7	11.7	13.8	10.6	27.0	0.3
ECCE	21.3	21.3	32.4	3.5	20.9	0.5
Child labor	35.3	6.1	22.4	0.7	31.7	3.8

Source: World Bank calculations based on Djibouti PAPFAM 2012 and Djibouti MICS 2006.
Note: Shapley decompositions of the dissimilarity index. n.a. = not applicable.

Wealth, parents' education, and geographic differences all contribute to children's unequal chances. Table 5.2 shows the different contributions of circumstances to inequality for different outcomes as percentages. Wealth plays a particularly large role in early health and nutrition, contributing approximately a third to a half of inequality for each of these measures. Parents' education is particularly important for inequality in ECCE. Rural versus urban differences make a particularly large (around a third) of the contributions to inequality in prenatal and delivery care. Regional differences matter for almost all outcomes, but especially for inequality in development activities. A child's sex contributes very little to inequality.

Children tend to be consistently advantaged or disadvantaged across a variety of different dimensions of ECD, and can face very 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 lives in rural other districts, in the poorest 20 percent of households, and with uneducated parents (a least advantaged child) and compare that child to one

Figure 5.8 Most Advantaged and Least Advantaged Simulations



Source: World Bank calculations based on Djibouti MICS 2006.
Note: ECCE = early childhood care and education.

who has parents with higher education, is from the richest 20 percent of households, and lives in urban Djibouti proper (a most advantaged child), we find that they have very different chances of healthy ECD. Figure 5.8 presents the chances of different ECD indicators for these "least advantaged" and "most advantaged" individuals.

On almost every indicator, the least advantaged child faces a poorer chance for healthy development. Comparing the least and most advantaged, the gap in prenatal care is 38 percentage points, and the gap in having a trained attendant at delivery is 54 percentage points. The least advantaged child is more likely to die in the first month or year of life. The least advantaged child is 5 percentage points less likely to be immunized, 21 percentage points more likely to be stunted, 29 percentage points more likely to be underweight, and 18 percentage points more likely to be wasted. There is a 37 percentage point gap in development activities, with the most advantaged child being more than twice as likely to experience these activities. The largest relative difference is in ECCE

attendance, where the most advantaged child is seven times more likely to attend ECCE than the least advantaged child. The least advantaged child is also more than twice as likely to be engaged in child labor, and slightly less likely to be violently disciplined.

Conclusions

Children in Djibouti face a number of obstacles to achieving their full potential for early development. Although prenatal care and skilled delivery care show only moderate gaps in coverage, neonatal and infant mortality are high. The low rate of immunization coverage, with less than a third of children fully immunized, presents a substantial threat to children's health. Malnutrition is common in Djibouti, with a third of children stunted. Children are at great risk for impaired cognitive development due to the near-zero rate of iodized salt. Children have similar chances of experiencing development activities as being violently disciplined, and more likely to engage in child labor at age five than attend ECCE. As well as substantial threats to their early development, children face unequal chances of attaining their full potential based on the circumstances into which they are born. Substantial inequality was observed across all the dimensions of ECD, with a variety of characteristics contributing to inequality. More must be done to ensure children have equal chances to develop to their full potential.

Annex 5A: The Data

The Data Set

The analysis utilizes cross-sectional data on the well-being of women and children collected in the 2006 MICS for Djibouti and the 2012 PAPFAM. The surveys are nationally representative, and include data that allows for an analysis of the relationship between early childhood development (ECD) and child and household indicators. See Ministry of Health and League of Arab States (2007) for additional information in the final report on the 2006 MICS survey. See Ministry of Health, Institute of Statistics and Demographic Studies and League of Arab States (2012) for additional information in the final report on the 2012 PAPFAM survey.

The Sample

The 2006 MICS dataset for Djibouti sampled 4,888 households, 6,020 ever-married women ages 15–49, and 2,565 children younger than 5 (questioning their mothers or caretakers). The 2012 PAPFAM dataset for Djibouti sampled 5,563 households, 3,304 ever-married women ages 15–49, and 3,205 children younger than 5 (questioning their mothers or caretakers). 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 5B: Indicators by Background Characteristics

Table 5B.1 Indicators by Background Characteristics

	Prenatal care	*Trained attendant at birth*	*Neonatal mortality*	*Infant mortality*	*Fully immunized at age 1*	*Stunted*	*Height-for-age (SD)*	*Underweight*	*Weight-for-age (SD)*	*Wasted*	*Weight-for-height (SD)*	*Four development activities*	*Violent discipline (2–5)*	*ECCE (3–4)*	*Child labor (age 5)*	*Percent of children (0–4)*	*Percent of children (0–4)*
Year	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2006*	*2006*	*2006*	*2012*
Gender																	
Male			4.0	6.8	31.7	33.7	−1.05	31.1	−1.19	23.6	−0.81	38.2	38.2	12.4	18.1	53.3	50.9
Female			3.2	5.1	29.7	33.3	−1.11	28.6	−1.08	21.0	−0.60	35.0	33.7	16.0	19.1	46.7	49.1
Wealth																	
Poorest	68.4	58.2	3.5	5.1	25.9	41.1	−1.36	39.7	−1.50	29.0	−0.93	26.0	24.5	5.8	22.6	26.1	31.2
Second	91.3	95.2	3.4	6.6	24.4	36.9	−1.24	33.8	−1.35	22.6	−0.93	39.4	42.9	12.8	30.6	21.6	20.5
Middle	94.7	98.9	4.0	5.1	16.9	29.4	−0.99	28.6	−1.10	23.0	−0.66	33.7	37.2	14.2	14.8	17.5	18.0
Fourth	97.9	99.7	4.2	8.1	42.7	28.8	−0.93	22.0	−0.84	16.1	−0.46	34.9	39.2	17.0	15.5	17.2	16.1
Richest	97.6	99.6	2.9	5.4	44.8	22.5	−0.54	13.4	−0.43	13.4	−0.23	56.6	47.2	23.3	7.4	17.1	14.1
Mother's education																	
None	84.3	83.5	3.9	6.4	28.7	34.3	−1.14	31.5	−1.22	23.1	−0.81	32.9	36.1	10.3		61.1	65.2
Basic	97.3	96.6	3.0	4.2	39.4	31.5	−0.93	24.0	−1.06	19.9	−0.65	41.9	51.8	12.9		18.7	11.2
Secondary+	97.9	98.9	2.0	4.9	32.0	26.9	−0.76	18.6	−0.49	14.5	−0.07	51.0	39.6	27.8		17.9	8.7
Missing/DK						35.8	−1.13	33.9	−1.22	25.1	−0.64		22.6				14.9
Nonstandard														13.9		2.3	
Father's education																	
None	82.1	80.2	3.6	5.8	21.5	35.4	−1.18	32.5	−1.29	24.2	−0.86	34.5	35.0	7.7		36.5	51.9
Basic	95.9	95.9	4.6	7.1	45.8	36.3	−1.18	30.1	−1.17	21.5	−0.58	39.7	35.2	13.7		16.7	10.1
Secondary+	98.4	99.5	3.7	6.4	34.7	24.2	−0.70	18.7	−0.67	15.9	−0.42	40.2	50.5	21.9		32.3	18.3
Missing/DK	88.0	94.6	1.1	3.4	63.1	35.8	−1.14	33.4	−1.17	23.8	−0.63	37.6	26.9	11.2		1.9	19.7
Father not in household														14.0		10.8	
Nonstandard														14.0		1.8	

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Table 5B.1 Indicators by Background Characteristics *(continued)*

	Prenatal care	*Trained attendant at birth*	*Neonatal mortality*	*Infant mortality*	*Fully immunized at age 1*	*Stunted*	*Height-for-age (SD)*	*Underweight*	*Weight-for-age (SD)*	*Wasted*	*Weight-for-height (SD)*	*Four development activities*	*Violent discipline (2–5)*	*ECCE (3–4)*	*Child labor (age 5)*	*Percent of children (0–4)*	*Percent of children (0–4)*
Year	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2006*	*2006*	*2006*	*2012*
Women's education																	
No school															18.4		
Some basic															13.6		
6–9 years															19.6		
Some or complete secondary															45.7		
Above secondary																	
Partner's education																	
No school															21.0		
Some basic															20.4		
6–9 years															11.8		
Some or complete secondary															26.5		
Above secondary															25.2		
Missing															18.3		

table continues next page

Table 5B.1 Indicators by Background Characteristics *(continued)*

	Prenatal care	*Trained attendant at birth*	*Neonatal mortality*	*Infant mortality*	*Fully immunized at age 1*	*Stunted*	*Height-for-age (SD)*	*Underweight*	*Weight-for-age (SD)*	*Wasted*	*Weight-for-height (SD)*	*Four development activities*	*Violent discipline (2–5)*	*ECCE (3–4)*	*Child labor (age 5)*	*Percent of children (0–4)*	*Percent of children (0–4)*
Year	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2012*	*2006*	*2006*	*2006*	*2012*
Residence																	
Urban	95.2	98.4	3.5	6.3	30.4	30.0	−0.96	26.0	−1.01	20.2	−0.63	41.1	42.9	14.4	18.1	98.8	71.5
Rural	66.6	54.9	3.9	5.1	31.7	42.3	−1.38	39.7	−1.46	27.5	−0.90	23.4	19.5	7.6	27.5	4.2	28.5
Region																	
Djibouti	95.8	98.8	3.4	6.3	28.0	29.8	−0.97	25.4	−0.98	19.5	−0.59	43.6	43.3	15.6	16.3	85.5	60.3
Other districts	74.2	67.4	3.9	5.4	35.9	39.2	−1.25	36.8	−1.38	26.5	−0.88	24.4	25.3	7.1	28.0	14.5	39.7
Governorate																	
Djibouti	95.8	98.8	3.4	6.3	28.0	29.8	−0.97	25.4	−0.98	19.5	−0.59	43.6	43.3				60.3
Ali Sabieh	62.4	75.6	2.2	3.3	56.4	35.6	−1.10	28.9	−1.10	23.4	−0.82	13.6	34.0				9.3
Dikhil	93.7	78.1	5.2	5.9	36.4	36.2	−1.25	35.1	−1.36	24.8	−0.78	18.5	36.3				9.0
Tadjourah	70.4	57.7	4.1	5.5	19.0	45.1	−1.61	41.9	−1.54	23.8	−0.77	31.9	19.5				10.7
Obock	64.2	59.1	5.5	7.9	51.2	44.6	−1.37	44.9	−1.69	31.6	−1.22	37.4	18.9				4.7
Arta	73.9	63.3	2.5	5.0	32.3	34.2	−0.75	35.9	−1.29	35.2	−1.07	25.1	14.3				6.0
Total	87.9	87.4	3.6	6.0	30.7	33.5	−1.08	29.9	−1.14	22.3	−0.70	36.6	36.2	14.1	18.6	100.0	100.0
N (observations)	1,944	1,943	3,394	3,394	398	3,361	3,361	3,438	3,438	3,346	3,346	1,808	1,051	903	606		

Source: World Bank calculations based on Djibouti PAPFAM 2012 and Djibouti MICS 2006.
Note: Blank cells indicate not applicable or not available. ECCE = early childhood care and education; SD = standard deviations.

Annex 5C: Relationship between ECD Indicators and Background, When Accounting for Multiple Characteristics

Table 5C.1 Relationship between ECD Indicators and Multiple Background Characteristics

	Neonatal mortality	*Infant mortality*	*Prenatal*	*Delivery*	*Fully immunized*	*Stunted*	*Underweight*	*Wasted*	*Development indicators*	*Violent discipline*	*ECCE*	*Child labor*
Rural			–	–						–		
Djibouti proper—compared to other districts					–				+		+	–
Wealth—20% of households—compared to poorest												
Second			+	+								
Third				+								
Fourth			+	+	+		–	–				
Richest				+	+	–	–	–	+			–
Female												
Mother's education—compared to illiterate												
Basic education		–	+									
Secondary +												+
Missing/Don't know												
Father's education—compared to illiterate												
Basic education			+	+	+							
Secondary +			+	+								
Missing/DK			–		+							
Observations (N)			1,944	1,943	398	3,361	3,438	3,346	1,808	1,005	900	603
Pseudo R-squared			0.225	0.455	0.120	0.020	0.037	0.020	0.051	0.061	0.069	0.082
P-value (model)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.001

Source: World Bank calculations based on Djibouti PAPFAM 2012 and Djibouti MICS 2006.
Note: Blank cells indicate no statistically significant relationship. Other education categories (not in household, nonstandard curriculum) were included for ECCE and child labor models, but were not significant.
+ = chance <5% and positive; – = chance <5% and negative; ECCE = early childhood care and education; ECD = early childhood development.

Notes

1. Both infant and neonatal mortality rates are calculated based on deaths one to five years (from 2010–2006) preceding the PAPFAM survey.
2. A doctor, nurse, or midwife.
3. The survey asks women about prenatal care for live births in the past two years only. Since live births are likely to be associated with prenatal care, the percentage of births not receiving prenatal care is likely to be an underestimate of the percentage of pregnancies not receiving prenatal care.
4. Either a doctor or a nurse/midwife.
5. As was true for prenatal care, delivery questions are asked about live births 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.
6. The DPT vaccine is a combination vaccine that covers diphtheria, whooping cough (pertussis), and tetanus. Children must receive three doses to be fully immunized.
7. Children must receive three doses to be fully immunized against polio.
8. Herd immunity occurs when even unvaccinated individuals in the population (the "herd") are protected against illness because the disease can no longer spread. This is achieved when around 90–95 percent of infants are vaccinated.
9. The units for height-for-age, weight-for-age, and weight-for-height are how much Djiboutian children are, on average, different from the reference population in terms of standard deviations (SD).
10. More than 15 ppm of iodine in the salt.
11. The six activities are: (1) read books or look at picture books with the child; (2) tell stories to the child; (3) sing songs with the child; (4) take the child outside the home, compound, yard, or enclosure; (5) play with the child; and (6) spend time with the child naming, counting, and/or drawing things.
12. Rate is based on 2011 data.
13. Per the MICS definitions, violent child discipline is based on discipline by anyone in the household within the last month and includes: psychological aggression (shouted, yelled, or screamed at the child; called the child dumb, lazy, or another name like that); physical punishment (shook the child; spanked, hit, or slapped the child on the bottom with a bare hand; hit the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick, or other hard object; hit or slapped the child on the hand, arm, or leg); and severe physical punishment (hit or slapped the child on the face, head, or ears; beat the child with an implement; hit over and over as hard as one could).
14. The questions were: (1) During the past week, did (child) do any kind of work for someone who is not a member of this household?; (2) During the past week, did (child) help with household chores such as shopping, collecting firewood, cleaning, fetching water, or caring for children?; (3) During the past week did (child) do any other family work (on the farm or in a business or selling goods in the street)?
15. Wealth is defined in terms of which 20 percent of households a child falls into, based on an asset (wealth) index of durable goods.
16. A 5 percent level of statistical significance is used throughout.

17. In the regression model, no differences were statistically significant, likely due to a relatively small sample of one-year-olds.
18. In the regression models, there were not any statistically significant predictors of development activities or violent discipline except for the father being missing, increasing the chance of violent discipline.

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