

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Countries, Data Sources, Survey Years, and Sample Sizes of the Final Analytic Sample

Region	Income level	Survey year	Country	Data source (phase/round)	Sample size
Central Asia	Lower-middle	2018	Kyrgyz Republic	MICS6	1,279
East Asia and Pacific	Lower-middle	2016	Timore Leste	DHS7	805
		2017	Lao PDR	MICS6	4,301
		2018	Mongolia	MICS6	2,309
		2018-2019	Kiribati	MICS6	767
		2019-2020	Samoa	MICS6	902
Latin America and the Caribbean	Lower-middle	2016-2017	Haiti	DHS7	1,418
		2019	Honduras	MICS6	3,247
Middle East and North Africa	Lower-middle	2018	Tunisia	MICS6	1,395
		2018-2019	Algeria	MICS6	5,597
		2019-2020	State of Palestine	MICS6	2,151
South Asia	Lower-middle	2016-2020	Pakistan	MICS6	43,522
		2019	Bangladesh	MICS6	8,873
		2019	Nepal	MICS6	2,692
Sub-Saharan Africa	Low	2015	Mali	MICS5	5,357
		2016	Uganda	DHS7	1,596
		2016-2017	Burundi	DHS7	2,315
		2017	Sierra Leone	MICS6	3851
		2017	Togo	MICS6	1,766
		2017-2018	Congo DR	MICS6	7,649
		2018	Madagascar	MICS6	4,425
		2018	The Gambia	MICS6	3,780
		2018-2019	Central African Republic	MICS6	3,090
		2018-2019	Guinea-Bissau	MICS6	2716
		2019	Chad	MICS6	8,688
		2019-2020	Malawi	MICS6	5,247
		2019-2020	Rwanda	DHS7	1,447
	Lower-middle	2011-2014	Kenya	MICS5	795

2014	Cameroon	MICS5	2,380
2014	Eswatini	MICS5	780
2014-2015	Congo	MICS5	3,148
2015	Mauritania	MICS5	3,491
2016	Cote d'Ivoire	MICS5	3,080
2016	Guinea	MICS5	2,722
2016-2017	Nigeria	MICS5	10,225
2017-2018	Benin	DHS7	3,794
2017-2018	Ghana	MICS6	6,154
2018	Lesotho	MICS6	905
2019	Sao Tome and Principe	MICS6	662
2019	Senegal	DHS7	1,985
2019	Zimbabwe	MICS6	2,110

Note. MICS = Multiple Indicator Cluster Surveys; DHS = Demographic and Health Surveys; Lao PDR = Lao People's Democratic Republic; Congo DR = Democratic Republic of Congo. For Kenya, data from Nyanza province (MICS 2011) was excluded because a different set of 18 ECDI items were collected.

eTable 2. Pairwise Correlation of 17 Correlates

	Sanitation	Water source	Child diarrhea	Child fever	Child cough	Maternal stimulation	Child books at home	Toys at home	ECE attendance	Birth registration	Child supervision	Maternal education	Maternal age	Maternal marital status	Household wealth	Number of children	Place of residence
Sanitation	1.00																
Water source	0.81***	1.00															
Child diarrhea	0.00	0.00	1.00														
Child fever	0.00	0.00	0.22***	1.00													
Child cough	0.00	0.00	0.19***	0.30***	1.00												
Maternal stimulation	0.00	0.00	0.01***	0.02***	0.02***	1.00											
Child books at home	0.01***	0.00	0.02***	0.02***	0.02***	0.02***	1.00										
Toys at home	0.01***	0.00	0.05***	0.06***	0.05***	0.02***	0.05***	1.00									
ECE attendance	0.02***	0.01**	0.00	0.00	-0.01*	0.02***	0.02***	0.00	1.00								
Birth registration	0.02***	0.02***	0.04***	0.04***	0.04***	0.02***	0.01***	0.03***	0.01***	1.00							
Child supervision	0.00	0.00	0.05***	0.07***	0.04***	0.02***	0.03***	0.04***	0.02***	0.04***	1.00						
Maternal education	0.01**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02***	0.00	0.00	1.00					
Maternal age	0.00	0.00	0.00	0.00	0.00	0.01***	0.00	0.00	-0.01**	0.00	0.00	0.69***	1.00				
Maternal marital status	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01**	-0.01*	0.00	0.00	0.41***	0.59***	1.00			
Household wealth	0.06***	0.03***	0.01*	0.00	0.00	0.01**	0.07***	0.02***	0.06***	0.04***	0.02***	0.03***	0.00	0.00	1.00		
Number of children	0.00	0.00	0.01**	0.01**	0.01**	0.02***	0.03***	0.01***	-0.02***	0.01***	0.02***	0.00	0.00	-0.01**	0.03***	1.00	
Place of residence	-0.01***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01***	0.00	-0.01*	0.01**	0.00	0.00	0.05***	0.00	1.00

Note. P-value is signified with * at $p < 0.05$; ** at $p < 0.01$; *** at $p < 0.001$.

eTable 3. Multinomial Logistic Regression Model Results Between Each Correlate Independently and Co-Occurrence of Stunting and Off-Track ECD, Relative to Stunting Only and Off-Track ECD Only (N=173,416)

NCF domain	Correlate	AOR (95% CI)		
		Stunted only	Off-track ECD only	Both stunted and off-track ECD
Health	Sanitation Improved	Reference	Reference	Reference
	Unimproved	1.52 (1.47, 1.58) ***	1.17 (1.13, 1.21) ***	1.78 (1.71, 1.85) *** a, b
	Water source Improved	Reference	Reference	Reference
	Unimproved	1.35 (1.30, 1.40) ***	1.12 (1.08, 1.17) ***	1.41 (1.35, 1.48) *** a, b
	Child diarrhea No	Reference	Reference	Reference
	Yes	1.36 (1.29, 1.43) ***	1.18 (1.12, 1.23) ***	1.51 (1.44, 1.59) *** a, b
	Child fever No	Reference	Reference	Reference
	Yes	1.09 (1.05, 1.13) ***	1.07 (1.03, 1.10) **	1.15 (1.11, 1.19) *** a, b
	Child cough No	Reference	Reference	Reference
	Yes	1.02 (0.98, 1.05)	1.08 (1.05, 1.12) ***	1.08 (1.04, 1.12) ** a
Early learning	Maternal stimulation Adequate	Reference	Reference	Reference
	Inadequate	1.41 (1.35, 1.47) ***	1.10 (1.07, 1.14) ***	1.35 (1.29, 1.42) *** b
	Child books at home Yes	Reference	Reference	Reference
	No	2.19 (2.09, 2.31) ***	1.38 (1.33, 1.44) ***	2.50 (2.35, 2.66) *** a, b
	Toys at home Yes	Reference	Reference	Reference
	No	1.16 (1.10, 1.23) ***	1.41 (1.34, 1.48) ***	1.70 (1.61, 1.80) *** a, b
	ECE attendance Yes	Reference	Reference	Reference
	No	2.61 (2.50, 2.72) ***	1.28 (1.23, 1.32) ***	3.49 (3.31, 3.68) *** a, b
Safety and security	Birth registration Yes	Reference	Reference	Reference
	No	1.61 (1.55, 1.67) ***	1.19 (1.15, 1.24) ***	1.85 (1.77, 1.93) *** a, b
	Child supervision Adequate	Reference	Reference	Reference
	Inadequate	1.15 (1.11, 1.19) ***	1.19 (1.16, 1.23) ***	1.30 (1.25, 1.35) *** a, b
Enabling environment	Maternal education Secondary to higher	Reference	Reference	Reference
	No or primary	2.20 (2.12, 2.29) ***	1.31 (1.27, 1.35) ***	2.66 (2.55, 2.79) *** a, b
	Maternal age 25-49 years	Reference	Reference	Reference

15-24 years	1.21 (1.17, 1.25) ***	1.01 (0.97, 1.04)	1.22 (1.17, 1.27) *** b
Marital status			
Married/living with a partner	Reference	Reference	Reference
Not married	0.95 (0.89, 1.00)	1.03 (0.98, 1.08)	0.98 (0.92, 1.05)
Household wealth quintile			
Richest	Reference	Reference	Reference
Richer	1.63 (1.53, 1.74) ***	1.16 (1.11, 1.21) ***	1.96 (1.82, 2.10) *** a, b
Middle	2.32 (2.18, 2.46) ***	1.34 (1.28, 1.40) ***	2.91 (2.72, 3.11) *** a, b
Poorer	2.95 (2.77, 3.13) ***	1.40 (1.34, 1.47) ***	3.94 (3.68, 4.22) *** a, b
Poorest	3.71 (3.50, 3.95) ***	1.60 (1.53, 1.68) ***	5.26 (4.91, 5.63) *** a, b
Number of children			
0-2	Reference	Reference	Reference
3+	1.17 (1.13, 1.22) ***	1.12 (1.09, 1.16) ***	1.19 (1.14, 1.24) ***
Residence			
Urban	Reference	Reference	Reference
Rural	1.77 (1.70, 1.85) ***	1.21 (1.17, 1.25) ***	1.93 (1.83, 2.02) *** a, b

Note. These results are from models that estimated the associations of each correlate independently (not simultaneously with all correlates included in the same model). Models also adjusted for child's age, sex, and including country and survey year fixed effects, while adjusting for clustered standard errors. "Neither stunted nor off-track ECD" served as the reference category. P-value adjusted for Bonferroni correction and is denoted with * at $p<0.05$; ** at $p<0.01$; *** at $p<0.001$. AOR = adjusted odds ratio. CI = confidence interval. ECD = early childhood development. ECE = early childhood education. Two additional multinomial regressions were performed using "stunting only" and "off-track ECD only" as a reference category. Statistically significant differences ($p<0.05$) of the coefficients for the co-occurrence group using the reference groups of stunting only and off-track ECD only are indicated with a and b, respectively.

eTable 4. Distribution of Stunting and Off-Track Early Childhood Development in the Pooled and Country-Specific Samples (N=173,416)

Region	Income level	Survey year	Country	N (%)	
				Stunting	Off-track ECD
Pooled sample				59,147 (34.1)	77,661 (44.8)
Central Asia	Lower-middle	2018	Kyrgyz Republic	139 (10.9)	356 (27.8)
East Asia and Pacific	Lower-middle	2016	Timore Leste	412 (51.2)	466 (57.9)
		2017	Lao PDR	1,727 (40.2)	610 (14.2)
		2018	Mongolia	237 (10.3)	536 (23.2)
		2018-2019	Kiribati	121 (15.8)	479 (62.5)
		2019-2020	Samoa	59 (6.5)	481 (53.3)
Latin America and the Caribbean	Lower-middle	2016-2017	Haiti	297 (20.9)	530 (37.4)
		2019	Honduras	750 (23.1)	853 (26.3)
Middle East and North Africa	Lower-middle	2018	Tunisia	98 (7.0)	326 (23.4)
		2018-2019	Algeria	548 (9.8)	1,833 (32.8)
		2019-2020	State of Palestine	162 (7.5)	487 (22.6)
South Asia	Lower-middle	2016-2020	Pakistan	18,927 (43.5)	25,116 (57.7)
		2019	Bangladesh	2,490 (28.1)	3,031 (34.2)
		2019	Nepal	970 (36.0)	1,294 (48.1)
Sub-Saharan Africa	Low	2015	Mali	1,689 (31.5)	2,112 (39.4)
		2016	Uganda	441 (27.6)	650 (40.7)
		2016-2017	Burundi	1,429 (61.7)	1,387 (59.9)
		2017	Sierra Leone	1,143 (29.7)	1,932 (50.2)
		2017	Togo	474 (26.8)	801 (45.4)
		2017-2018	Congo DR	3,919 (51.2)	3,658 (47.8)
		2018	Madagascar	1,884 (42.6)	1,546 (34.9)
		2018	The Gambia	767 (20.3)	1,496 (39.6)
		2018-2019	Central African Republic	1,398 (45.2)	2,019 (65.3)
		2018-2019	Guinea-Bissau	668 (24.6)	684 (25.2)
		2019	Chad	3,272 (37.7)	5,100 (58.7)
		2019-2020	Malawi	1,691 (32.2)	2,119 (40.4)
		2019-2020	Rwanda	509 (35.2)	265 (18.3)
		Lower-middle	2011-2014	Kenya	253 (31.8)
	2014		Cameroon	823 (34.6)	1,002 (42.1)
	2014		Eswatini	171 (21.9)	286 (36.7)
	2014-2015		Congo	802 (25.5)	1,467 (46.6)
	2015		Mauritania	1,070 (30.7)	1,551 (44.4)
	2016		Cote d'Ivoire	899 (29.2)	1,144 (37.1)
	2016		Guinea	946 (34.8)	1,389 (51.0)
	2016-2017		Nigeria	4,405 (43.1)	4,239 (41.5)
	2017-2018	Benin	1,313 (34.6)	1,589 (41.9)	

	2017-2018	Ghana	1,132 (18.4)	2,718 (44.2)
	2018	Lesotho	267 (29.5)	213 (23.5)
	2019	Sao Tome and Principe	74 (11.2)	278 (42.0)
	2019	Senegal	334 (16.8)	717 (36.1)
	2019	Zimbabwe	437 (20.7)	597 (28.3)
By income level				
Low income			19,284 (37.1)	23,769 (45.8)
Lower-middle income			39,863 (32.8)	53,892 (44.4)
By region				
Central Asia			139 (10.9)	356 (27.8)
East Asia and Pacific			2,556 (28.1)	2,572 (28.3)
Latin America and the Caribbean			1,047 (22.4)	1,383 (29.7)
Middle East and North Africa			808 (8.8)	2,646 (28.9)
South Asia			22,387 (40.6)	29,441 (53.4)
Sub-Saharan Africa			32,210 (34.2)	41,263 (43.8)

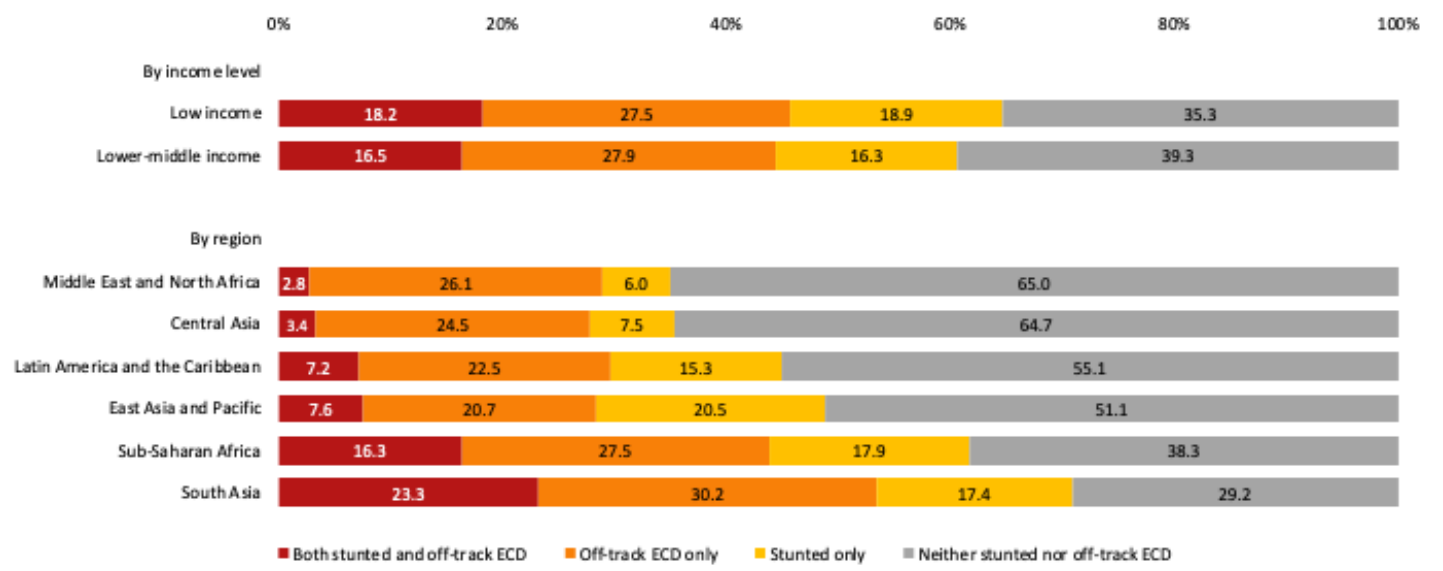
Note. ECD = early childhood development. Lao PDR = Lao People's Democratic Republic; Congo DR = Democratic Republic of Congo.

eTable 5. Proportion of Children Who Failed in Five Developmental Items Among Those With Off-Track ECD (N=77,661)

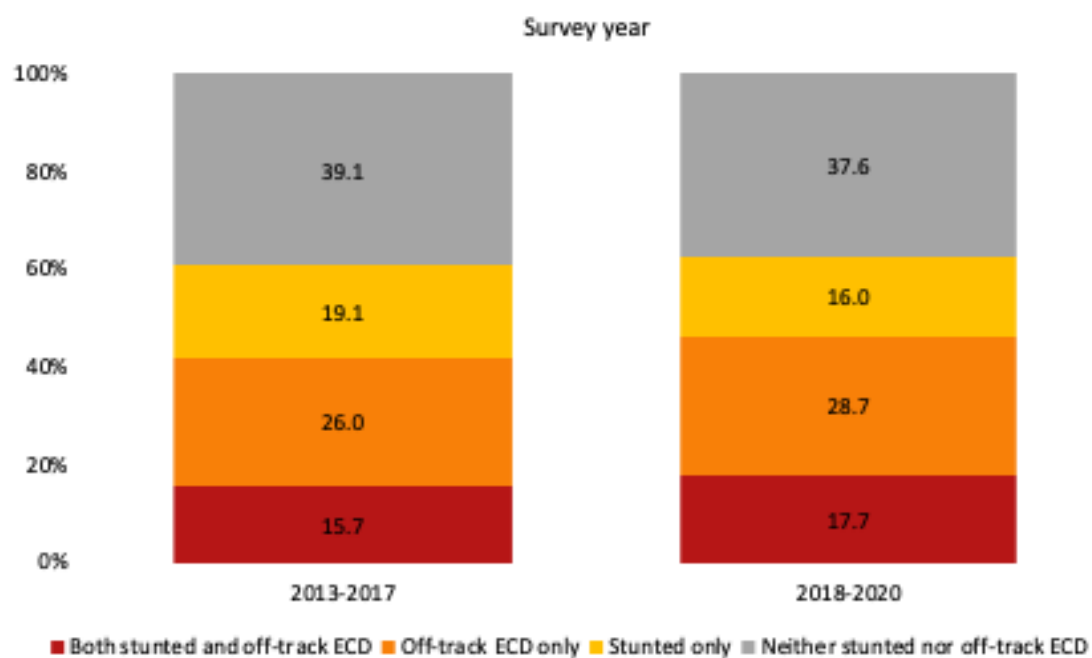
Developmental domains	Children with off-track ECD (N=77,661)	
<i>Socioemotional domain</i>	Failed, N (%)	Passed, N (%)
Child gets along well with other children	17,851 (23.0)	59,810 (77.0)
Child does not kick, bite, or hit other children or adults	57,412 (73.9)	20,249 (26.1)
Child does not get distracted easily or quickly	58,074 (74.8)	19,587 (25.2)
<i>Learning domain</i>	Failed, N (%)	Passed, N (%)
Child follows simple directions on how to do something correctly	34,429 (44.3)	43,232 (55.7)
Child can work on a task, including play tasks independently	37,816 (48.7)	39,845 (51.3)

Note. For the socioemotional domain item “Child does not kick, bite, or hit other children or adults”, those who failed in this item mean that they were reported to kick, bite, or hit others. Similarly, those who failed in the item “Child does not get distracted easily or quickly” mean that they were reported to be distracted easily or quickly.

eFigure 1. Distribution of the Co-Occurrence of Stunting and Off-Track Early Childhood Development by Country Income Grouping and by Region (N=173,416)



eFigure 2. Distribution of the Co-Occurrence of Stunting and Off-Track Early Childhood Development Stratified by Survey Year (N=173,416)



Note. Chi-square test result was statistically significant at $p\text{-value} < 0.001$.

eTable 6. Overall Distribution of the Co-Occurrence of Stunting and Off-Track Early Childhood Development in the Pooled and Country-Specific Samples (N=173,416)

	N (%)			
	Both stunted and off-track ECD	Off-track ECD only	Stunted only	Neither stunted nor off-track ECD
Pooled sample	29,502 (17.0)	48,159 (27.8)	29,645 (17.1)	66,110 (38.1)
<i>By country</i>				
Algeria	198 (3.5)	1,635 (29.2)	350 (6.3)	3,414 (61.0)
Bangladesh	926 (10.4)	2,105 (23.7)	1,564 (17.6)	4,278 (48.2)
Benin	586 (15.4)	1,003 (26.4)	727 (19.2)	1,478 (39.0)
Burundi	896 (38.7)	491 (21.2)	533 (23.0)	395 (17.1)
Cameroon	346 (14.5)	656 (27.6)	477 (20.0)	901 (37.9)
Central Africa	920 (29.8)	1,099 (35.6)	478 (15.5)	593 (19.2)
Chad	1,936 (22.3)	3,164 (36.4)	1,336 (15.4)	2,252 (25.9)
Congo	414 (13.2)	1,053 (33.4)	388 (12.3)	1,293 (41.1)
Cote d'Ivoire	330 (10.7)	814 (26.4)	569 (18.5)	1,367 (44.4)
Congo DR	1,986 (26.0)	1,672 (21.9)	1,933 (25.3)	2,058 (26.9)
Eswatini	70 (9.0)	216 (27.7)	101 (12.9)	393 (50.4)
Ghana	556 (9.0)	2,162 (35.1)	576 (9.4)	2,860 (46.5)
Guinea	509 (18.7)	880 (32.3)	437 (16.1)	896 (32.9)
Guinea-Bissau	164 (6.0)	520 (19.1)	504 (18.6)	1,528 (56.3)
Haiti	119 (8.4)	411 (29.0)	178 (12.6)	710 (50.1)
Honduras	215 (6.6)	638 (19.6)	535 (16.5)	1,859 (57.3)
Kenya	96 (12.1)	208 (26.2)	157 (19.7)	334 (42.0)
Kiribati	78 (10.2)	401 (52.3)	43 (5.6)	245 (31.9)
Kyrgyz Republic	43 (3.4)	313 (24.5)	96 (7.5)	827 (64.7)
Lao PDR	278 (6.5)	332 (7.7)	1,449 (33.7)	2,242 (52.1)
Lesotho	62 (6.9)	151 (16.7)	205 (22.7)	487 (53.8)
Madagascar	707 (16.0)	839 (19.0)	1,177 (26.6)	1,702 (38.5)
Malawi	736 (14.0)	1,383 (26.4)	955 (18.2)	2,173 (41.4)
Mali	663 (12.4)	1,449 (27.0)	1,026 (19.2)	2,219 (41.4)
Mauritania	517 (14.8)	1,034 (29.6)	553 (15.8)	1,387 (39.7)
Mongolia	51 (2.2)	485 (21.0)	186 (8.1)	1,587 (68.7)
Nepal	495 (18.4)	799 (29.7)	475 (17.6)	923 (34.3)
Nigeria	2,119 (20.7)	2,120 (20.7)	2,286 (22.4)	3,700 (36.2)
Pakistan	11,388 (26.2)	13,728 (31.5)	7,539 (17.3)	10,867 (25.0)
Rwanda	113 (7.8)	152 (10.5)	396 (27.4)	786 (54.3)

Samoa	36 (4.0)	445 (49.3)	23 (2.5)	398 (44.1)
Sao Tome and Principe	37 (5.6)	241 (36.4)	37 (5.6)	347 (52.4)
Senegal	123 (6.2)	594 (29.9)	211 (10.6)	1,057 (53.2)
Sierra Leone	608 (15.8)	1,324 (34.4)	535 (13.9)	1,384 (35.9)
State of Palestine	39 (1.8)	448 (20.8)	123 (5.7)	1,541 (71.6)
The Gambia	330 (8.7)	1,166 (30.8)	437 (11.6)	1,847 (48.9)
Timore Leste	247 (30.7)	219 (27.2)	165 (20.5)	174 (21.6)
Togo	244 (13.8)	557 (31.5)	230 (13.0)	735 (41.6)
Tunisia	20 (1.4)	306 (21.9)	78 (5.6)	991 (71.0)
Uganda	173 (10.8)	477 (29.9)	268 (16.8)	678 (42.5)
Zimbabwe	128 (6.1)	469 (22.2)	309 (14.6)	1,204 (57.1)
<i>By income level</i>				
Low income	9,476 (18.2)	14,293 (27.5)	9,808 (18.9)	18,350 (35.3)
Lower-middle income	20,026 (16.5)	33,866 (27.9)	19,837 (16.3)	47,760 (39.3)
<i>By region</i>				
Central Asia	43 (3.4)	313 (24.5)	96 (7.5)	827 (64.7)
East Asia and Pacific	690 (7.6)	1,882 (20.7)	1,866 (20.5)	4,646 (51.1)
Latin America and the Caribbean	334 (7.2)	1,049 (22.5)	713 (15.3)	2,569 (55.1)
Middle East and North Africa	257 (2.8)	2,389 (26.1)	551 (6.0)	5,946 (65.0)
South Asia	12,809 (23.3)	16,632 (30.2)	9,578 (17.4)	16,068 (29.2)
Sub-Saharan Africa	15,369 (16.3)	25,894 (27.5)	16,841 (17.9)	36,054 (38.3)

eTable 7. Distribution of the Co-Occurrence of Stunting and Off-Track Early Childhood Development Stratified by Age of Children, Household Wealth, Maternal Education, Place of Residence, and Survey Year (N=173,416)

	N (%)				P-value
	Both stunted and off-track ECD	Off-track ECD only	Stunted only	Neither stunted nor off-track ECD	
<i>By age</i>					<0.001
36-47 months	16,901 (19.1)	24,602 (27.7)	15,821 (17.8)	31,333 (35.3)	
48-59 months	12,601 (14.9)	23,557 (27.8)	13,824 (16.3)	34,777 (41.0)	
<i>By wealth</i>					<0.001
Richest	2,055 (8.3)	7,357 (29.8)	2,572 (10.4)	12,689 (51.4)	
Richer	3,890 (13.2)	8,470 (28.8)	4,148 (14.1)	12,946 (44.0)	
Middle	5,588 (16.5)	9,681 (28.5)	5,757 (17.0)	12,919 (38.1)	
Poorer	7,732 (19.8)	10,389 (26.6)	7,519 (19.3)	13,399 (34.3)	
Poorest	10,237 (22.1)	12,262 (26.5)	9,649 (20.8)	14,157 (30.6)	
<i>By education</i>					<0.001
Secondary to higher	4,975 (9.1)	15,390 (28.3)	6,509 (11.9)	27,599 (50.7)	
No education to primary	24,225 (20.8)	32,017 (27.5)	22,810 (19.6)	37,508 (32.2)	
<i>By residence</i>					<0.001
Urban	5,880 (11.6)	14,737 (29.0)	6,439 (12.7)	23,795 (46.8)	
Rural	23,614 (19.3)	33,341 (27.3)	23,190 (19.0)	42,036 (34.4)	
<i>By survey year</i>					<0.001
2013-2017	9,396 (15.7)	15,546 (26.0)	11,407 (19.1)	23,371 (39.1)	
2018-2020	20,106 (17.7)	32,613 (28.7)	18,238 (16.0)	42,739 (37.6)	

Note. Chi-square test results showed statistical significance for each stratification, presented with p-values.

eTable 8. Multinomial Logistic Regressions Between Correlates and Co-Occurrence of Stunting and Off-Track Early Childhood Development, Stratified by Income Level of Countries (N=173,416)

NCF domain	Correlate	Low-income countries (13 countries, N=51,927) AOR (95% CI)			Lower-middle income countries (28 countries, N=121,489) AOR (95% CI)		
		Stunted only	Off-track ECD only	Both stunted and off-track ECD	Stunted only	Off-track ECD only	Both stunted and off-track ECD
Health	Sanitation						
	Improved	Reference	Reference	Reference	Reference	Reference	Reference
	Unimproved	1.11 (1.03, 1.20)	0.99 (0.92, 1.06)	1.12 (1.02, 1.22)	1.00 (0.96, 1.05)	1.02 (0.98, 1.06)	1.10 (1.05, 1.16) **
	Water source						
	Improved	Reference	Reference	Reference	Reference	Reference	Reference
	Unimproved	0.96 (0.90, 1.02)	1.08 (1.01, 1.15)	1.04 (0.97, 1.12)	1.04 (0.98, 1.09)	0.97 (0.92, 1.01)	1.02 (0.97, 1.08)
	Child diarrhea						
	No	Reference	Reference	Reference	Reference	Reference	Reference
	Yes	1.25 (1.15, 1.36) ***	1.17 (1.09, 1.26) **	1.47 (1.35, 1.59) ***	1.26 (1.19, 1.35) ***	1.09 (1.03, 1.15)	1.32 (1.24, 1.41) ***
	Child fever						
	No	Reference	Reference	Reference	Reference	Reference	Reference
	Yes	1.01 (0.95, 1.08)	1.04 (0.98, 1.11)	1.10 (1.03, 1.18)	1.02 (0.97, 1.07)	0.99 (0.95, 1.04)	0.99 (0.94, 1.05)
	Child cough						
	No	Reference	Reference	Reference	Reference	Reference	Reference
	Yes	1.04 (0.98, 1.12)	1.11 (1.05, 1.18) *	1.08 (1.01, 1.16)	1.01 (0.96, 1.07)	1.08 (1.03, 1.12) *	1.06 (1.01, 1.12)
Early learning	Maternal stimulation						
	Adequate	Reference	Reference	Reference	Reference	Reference	Reference
	Inadequate	1.06 (0.99, 1.14)	1.17 (1.09, 1.26) ***	1.23 (1.13, 1.34) ***	1.03 (0.98, 1.09)	0.92 (0.88, 0.96) **	0.85 (0.80, 0.90) ***
	Child books at home						
	Yes	Reference	Reference	Reference	Reference	Reference	Reference
	No	1.20 (1.04, 1.38)	1.08 (0.97, 1.21)	1.17 (0.99, 1.37)	1.32 (1.24, 1.40) ***	1.21 (1.16, 1.27) ***	1.38 (1.29, 1.47) ***
	Toys at home						
	Yes	Reference	Reference	Reference	Reference	Reference	Reference
	No	1.04 (0.95, 1.14)	1.26 (1.16, 1.38) ***	1.34 (1.22, 1.48) ***	0.96 (0.89, 1.03)	1.34 (1.26, 1.42) ***	1.45 (1.36, 1.56) ***
	ECE attendance						
	Yes	Reference	Reference	Reference	Reference	Reference	Reference
	No	1.45 (1.32, 1.59) ***	1.20 (1.11, 1.30) ***	2.07 (1.85, 2.32) ***	1.91 (1.81, 2.02) ***	1.08 (1.03, 1.13) *	2.27 (2.13, 2.41) ***
Safety and security	Birth registration						
	Yes	Reference	Reference	Reference	Reference	Reference	Reference
	No	1.06 (0.99, 1.13)	1.14 (1.07, 1.21) **	1.24 (1.16, 1.33) ***	1.23 (1.18, 1.29) ***	1.03 (0.99, 1.08)	1.30 (1.23, 1.37) ***
	Child supervision						

	Adequate Inadequate	Reference 1.03 (0.97, 1.09)	Reference 1.11 (1.05, 1.17) **	Reference 1.12 (1.05, 1.19) *	Reference 1.06 (1.01, 1.11)	Reference 1.19 (1.14, 1.24) ***	Reference 1.23 (1.17, 1.29) ***
Enabling environment	Maternal education						
	Secondary to higher	Reference	Reference	Reference	Reference	Reference	Reference
	No or primary	1.33 (1.23, 1.44) ***	1.11 (1.04, 1.19)	1.43 (1.30, 1.56) ***	1.35 (1.28, 1.42) ***	1.08 (1.04, 1.12) *	1.43 (1.35, 1.51) ***
	Maternal age						
	25-49 years	Reference	Reference	Reference	Reference	Reference	Reference
	15-24 years	1.17 (1.10, 1.24) ***	1.01 (0.95, 1.07)	1.13 (1.06, 1.21) *	1.18 (1.12, 1.24) ***	0.98 (0.94, 1.03)	1.20 (1.14, 1.27) ***
	Marital status						
	Married/ living with a partner	Reference	Reference	Reference	Reference	Reference	Reference
	Not married	1.01 (0.92, 1.10)	1.00 (0.92, 1.08)	1.02 (0.94, 1.12)	0.96 (0.89, 1.05)	1.08 (1.01, 1.15)	1.02 (0.94, 1.12)
	Household wealth quintile						
	Richest	Reference	Reference	Reference	Reference	Reference	Reference
	Richer	1.37 (1.22, 1.54) ***	1.01 (0.92, 1.11)	1.45 (1.27, 1.65) ***	1.28 (1.18, 1.38) ***	1.11 (1.05, 1.17) *	1.54 (1.41, 1.68) ***
	Middle	1.83 (1.62, 2.07) ***	1.03 (0.93, 1.15)	1.71 (1.50, 1.95) ***	1.50 (1.38, 1.62) ***	1.26 (1.19, 1.34) ***	1.99 (1.81, 2.19) ***
	Poorer	1.86 (1.65, 2.10) ***	1.09 (0.98, 1.22)	1.90 (1.65, 2.18) ***	1.88 (1.72, 2.05) ***	1.25 (1.17, 1.34) ***	2.51 (2.27, 2.78) ***
	Poorest	2.04 (1.80, 2.31) ***	1.19 (1.06, 1.33)	2.13 (1.86, 2.45) ***	2.25 (2.06, 2.46) ***	1.39 (1.30, 1.50) ***	3.07 (2.77, 3.41) ***
	Number of children						
	0-2	Reference	Reference	Reference	Reference	Reference	Reference
	3+	1.04 (0.97, 1.11)	1.06 (1.00, 1.12)	1.10 (1.03, 1.19)	1.08 (1.03, 1.13)	1.10 (1.05, 1.15) **	1.09 (1.04, 1.15)
	Residence						
	Urban	Reference	Reference	Reference	Reference	Reference	Reference
	Rural	1.32 (1.21, 1.43) ***	0.98 (0.90, 1.06)	1.22 (1.11, 1.35) ***	0.95 (0.90, 1.00)	0.99 (0.95, 1.04)	0.91 (0.85, 0.97)

Note. Regression models included child's age and sex, country and survey year fixed effects, and 17 correlates simultaneously. Clustered standard error was adjusted for. "Neither stunted nor off-track ECD" served as a reference category. P-value is adjusted for Bonferroni correction and signified with * at $p < 0.05$; ** at $p < 0.01$; *** at $p < 0.001$. AOR = adjusted odds ratio. CI = confidence interval. ECD = early childhood development. ECE = early childhood education.