Adolescent Girls Health Agenda:
Study on Intergenerational Health Impacts

David Canning
Jocelyn E. Finlay
Emre Ozaltin

Harvard School of Public Health
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In this document, we provide a series of tables of results detailing child health outcomes and mothers' characteristics as risk factors. The focus risk factor is mother's age. We find that when the first born child is born to a young mother (where young is defined as 12-24 years old), then the child is at a greater risk of dying before the age of 5, being stunted, being underweight, and suffering from anemia.

The other risk factors for child mortality and other childhood health outcomes we consider are: whether the child is born before first marriage; whether the mother had first sex before union; if the mother had never used modern contraception; if the mother has not heard of AIDS; mother's anemia status; if the mother smokes; whether the mother is subject to domestic violence; the mother's education level; the mother's BMI; the mother's household wealth quintile; and the mother's height.

The definitions of these variables are described in Table 1.1.

We use data from the Demographic and Health Survey (DHS). The DHS is a survey conducted in developing countries with a focus on maternal health. The data include child histories and child health histories. We take a sample of women aged 12-27 who had their first child within 1-5 years of the interview date. The DHS covers 76 developing countries, and surveys within countries are repeated cross sections (not a panel). For this project, however, we are interested in the current state of maternal health and so we take the latest survey from each country.

We analyze the effect of the risk factors on child outcomes in bivariate and multivariate logit regressions. We can think of the reported odds ratio as the relative risk of the outcome given the risk factor, relative to a baseline relative risk of 1 for the baseline risk.

In all of the regressions we include indicator variables for year of birth of the child to control for any global factors that affected childhood outcomes in a given year. We also control for country fixed effects which represent factors that are common to all children within the country, and do not change over time, and affect the childhood outcome. This may be country level religious composition, average altitude of the country, and average latitude of the country. The bivariate relationships control for country fixed effects and time and look at the effect of one maternal risk factor on the child health outcome. We do this by age of the mother to see if different risk factors have differential effects by mother's age. In the multivariate regressions we control for all the risk factors at the same time. In this case we can think of the odds ratio as being estimated as we change one risk factor holding all other risk factors constant.

Note that the age bands of the mother at the time of her first birth are 12<=age<15, 15<=age<18, 18<=age<21, 21<=age<24, 24<=age<27, but are often abbreviated throughout this document to 12-15, 15-18, 18-21, etc. In the report, *Start With A Girl: A New Agenda for Global Health*, the age ranges were presented as 12-14, 15-17, and 18-20 for clarity.

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1. Summary Statistics

Table 1.1 Description of variables.

Variable Category	Variable Name	Indicator Name	Variable Description
Child mortality	Child Mortality	Child alive	Children who were born 1-5 years prior to the interview and had died prior to the interview date
		Child dead	
Underweight child	Underweight Child	Child is not underweight	Two standard deviations below the reference population in terms of weight-for-age-and-sex
		Child is underweight	
Child stunting	Child Stunting	Child is not stunted	Two standard deviations below the reference population in terms of height-for-age-and-sex
		Child is stunted	
Child wasting	Child Wasting	Child does not suffer from wasting	Two standard deviations below the reference population in terms of weight-for-height-and-sex
		Child suffers from wasting	
Child Diarrhea	Child Diarrhea	Child did not suffer from diarrhea in the past two weeks	Child has had diarrhea in the last two weeks (as reported by the respondent)
		Child suffered from diarrhea in the past two weeks	
Child anemia	Child Anemia	Child is not anemic	A child is considered anemic if it has hemoglobin levels <11g/dl.
		Child has some degree of anemia	

First child born before first marriage	OWC	First child born after first marriage First child born before first marriage	Date of birth of first child recorded precedes the date recorded of the respondents first union
First sex not at union	First Sex	First sex at union First sex not at union	The respondent is asked if her first experience of sexual intercourse at union
Never used modern contraception	FP	Ever used modern contraception Never used modern contraception	Whether the respondent has ever used a modern contraceptive method or not
Not heard of AIDS	AIDS	Heard of AIDS Not heard of AIDS	The respondent is asked if she has ever heard of AIDS or not
Smokes	Smokes	Does not smoke Smokes	
Education	Education	 Some secondary or higher Completed Primary No education or incomplete primary	Highest level of education attained Includes some secondary, completed secondary, some tertiary and completed tertiary Respondents who have completed primary school Respondents who have no education or started and did not complete primary school

BMI	BMI		Body mass index of the respondent is defined as her weight in kilograms divided by her height in meters squared
		normal	BMI range 18.5-24.9
		severe underweight	BMI range <16
		underweight	BMI range 16-18.4
		overweight	BMI range 25-29.9
		obese	BMI Range 30+
Wealth	Wealth		Wealth index
		richest	Richest quintile within a country
		poorest	poorest quintile within a country
		poorer	poorer quintile within a country
		middle	middle quintile within a country
		rich	rich quintile within a country
Height	Height	>=160cm	Height of the respondent 160-200cm
		<145cm	Height of the respondent 100-145cm
		145.9-149.9cm	Height of the respondent 145.9-149.9cm
		150-154.9cm	Height of the respondent 150-154.9cm
		155-159.9cm	Height of the respondent 155-159.9cm
Anemia	Anemia		Respondents anemia level based on hemoglobin level adjusted by altitude
		Not Anemic	
		Mild	
		Moderate	
		Severe	
Domestic Violence	DV	Not slapped often or sometimes	The respondent is asked if she has slapped often or sometimes
		Slapped often or sometimes	

Table 1.2: Country list**.** Frequency is the sample population; the number of women between the ages of 12 and 27 who had their first child within one to five years prior to the survey.

Country name	Freq.	Percent	Cum.
Armenia	460	0.53	0.53
Bangladesh	1,580	1.83	2.36
Benin	2,238	2.59	4.94
Bolivia	1,872	2.16	7.11
Brazil	1,138	1.32	8.42
Burkina Faso	1,547	1.79	10.21
Burundi	481	0.56	10.77
Cambodia	1,505	1.74	12.51
Cameroon	1,433	1.66	14.16
Central African Republic	773	0.89	15.06
Chad	763	0.88	15.94
Colombia	3,653	4.22	20.16
Comoros	251	0.29	20.45
Congo, Rep.	959	1.11	21.56
Cote d'Ivoire	696	0.8	22.36
Dominican Republic	179	0.21	22.57
Ecuador	489	0.57	23.14
Egypt, Arab Rep.	2,858	3.3	26.44
Ethiopia	1,430	1.65	28.09
Gabon	842	0.97	29.07
Ghana	610	0.71	29.77
Guatemala	791	0.91	30.68
Guinea	823	0.95	31.64
Guyana	198	0.23	31.87
Haiti	1,009	1.17	33.03
Honduras	2,227	2.57	35.61
India	11,849	13.7	49.3
Indonesia	3,829	4.43	53.73
Jordan	1,402	1.62	55.35
Kazakhstan	364	0.42	55.77
Kenya	1,101	1.27	57.04
Kyrgyz Republic	449	0.52	57.56
Lesotho	892	1.03	58.59
Liberia	948	1.1	59.69
Madagascar	943	1.09	60.78
Malawi	1,910	2.21	62.98
Mali	1,901	2.2	65.18
Mexico	920	1.06	66.24
Moldova	555	0.64	66.89
Morocco	1,020	1.18	68.06
Mozambique	1,780	2.06	70.12
Namibia	1,122	1.3	71.42

Nepal		1,331	1.54	72.96
Nicaragua		1,586	1.83	74.79
Niger		1,141	1.32	76.11
Nigeria		874	1.01	77.12
Paraguay		669	0.77	77.89
Peru		2,762	3.19	81.08
Philippines		1,215	1.4	82.49
Rwanda		1,181	1.37	83.85
South Africa		1,160	1.34	85.19
Sri Lanka		744	0.86	86.05
Sudan		846	0.98	87.03
Swaziland		651	0.75	87.79
Tanzania		1,387	1.6	89.39
Thailand		870	1.01	90.39
Togo		918	1.06	91.45
Trinidad and Tobago		406	0.47	91.92
Tunisia		631	0.73	92.65
Turkey		998	1.15	93.81
Uganda		1,079	1.25	95.05
Uzbekistan		579	0.67	95.72
Vietnam		621	0.72	96.44
Yemen, Rep.		641	0.74	97.18
Zambia		1,214	1.4	98.59
Zimbabwe		1,224	1.41	100
Total		**86,518**	**100**	

Table 1.3: Samples sizes by age.

Age band	Sample size	Percent of total sample
12 to 15	1,825	2.11
15 to 18	19,910	23.03
18 to 21	32,572	37.68
21 to 24	21,588	24.97
24 to 27	10,559	12.21
	86,454	

Table 1.4: Samples sizes by age group and risk factor status.

		All Ages		Age Band 12-15		Age Band 15-18		Age Band 18-21		Age Band 21-24		Age Band 24-27	
		Sample Size	Percent of sample	Sample Size	Percent of sample	Sample Size	Percent of sample	Sample Size	Percent of sample	Sample Size	Percent of sample	Sample Size	Percent of sample
OWC	First child born after first marriage	65,857	85.95	1,059	72.39	13,428	79.08	24,785	85.52	17,733	90.43	8,852	92.35
	First child born before first marriage	10,764	14.05	404	27.61	3,552	20.92	4,198	14.48	1,877	9.57	733	7.65
		76,621	100	1,463	100	16,980	100	28,983	100	19,610	100	9,585	100
First Sex	First sex at union	26,013	34.30	541	32.95	5,717	31.23	9,734	33.5	6,889	37.68	3,132	36.6
	First sex not at union	49,836	65.70	1,101	67.05	12,590	68.77	19,326	66.5	11,394	62.32	5,425	63.4
		75,849	100	1,642	100	18,307	100	29,060	100	18,283	100	8,557	100
FP	Ever used modern contraception	44,776	52.33	758	42.42	9,431	48.03	17,028	52.83	11,534	53.87	6,025	57.4
	Never used modern contraception	40,787	47.67	1,029	57.58	10,206	51.97	15,203	47.17	9,877	46.13	4,472	42.6
		85,563	100	1,787	100	19,637	100	32,231	100	21,411	100	10,497	100
AIDS	Heard of AIDS	66,915	87.77	1,356	79.86	15,444	84.41	25,368	87.69	16,571	89.75	8,176	92.39
	Not heard of AIDS	9,321	12.23	342	20.14	2,852	15.59	3,561	12.31	1,893	10.25	673	7.61
		76,236	100	1,698	100	18,296	100	28,929	100	18,464	100	8,849	100
Smokes	Does not smoke	54,934	96.12	1,057	96.44	12,636	96.65	21,095	96.07	13,741	96.04	6,405	95.34
	Smokes	2,220	3.88	39	3.56	438	3.35	864	3.93	566	3.96	313	4.66
		57,154	100	1,096	100	13,074	100	21,959	100	14,307	100	6,718	100
Education	Some secondary or higher	35,780	44.13	289	16.3	5,214	27.3	13,040	42.42	10,921	54.89	6,316	66
	Completed primary	9,726	12.00	171	9.64	2,557	13.39	3,973	12.92	2,158	10.85	867	9.06

	No education or incomplete primary	35,573	43.87	1,313	74.06	11,328	59.31	13,730	44.66	6,816	34.26	2,386	24.93
		81,079	100	1,773	100	19,099	100	30,743	100	19,895	100	9,569	100
BMI	Normal	41,574	66.68	1,013	70.64	10,839	71.09	16,387	68.33	9,395	63.26	3,940	57.65
	Severe underweight	931	1.49	16	1.12	219	1.44	371	1.55	242	1.63	83	1.21
	Underweight	7,053	11.31	205	14.3	1,903	12.48	2,821	11.76	1,556	10.48	568	8.31
	Overweight	9,806	15.73	158	11.02	1,874	12.29	3,438	14.34	2,756	18.56	1,580	23.12
	Obese	2,984	4.79	42	2.93	412	2.7	965	4.02	902	6.07	663	9.7
		62,348	100	1,434	100	15,247	100	23,982	100	14,851	100	6,834	100
Wealth	Richest	15,318	19.53	179	10.55	2,348	12.89	5,000	16.8	4,653	24	3,138	33.48
	Poorest	15,882	20.25	481	28.36	4,637	25.47	6,190	20.79	3,295	17	1,279	13.64
	Poorer	15,732	20.06	439	25.88	4,324	23.75	6,248	20.99	3,409	17.58	1,312	14
	Middle	15,818	20.17	345	20.34	3,801	20.87	6,375	21.42	3,724	19.21	1,573	16.78
	Rich	15,682	19.99	252	14.86	3,099	17.02	5,954	20	4,305	22.21	2,072	22.1
		78,432	100	1,696	100	18,209	100	29,767	100	19,386	100	9,374	100
Height	>=160cm	17,004	26.85	322	21.99	3,766	24.36	6,531	26.8	4,320	28.63	2,065	29.75
	<145cm	3,553	5.61	142	9.7	971	6.28	1,377	5.65	716	4.74	347	5
	145.9-149.9cm	9,279	14.65	292	19.95	2,482	16.05	3,602	14.78	2,037	13.5	866	12.48
	150-154.9cm	16,470	26.01	377	25.75	4,253	27.51	6,289	25.81	3,782	25.06	1,769	25.49
	155-159.9cm	17,017	26.87	331	22.61	3,990	25.81	6,566	26.95	4,236	28.07	1,894	27.29
		63,323	100	1,464	100	15,462	100	24,365	100	15,091	100	6,941	100
Anemia	Not Anemic	15,946	54.02	243	47.74	3,242	51.53	6,288	53.87	4,168	55.23	2,005	57.35
	Mild	9,560	32.39	174	34.18	2,067	32.85	3,760	32.21	2,440	32.33	1,119	32.01
	Moderate	3,683	12.48	84	16.5	901	14.32	1,497	12.82	859	11.38	342	9.78
	Severe	328	1.11	8	1.57	82	1.3	128	1.1	80	1.06	30	0.86
		29,517	100	509	100	6,292	100	11,673	100	7,547	100	3,496	100
DV	Not slapped often or sometimes	14,352	78.79	192	66.9	2,629	72.25	5,449	76.78	3,987	82.98	2,095	87.73
	Slapped often or sometimes	3,864	21.21	95	33.1	1,010	27.75	1,648	23.22	818	17.02	293	12.27
		18,216	100	287	100	3,639	100	7,097	100	4,805	100	2,388	100

1.5 Summary Statistics.

	Variable	Observations	Mean	Standard Deviations	Minimum	Maximum
Child Outcomes	Mortality	79609	0.08	0.27	0	1
	Underweight					
	Stunting					
	Wasting					
	Diarrhea	49604	0.14	0.35	0	1
	Anemia					
Mother's Risk Factor	Age Band (Age)	79604	2.80	1.03	0	4
	Child born before first union (OWC)	70465	0.15	0.35	0	1
	First sex not at union	70355	0.66	0.47	0	1
	Never used modern contraception (FP)	78754	0.48	0.50	0	1
	Never heard of AIDS (AIDS)	70492	0.13	0.33	0	1
	Anemia recode (Anemia)	27258	0.61	0.75	0	3
	Smokes	52822	0.04	0.19	0	1
	Domestic Violence (DV)	16660	0.22	0.41	0	1
	Low Education Indicator (education)	74865	1.03	0.94	0	2
	BMI recode (BMI)	57905	0.87	1.33	0	4
	Wealth Quintile (Wealth)	72362	2.03	1.39	0	4
	Height Band (Height)	58812	2.21	1.55	0	4
Other variables	Age of the respondent	79609	22.19	2.66	14	27
	Age at death of the child	6285	6.22	8.98	0	58
	Year of the survey	79609	2002.48	4.94	1987	2007

2. Child Mortality

In Table 2.1 we detail the sample sizes of the number of respondents who had their first birth (1-5 years prior to the interview date) by the age of the mother at birth and whether the child remained alive at the time of interview or had passed away by the time of the interview. For women who had their first birth between the ages of 12 and 15, there are 1,825 women in this sub-sample. Within this sub-sample 1,529 women's children were alive at the time of interview, and for 296 of these women, their children passed away before the interview date. The percent of the sample of women whose children pass away before the interview date decreases with mother's age: the higher the age band, the lower the fraction of women who have lost their child.

Table 2.1: Child mortality frequency by age group of the mother.

		Age Band 12-15		Age Band 15-18		Age Band 18-21		Age Band 21-24		Age Band 24-27	
		Sample Size of Sample	Percent	Sample Size of Sample	Percent	Sample Size of Sample	Percent	Sample Size of Sample	Percent	Sample Size of Sample	Percent
Alive	0	1,529	83.78	17,850	89.65	30,116	92.46	20,263	93.86	10,020	94.9
Dead	1	296	16.22	2,060	10.35	2,456	7.54	1,325	6.14	539	5.1
		1,825	100	19,910	100	32,572	100	21,588	100	10,559	100

Controlling for the year of birth and country fixed effects, in Table 2.2 we show results that indicate that the age of mother is a risk factor in determining child mortality. We normalize the results to the 24-27 year old women (who therefore have a baseline relative risk of 1). The coefficient of 2.446 (and statistically significant at the 1% level) indicates that child mortality is close to 2.5 times higher for women who are 12-15 years old at first birth than women who are 24-27 years old at first birth. The risk of child mortality is declining monotonically as the age of the woman at first birth increases, and even when the first birth is when the woman is 21-24 year olds the risk of child mortality is greater (by 10%) than if the first birth were to a woman in the 24-27 year age band.

Table 2.2: The effect of mother's age group on child mortality. (age band 24-27 absorbed)

Dependent Variable: Child mortality	odds ratio
Age Band 12-15	2.446***
	(0.197)
Age Band 15-18	1.582***
	(0.0827)
Age Band 18-21	1.262***
	(0.0634)
Age Band 21-24	1.111**
	(0.0589)
Observations	86513
Robust z-statistics in parentheses	*** p<0.01, ** p<0.05, * p<0.1

In Table 2.3 we test the hypothesis of whether the mother gives birth to her first child before first union is a risk factor for child mortality. We stratify by the age of the mother, which would indicate if being a young mother and having the first child before first union has a different effect than being an older mother and having the first child before marriage. The odds ratios indicate the risk of child mortality if the child is born before the mother's first union compared to women who have their first child after the first union. We find that for women aged 12-24 the risk of child mortality is not significantly different between the mother's who had their first birth before the first union and those who had their first birth after their first union. For the women who had their first births between the ages of 24 and 27, the results indicate that the child is 1.3 times more likely to pass away if the child is born before the mother's first union than if the child were born after the mother's first union.

Table 2.3: The effect of the child being born before the mother's first marriage on child mortality. (variable name OWC) (first child born after first marriage absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
OWC	0.991	1.019	1.024	1.060	1.361*
	(0.210)	(0.0776)	(0.0761)	(0.122)	(0.247)
Observations	1361	16902	28930	19594	9537
Robust z-statistics in parentheses			*** p<0.01, ** p<0.05, * p<0.1		

In Table 2.4 we test the hypothesis of the effect of the mother having her first experience of sexual intercourse before union on mortality of their first born, and compare this to women who reported to have their first experience of sexual intercourse at union. The results indicate that first sex not at union is a protective factor in terms of child mortality, and this result is significant for women who have their first birth between the ages of 18 and 21 and between the ages 24 and 27.

Table 2.4: The effect of having first sex not at union on child mortality. (variable name First sex) (first sex at union absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
First Sex	0.819	0.917	0.898*	0.945	0.793*
	(0.145)	(0.0577)	(0.0517)	(0.0729)	(0.101)
Observations	1586	18307	28984	18258	8474
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.5 we present results of the effect of the mother never having used modern contraception on child mortality. For a woman who has her first birth between the ages of 12 and 15, the child is 1.8 times more likely to die if the woman has never used modern contraception than if she has ever used

modern contraception. For older women – women who have their first birth between 24 and 27 years old – her child is 2.4 times more likely to die if she has never used modern contraception. The use of modern contraception may indicate access to other modern maternal health facilities, reducing the risk of child mortality. And given that the risk of mortality is increasing in mother's age, it may be that the longer the mother doesn't have access to modern maternal health products and facilities, the greater the risk of child mortality.

Table 2.5: The effect of the mother never having used modern contraception on child mortality (variable name FP). (Ever used modern contraception absorbed).

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
FP	1.762***	1.888***	1.823***	1.999***	2.402***
	(0.311)	(0.109)	(0.0936)	(0.144)	(0.278)
Observations	1709	19618	32231	21386	10433
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.6 we analyze the effect of the mother not having heard of AIDS on child mortality. We find that for women who have their first child between the ages of 12 and 15, there is no significant difference in the risk of child mortality between those women who have heard of AIDS and those women who have not heard of AIDS. For older age-groups, we find that not having heard of AIDS increases the risk of child mortality compared to women who have heard of AIDS. The risk of child mortality increases with age. Women who have their first birth when they are between the ages of 24 and 27 and have not heard of AIDS are more likely to suffer the death of their first born than women who have their first born between the ages of 15 and 18.

Table 2.6: The effect of the mother not having heard of AIDS on child mortality (variable name AIDS). (Heard of AIDS absorbed).

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
AIDS	0.927	1.276***	1.456***	1.790***	2.236***
	(0.187)	(0.0926)	(0.103)	(0.170)	(0.366)
Observations	1646	18277	28853	18439	8839
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.7 we examine the effect of mother's anemia status on child mortality. We find that for women who have their first birth between the ages of 21 and 27, an increasing degree of anemia leads to a higher risk of child mortality. For women who are very young when they have their first child, that is 12 to 15 years old, there is an increased risk of child mortality if the mother is anemic compared with women of the same age but do not have anemia.

Table 2.7: The effect of the mother's degree of anemia on child mortality. (Not anemic absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
mild	2.326**	0.996	1.315***	1.311**	1.898***
	(0.816)	(0.0971)	(0.106)	(0.148)	(0.342)
moderate	1.991*	1.107	1.426***	1.867***	1.753**
	(0.803)	(0.137)	(0.150)	(0.260)	(0.439)
severe	1.710	1.445	1.554	3.913***	3.017*
	(1.979)	(0.448)	(0.467)	(1.192)	(1.890)
Observations	459	6210	11673	7518	3329
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.8 we analyze the effect of smoking (cigarettes, pipe, tobacco, or traditional substance) on child mortality. We find that only for women who have their first child between the ages of 18-21 that there is an increased risk of child mortality of those women who smoke compared with those women who do not smoke. The null result for this potential risk factor is surprising, and it may be that smoking is a proxy for wealth in the sample of countries in this study: people who are wealthier smoke, but also have healthier children on average.

Table 2.8: The effect of the mother smoking cigarettes, pipe, snuff, or traditional substance on child mortality. (Does not smoke absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
Smokes	0.903	0.935	1.248*	1.039	1.445
	(0.500)	(0.165)	(0.168)	(0.211)	(0.409)
Observations	1056	13074	21959	14282	6675
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.9 we analyze the effect of the mother being subject to domestic violence on child mortality. We find that if the mother is subject to domestic violence in the form of being slapped often or sometimes, there is no higher risk of child mortality than women who are not slapped often or sometimes. This does not preclude the dangers of other forms of domestic violence, and further work

detailing other forms of domestic violence would have to be conducted to identify the effect of domestic violence in general on child mortality outcomes.

Table 2.9: The effect of the mother being slapped often or sometimes on child mortality. Domestic violence (dv) is coded as one if the respondent is slapped “often” or “sometimes”

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
dv	1.340	1.155	1.147	1.120	1.238
	(0.608)	(0.157)	(0.125)	(0.187)	(0.400)
Observations	262	3576	7097	4765	2249
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.10, we examine the effect of mother’s education level on child mortality. We find that women who have only completed primary school are at a higher risk (about 1.5 times) of child mortality compared to women who reached an education level of some secondary or higher. The risk of child mortality is even higher for women with no education or incomplete primary. For women who have their first child when they are between the ages of 21 and 24, if the woman has no education or incomplete primary, then she is 2 times more likely to suffer mortality of her child than a woman with some secondary or higher education.

Table 2.10: The effect of mother’s education on child mortality. (Some secondary or more absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child mortality					
Completed Primary	1.561	1.228**	1.524***	1.566***	1.530**
	(0.587)	(0.123)	(0.126)	(0.171)	(0.297)
No education or incomplete primary	2.678***	1.691***	1.987***	2.056***	2.941***
	(0.703)	(0.120)	(0.117)	(0.161)	(0.363)
Observations	1698	19080	30667	19859	9498
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.11 we analyze the effect of mother’s body mass index on child mortality. We find that women who have their first birth between the ages of 12 and 15 and are classified as severely underweight are close to five times more likely to suffer the mortality of their child compared to women of the same age who are of normal BMI.

Table 2.11: The effect of mother's BMI on child mortality. (Normal BMI absorbed)
Ranges for BMI: Severe underweight<16; Underweight 16-18.4; Normal 18.5-24.9; Overweight 25-29.9; Obese 30+

Sample Age Band	12-15	15-18	18-21	21-24
	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Mortality				
Severe underweight	4.872***	1.517**	1.019	0.462**
	(2.610)	(0.300)	(0.206)	(0.180)
Underweight	0.860	0.982	1.117	1.083
	(0.213)	(0.0844)	(0.0847)	(0.117)
Overweight	0.680	1.018	0.961	0.885
	(0.203)	(0.0955)	(0.0756)	(0.0913)
Obese	0.383	0.767	1.015	0.880
	(0.272)	(0.168)	(0.151)	(0.157)
Observations	1380	15190	23982	14851
Robust z-statistics in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

In Table 2.12 we examine the effect of the mother's wealth quintile on child mortality. Across all age groups, children who are born to mothers in the bottom four quintiles experience a higher risk of mortality than children who are born to mothers in households that are in the richest quintile. For young mothers, 12 to 15 year olds, being in anything but the richest quintile implies that the child is around 2.2 times more likely to die than children born to women of the same age but in the richest quintile.

Table 2.12: The effect of the mother's household wealth quintile on child mortality. (Richest absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Mortality					
poorest	2.227***	1.998***	1.805***	2.493***	3.108***
	(0.626)	(0.182)	(0.135)	(0.251)	(0.514)
poorer	1.954**	1.903***	1.559***	1.970***	2.874***
	(0.549)	(0.176)	(0.119)	(0.206)	(0.477)
middle	2.285***	1.728***	1.345***	2.022***	2.405***
	(0.640)	(0.162)	(0.103)	(0.203)	(0.383)
rich	2.227***	1.419***	1.154*	1.388***	1.876***
	(0.636)	(0.139)	(0.0915)	(0.143)	(0.282)
Observations	1628	18190	29691	19307	9328
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

In Table 2.13 we examine the effect of mother's height on child mortality. We find that women who are shorter are more likely to experience the death of their first born child than women who are taller than 160cm. For example, if a woman has her first child between the ages of 18-21 and is less than

145cm tall, then she is 1.8 times more likely to experience child mortality than a woman of the same age but who is greater than 160cm. In viewing these results, it should be noted that women who are under 18 have not yet grown to full height. Thus comparisons of the different heights across age groups may not be feasible, but comparing within age groups is a more robust interpretation.

Table 2.13: The effect of mother's height on child mortality. (height >160cm absorbed)

Sample Age Band	12-15	15-18	18-21	21-24
	odds ratio	odds ratio	odds ratio	odds ratio
Dependent variable: Child Mortality				
<145cm	2.096**	1.536***	1.807***	2.895***
	(0.698)	(0.202)	(0.207)	(0.450)
145.9-149.9cm	1.506	1.467***	1.452***	1.379**
	(0.437)	(0.141)	(0.124)	(0.175)
150-154.9cm	1.514*	1.224**	1.277***	1.271**
	(0.377)	(0.0989)	(0.0901)	(0.129)
155-159.9cm	1.574**	1.186**	1.104	1.207**
	(0.362)	(0.0894)	(0.0749)	(0.113)
Observations	1409	15404	24365	15091
Robust z-statistics in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

In Table 2.14 we present multivariate results for risk factors influencing child mortality. We find that mother's age is a risk factor in determining child mortality even after controlling for many other risk factors related to sexual and reproductive health, nutritional status, education, and financial and physical security. We conduct the multivariate analysis with all the risk factors we analyzed in the bivariate analysis, but with the inclusion of mother's anemia status and domestic violence, the sample size is reduced significantly. Thus, we also conduct the multivariate analysis without controlling for anemia and domestic violence. We find that in both specifications that young mothers are a significant risk factor for child mortality.

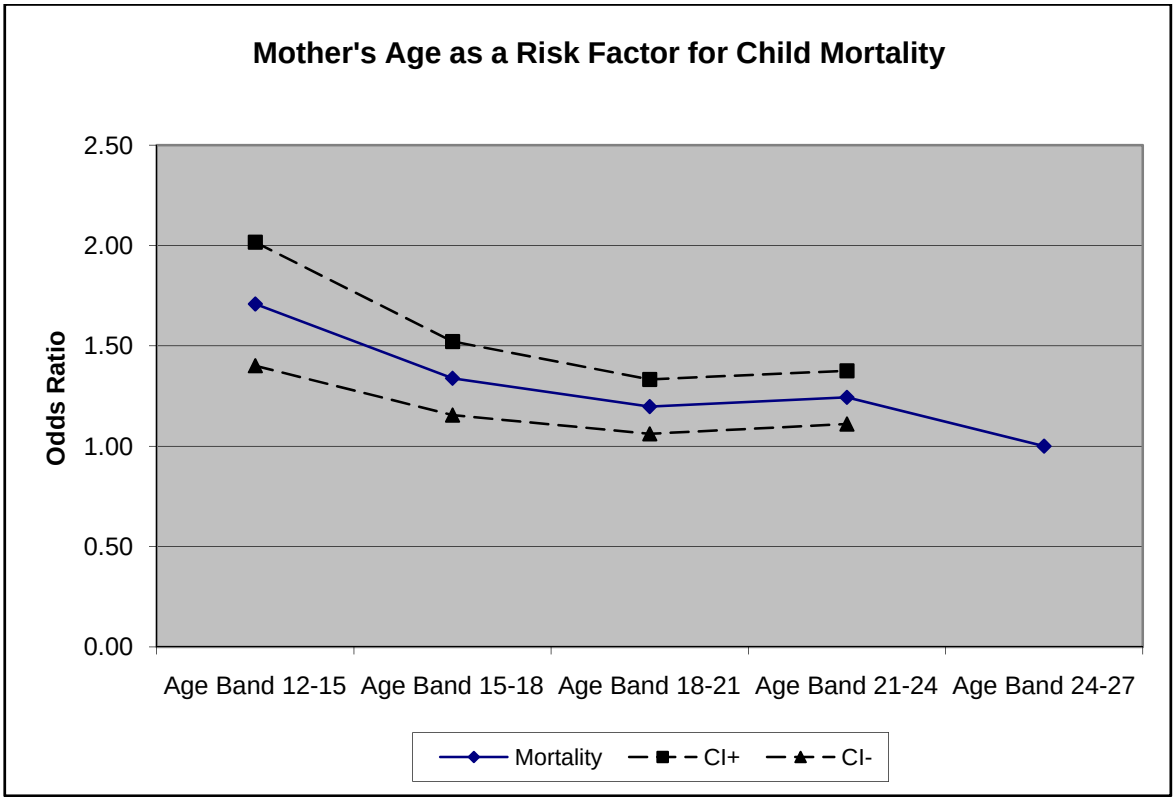
Focusing on the multivariate regression with the larger sample size (and thus without anemia and domestic violence) we find that the younger the mother at birth, the higher the risk of child mortality relative to women who have their first child between the ages of 24 and 27. This result is robust in the multivariate analysis, thus it means that even when controlling for nutritional status, wealth, education, and reproductive health factors, age is a significant risk factor of childhood outcomes.

Other risk factors of child mortality are whether the mother has ever used family planning, education level, wealth of the household the mother lives in, and the height of the mother.

Table 2.14: Mulitvariate analysis detailing the effect of mother's characteristics as risk factors and the effect on child mortality.

		(1)	(2)
	VARIABLES	1 - W anemia & dv	2 - No anemia & dv
Dependent Variable: Child Mortality			
First child born before first marriage	OWC	1.360	1.225***
		(0.433)	(0.0805)
First sex not at union	First sex	0.990	0.989
		(0.109)	(0.0482)
Never used modern contraception	FP	2.355***	1.764***
		(0.239)	(0.0844)
Not heard of AIDS	AIDS	1.199	1.056
		(0.133)	(0.0655)
Smokes	Smokes	1.234	1.004
		(0.180)	(0.105)
Education	Completed Primary	0.963	1.328***
		(0.168)	(0.107)
	No education or incomplete primary	1.313**	1.602***
		(0.144)	(0.0966)
BMI	Severe underweight	0.916	0.994
		(0.192)	(0.144)
	Underweight	1.005	1.009
		(0.100)	(0.0584)
	Overweight	1.096	1.183**
		(0.191)	(0.0790)
	Obese	1.468	1.054
		(0.477)	(0.147)
Wealth	Poorest	1.574***	1.444***
		(0.275)	(0.107)
	Poorer	1.580***	1.423***
		(0.268)	(0.102)
	Middle	1.375**	1.325***
		(0.220)	(0.0926)
	Rich	1.042	1.121*
		(0.164)	(0.0771)
Age	Age Band 12-15	1.843***	1.708***
		(0.321)	(0.157)
	Age Band 15-18	1.235	1.338***
		(0.193)	(0.0934)
	Age Band 18-21	1.208	1.197***
		(0.177)	(0.0691)
	Age Band 21-24	1.294*	1.243***
		(0.192)	(0.0676)
Height	<145cm	0.938	1.907***
		(0.350)	(0.250)
	145.9-149.9cm	1.202	1.290***
		(0.205)	(0.109)
	150-154.9cm	1.136	1.203**

		(0.174)	(0.0976)
	155-159.9cm	0.926	1.130
		(0.145)	(0.0958)
Anemia	Mild	1.214**	
		(0.116)	
	Moderate	1.221*	
		(0.145)	
	Severe	1.245	
		(0.355)	
Domestic Violence	DV	1.021	
		(0.0992)	
	Observations	9505	35254
	Robust z-statistics in parentheses		
	*** p<0.01, ** p<0.05, * p<0.1		



3. Underweight

Table 3.1 Child underweight frequency by mother's age

		Age Band 12-15		Age Band 15-18		Age Band 18-21		Age Band 21-24		Age Band 24-27	
		Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample
Not underweight	0	705	69.87	9,026	76.02	15,685	80.51	10,440	83.69	5,230	87.14
Underweight	1	304	30.13	2,847	23.98	3,796	19.49	2,035	16.31	772	12.86
		1,009	100	11,873	100	19,481	100	12,475	100	6,002	100

Table 3.2: The effect of mother's age group on the child being categorized as underweight. (Age band 24-27 absorbed)

	odds ratio
Dependent Variable: Child Underweight	
Age Band 12-15	2.791***
	(0.244)
Age Band 15-18	2.121***
	(0.103)
Age Band 18-21	1.587***
	(0.0725)
Age Band 21-24	1.280***
	(0.0621)
Observations	50789
Robust z-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 3.3: The effect of the child being born before the mother's first marriage on the child being categorized as underweight (variable name OWC). (First child born after first marriage absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
OWC	0.781	0.842**	1.011	0.892	1.179
	(0.224)	(0.0713)	(0.0806)	(0.111)	(0.241)
Observations	726	10140	17248	11385	5337
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.4: The effect of the mother having first sex not at union on the child being categorized as underweight (variable name First sex). (First sex at union absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
First Sex	1.012	0.798***	0.965	0.863**	0.706***
	(0.227)	(0.0506)	(0.0511)	(0.0590)	(0.0793)
Observations	801	10641	17075	10396	4715
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.5: The effect of the mother never having used modern contraception on the child being categorized as underweight. (variable name FP) (Ever used modern contraception absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
FP	1.535**	1.530***	1.632***	1.710***	1.855***
	(0.290)	(0.0818)	(0.0713)	(0.0941)	(0.166)
Observations	920	11836	19405	12468	5854
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.6: The effect of the mother having not heard of AIDS on the child being categorized as being underweight. (variable name AIDS) (Heard of AIDS absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
AIDS	1.651**	1.276***	1.456***	1.790***	2.236***
	(0.336)	(0.0926)	(0.103)	(0.170)	(0.366)
Observations	897	18277	28853	18439	8839
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.7: The effect of the mother's degree of anemia status on the child being categorized as underweight. (Not anemic absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
mild	1.320	1.075	1.289***	1.003	1.415***
	(0.414)	(0.0845)	(0.0733)	(0.0740)	(0.154)
moderate	0.675	1.320***	1.596***	1.397***	1.239
	(0.259)	(0.133)	(0.121)	(0.139)	(0.212)
severe	0.412	1.423	1.079	2.231***	1.085
	(0.349)	(0.390)	(0.243)	(0.650)	(0.553)
Observations	307	4751	9328	6230	2905
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.8: The effect of the mother smoking cigarettes, pipe, snuff, or traditional substance on the child being categorized as underweight. (Does not smoke absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
Smokes	1.071	1.188	0.983	1.034	1.028
	(0.501)	(0.155)	(0.0982)	(0.138)	(0.202)
Observations	531	8037	14205	9238	4269
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.9: The effect of the mother being slapped often or sometimes on the child being categorized as underweight. Domestic violence (DV) is coded as one if the respondent is slapped "often" or "sometimes". (Not subject to being slapped often or sometimes absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
DV	0.682	1.105	1.183**	1.415***	1.754***
	(0.309)	(0.121)	(0.0951)	(0.154)	(0.326)
Observations	177	2498	5095	3539	1791
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.10: The effect of mother's education on the child being categorized as underweight. (Some secondary or more absorbed)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: **Child Underweight**					
Completed Primary	1.247	1.549***	1.295***	1.727***	1.906***
	(0.416)	(0.140)	(0.0966)	(0.172)	(0.319)
No education or incomplete primary	2.184***	2.290***	2.040***	2.634***	2.743***
	(0.500)	(0.146)	(0.0994)	(0.168)	(0.283)
Observations	920	11836	19404	12468	5854
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.11: The effect of mother's BMI on the child being categorized as underweight. (Normal BMI absorbed)
Ranges for BMI: Severe underweight<16; Underweight 16-18.4; Normal 18.5-24.9; Overweight 25-29.9; Obese 30+

Sample Age Band	12-15	15-18	18-21	21-24	27-29
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
Severe underweight	6.582*	1.749***	2.425***	2.570***	2.204***
	(7.101)	(0.292)	(0.301)	(0.381)	(0.580)
Underweight	1.328	1.361***	1.703***	1.712***	2.033***
	(0.288)	(0.0892)	(0.0888)	(0.122)	(0.241)
Overweight	0.583	0.505***	0.473***	0.459***	0.341***
	(0.209)	(0.0529)	(0.0392)	(0.0441)	(0.0536)
Obese	0.705	0.433***	0.327***	0.374***	0.732
	(0.348)	(0.105)	(0.0639)	(0.0682)	(0.144)
Observations	897	11338	18717	11954	5619
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.12: The effect of the mother's household wealth quintile on the child being categorized as underweight. (Richest absorbed)

	12-15	15-18	18-21	21-24	27-29
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
Poorest	3.293***	3.413***	3.334***	4.118***	4.344***
	(1.070)	(0.307)	(0.239)	(0.368)	(0.644)
Poorer	1.835*	2.492***	2.403***	2.909***	3.254***
	(0.578)	(0.226)	(0.171)	(0.261)	(0.464)
Middle	1.601	1.858***	2.119***	2.358***	2.442***
	(0.518)	(0.170)	(0.145)	(0.198)	(0.320)
Rich	2.070**	1.605***	1.620***	1.655***	1.630***
	(0.700)	(0.153)	(0.112)	(0.135)	(0.195)
Observations	888	11201	18694	12059	5692
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.13: The effect of mother's height on the child being categorized as underweight. (>160 cm absorbed)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Underweight					
<145cm	4.929***	3.413***	3.334***	4.118***	4.344***
	(1.723)	(0.307)	(0.239)	(0.368)	(0.644)
145.9-149.9cm	3.759***	2.492***	2.403***	2.909***	3.254***
	(1.119)	(0.226)	(0.171)	(0.261)	(0.464)
150-154.9cm	2.205***	1.858***	2.119***	2.358***	2.442***
	(0.620)	(0.170)	(0.145)	(0.198)	(0.320)
155-159.9cm	1.534	1.605***	1.620***	1.655***	1.630***
	(0.407)	(0.153)	(0.112)	(0.135)	(0.195)
Observations	915	11201	18694	12059	5692
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 3.14: Multivariate Logit analysis detailing the mother's characteristics as risk factors for being underweight.

		1 - W anemia & dv	2 - No anemia & dv
		odds ratio	odds ratio
Dependent Variable: Child Underweight			
First child born before first marriage	OWC	1.133	1.028
		(0.362)	(0.0664)
First sex not at union	First sex	1.141*	0.994
		(0.0830)	(0.0391)
Never used modern contraception	FP	1.140**	1.210***
		(0.0679)	(0.0426)
Not heard of AIDS	AIDS	1.096	1.193***
		(0.0812)	(0.0554)
Smokes	Smokes	0.749***	0.854**
		(0.0728)	(0.0604)
Education	Completed Primary	1.170	1.235***
		(0.123)	(0.0750)
	No education or incomplete primary	1.390***	1.444***
		(0.103)	(0.0652)
BMI	Severe underweight	2.312***	2.422***
		(0.276)	(0.224)
	Underweight	1.505***	1.532***
		(0.0933)	(0.0613)
	Overweight	0.557***	0.535***
		(0.0682)	(0.0356)
	Obese	0.587**	0.550***
		(0.150)	(0.0751)
Wealth	Poorest	2.473***	1.972***
		(0.280)	(0.117)
	Poorer	1.923***	1.648***
		(0.206)	(0.0947)
	Middle	1.646***	1.487***
		(0.157)	(0.0805)
	Rich	1.518***	1.320***
		(0.133)	(0.0679)
Age	Age Band 12-15	1.525	1.682***
		(0.391)	(0.219)
	Age Band 15-18	1.269**	1.325***
		(0.134)	(0.0815)
	Age Band 18-21	1.098	1.171***
		(0.0989)	(0.0660)
	Age Band 21-24	1.022	1.081
		(0.0940)	(0.0637)

Height	<145cm	3.688***	3.850***
		(0.477)	(0.276)
	145.9-149.9cm	2.905***	2.925***
		(0.320)	(0.163)
	150-154.9cm	2.065***	1.947***
		(0.219)	(0.0965)
	155-159.9cm	1.473***	1.516***
		(0.161)	(0.0741)
Anemia	Mild	1.049	
		(0.0627)	
	Moderate	1.214**	
		(0.0961)	
	Severe	1.013	
		(0.217)	
Domestic Violence	DV	1.019	
		(0.0678)	
Observations		7796	27396
Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1			

4. Stunting

Table 4.1: Child stunting frequency by mother's age

		Age Band 12-15		Age Band 15-18		Age Band 18-21		Age Band 21-24		Age Band 24-27	
		Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample
Not Stunted	0	455	45.77	6,260	53.92	11,649	61.04	8,304	68.17	4,465	76.09
Stunted	1	539	54.23	5,349	46.08	7,436	38.96	3,877	31.83	1,403	23.91
		994	100	11,609	100	19,085	100	12,181	100	5,868	100

Table 4.2: The effect of mother's age group on child stunting. (Age band 24-27 absorbed)

	odds ratio
Dependent Variable: Child stunted	
Age Band 12-15	3.717***
	(0.278)
Age Band 15-18	2.497***
	(0.0959)
Age Band 18-21	1.849***
	(0.0661)
Age Band 21-24	1.407***
	(0.0531)
Observations	49737
Robust z-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 4.3: The effect of the child being born before the mother's first marriage on child stunting. (Variable name OWC) (First child born after first marriage absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
OWC	1.103	0.973	0.959	1.012	1.700***
	(0.248)	(0.0610)	(0.0547)	(0.0874)	(0.234)
Observations	799	9954	17002	11122	5353
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.4: The effect of the mother not have first sex at union on child stunting. (Variable name First sex) (First sex at union absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
First Sex	1.009	0.831***	0.892**	0.925	0.773***
	(0.209)	(0.0472)	(0.0413)	(0.0542)	(0.0720)
Observations	844	10466	16852	10210	4779
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.5: The effect of the mother never having used modern contraception on child stunting. (Variable name FP) (Ever used modern contraception absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
FP	1.647***	1.483***	1.702***	1.776***	2.097***
	(0.277)	(0.0662)	(0.0598)	(0.0800)	(0.148)
Observations	989	11609	19085	12174	5861
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.6: The effect of the mother not having heard of AIDS on child stunting. (Variable name AIDS) (Heard of AIDS absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
AIDS	1.243	1.664***	2.131***	2.633***	2.612***
	(0.244)	(0.0991)	(0.109)	(0.182)	(0.301)
Observations	950	11178	18248	11602	5580
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.7: The effect of the mother's anemia status on child stunting. (Not anemic absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
mild	0.787	1.099	1.184***	1.077	1.247**
	(0.230)	(0.0759)	(0.0594)	(0.0668)	(0.121)
moderate	0.685	1.232**	1.355***	1.441***	1.324*
	(0.249)	(0.115)	(0.0934)	(0.129)	(0.201)
severe	0.372	1.175	1.163	1.876**	2.238*
	(0.290)	(0.310)	(0.246)	(0.515)	(1.069)
Observations	343	4677	9173	6140	2908
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.8: The effect of the mother smoking cigarettes, pipe, snuff, or traditional substance on child stunting. (Does not smoke absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
smokes	0.799	1.198	1.159	1.110	1.406**
	(0.355)	(0.149)	(0.105)	(0.126)	(0.236)
Observations	569	7829	13893	9024	4217
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.9: The effect of the mother being slapped often or sometimes on child stunting. Domestic violence (DV) is coded as one if the respondent is slapped "often" or "sometimes". (Not being slapped often or sometimes absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
dv	0.746	1.214*	1.205***	1.236**	1.345*
	(0.282)	(0.121)	(0.0871)	(0.124)	(0.233)
Observations	172	2446	5011	3457	1755
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.10: The effect of mother's education level on child stunting. (Some secondary or more absorbed)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
Completed Primary	1.856**	1.453***	1.421***	1.773***	1.884***
	(0.507)	(0.0986)	(0.0795)	(0.132)	(0.232)
No education or incomplete primary	2.189***	2.240***	2.269***	2.393***	2.931***
	(0.430)	(0.114)	(0.0872)	(0.124)	(0.245)
Observations	989	11609	19084	12174	5861
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.11: The effect of the mother's BMI status on child stunting. (Normal BMI absorbed)
Ranges for BMI: Severe underweight<16; Underweight 16-18.4; Normal 18.5-24.9; Overweight 25-29.9; Obese 30+

Sample Age Band	12-15	15-18	18-21	21-24	27-29
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
Severe underweight	1.552	0.987	1.168	1.442**	2.348***
	(1.339)	(0.165)	(0.144)	(0.213)	(0.592)
Underweight	1.173	1.163**	1.071	1.201***	1.758***
	(0.250)	(0.0724)	(0.0532)	(0.0795)	(0.195)
Overweight	0.721	0.786***	0.652***	0.654***	0.711***
	(0.176)	(0.0518)	(0.0329)	(0.0398)	(0.0636)
Obese	0.753	0.472***	0.500***	0.478***	0.619***
	(0.327)	(0.0658)	(0.0494)	(0.0513)	(0.0861)
Observations	938	11116	18329	11678	5612
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.12: The effect of the mother's household wealth quintile on child stunting. (Richest absorbed)

	12-15	15-18	18-21	21-24	27-29
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
Poorest	4.039***	3.271***	3.948***	4.002***	5.177***
	(1.299)	(0.247)	(0.231)	(0.295)	(0.602)
Poorer	2.582***	2.274***	2.837***	2.881***	3.164***
	(0.815)	(0.168)	(0.161)	(0.203)	(0.363)
Middle	1.846**	1.802***	2.387***	2.394***	2.613***
	(0.576)	(0.134)	(0.132)	(0.161)	(0.267)
Rich	1.922**	1.529***	1.736***	1.746***	1.669***
	(0.623)	(0.117)	(0.0967)	(0.112)	(0.158)
Observations	946	11019	18428	11833	5730
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.13: The effect of the mother's height on child stunting. (>160 cm absorbed)

	12-15	15-18	18-21	21-24	27-29
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child stunted					
<145cm	8.896***	6.241***	7.381***	6.304***	7.907***
	(3.053)	(0.645)	(0.618)	(0.679)	(1.232)
145.9-149.9cm	6.130***	4.208***	3.809***	3.426***	3.831***
	(1.676)	(0.311)	(0.222)	(0.257)	(0.457)
150-154.9cm	3.325***	2.377***	2.291***	2.072***	2.239***
	(0.827)	(0.148)	(0.113)	(0.132)	(0.229)
155-159.9cm	2.066***	1.655***	1.690***	1.523***	1.440***
	(0.471)	(0.0989)	(0.0798)	(0.0919)	(0.143)
Observations	957	11285	18617	11873	5697
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 4.14: Multivariate Logit analysis detailing the effect of mother's characteristics as risk factors affecting child stunting.

		1 - W anemia & dv	2 - No anemia & dv
		odds ratio	odds ratio
Dependent Variable: Child stunted			
First child born before first marriage	OWC	1.010	1.179***
		(0.279)	(0.0604)
First sex not at union	First sex	1.037	0.970
		(0.0753)	(0.0347)
Never used modern contraception	FP	1.194***	1.195***
		(0.0679)	(0.0365)
Not heard of AIDS	AIDS	1.277***	1.260***
		(0.0940)	(0.0572)
Smokes	Smokes	1.129	0.990
		(0.113)	(0.0669)
Education	Completed Primary	0.993	1.186***
		(0.0996)	(0.0582)
	No education or incomplete primary	1.197***	1.401***
		(0.0828)	(0.0538)
BMI	Severe underweight	1.322**	1.306***
		(0.167)	(0.127)
	Underweight	1.085	1.088**
		(0.0658)	(0.0422)
	Overweight	0.778**	0.773***
		(0.0769)	(0.0360)
	Obese	0.720	0.575***
		(0.149)	(0.0535)
Wealth	Poorest	2.469***	2.249***
		(0.270)	(0.118)
	Poorer	2.012***	1.863***
		(0.200)	(0.0913)
	Middle	1.946***	1.719***
		(0.173)	(0.0791)
	Rich	1.688***	1.475***
		(0.137)	(0.0638)
Age	Age Band 12-15	2.351***	2.025***
		(0.575)	(0.232)
	Age Band 15-18	1.995***	1.562***
		(0.206)	(0.0834)
	Age Band 18-21	1.497***	1.362***
		(0.126)	(0.0661)
	Age Band 21-24	1.315***	1.194***
		(0.114)	(0.0605)

Height	<145cm	4.828***	5.011***
		(0.581)	(0.336)
	145.9-149.9cm	3.895***	3.328***
		(0.382)	(0.162)
	150-154.9cm	2.578***	2.193***
		(0.240)	(0.0913)
	155-159.9cm	1.797***	1.644***
		(0.170)	(0.0643)
Anemia	Mild	1.067	
		(0.0605)	
	Moderate	1.203**	
		(0.0918)	
	Severe	1.154	
		(0.236)	
Domestic Violence	DV	0.927	
		(0.0591)	
Observations		7622	26755
Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1			

5. Wasting

Table 5.1 Child wasting frequency by mother's age

		Age Band 12-15		Age Band 15-18		Age Band 18-21		Age Band 21-24		Age Band 24-27	
		Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample
Not wasted	0	914	92.51	10,678	92.25	17,573	92.42	11,215	92.68	5,432	93.29
Wasted	1	74	7.49	897	7.75	1,442	7.58	886	7.32	391	6.71
		988	100	11,575	100	19,015	100	12,101	100	5,823	100

Table 5.2: The effect of the age group of the mother on child wasting. (Age band 24-27 absorbed)

	odds ratio
Dependent Variable: Child Wasted	
Age Band 12-15	1.161
	(0.157)
Age Band 15-18	1.259***
	(0.0844)
Age Band 18-21	1.148**
	(0.0713)
Age Band 21-24	1.081
	(0.0709)
Observations	49451
Robust z-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 5.3: The effect of the child being born before the mother's first marriage on child wasting. (Variable name OWC) (First child born after first marriage absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
OWC	0.553	1.043	1.117	1.014	1.253
	(0.318)	(0.144)	(0.140)	(0.193)	(0.363)
Observations	405	9426	16580	10831	4762
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.4: The effect of the mother's first sex not at union on child wasting. (Variable name First sex) (First sex at union absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
First Sex	0.736	0.893	0.977	0.925	0.926
	(0.261)	(0.0895)	(0.0786)	(0.0939)	(0.133)
Observations	447	9955	16668	9970	4321
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.5: The effect of the mother never having used modern contraception on child wasting. (Variable name FP) (Ever used modern contraception absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
FP	1.390	1.343***	1.317***	1.030	1.252*
	(0.419)	(0.114)	(0.0842)	(0.0810)	(0.145)
Observations	565	10985	18633	11850	5198
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.6: The effect of the mother never having heard of AIDS on child wasting. (Variable name AIDS) (Heard of AIDS absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
AIDS	1.970**	1.453***	1.611***	1.286**	1.508**
	(0.581)	(0.135)	(0.123)	(0.141)	(0.270)
Observations	565	10715	18055	11436	5132
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.7: The effect of the mother's anemia status on child wasting. (Not anemic absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
Mild	1.023	1.023	1.186**	0.945	1.351**
	(0.552)	(0.121)	(0.0974)	(0.0940)	(0.191)
Moderate	0.431	1.202	1.170	0.983	1.161
	(0.318)	(0.178)	(0.131)	(0.137)	(0.260)
Severe	0.956	1.882*	1.254	1.411	1.135
	(1.147)	(0.679)	(0.385)	(0.534)	(0.860)
Observations	186	4524	8935	5923	2725
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.8: The effect of the mother smoking cigarettes, pipe, snuff, or traditional substance on child wasting. (Does not smoke absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
Smokes	0.842	1.332	0.856	0.799	1.118
	(0.545)	(0.235)	(0.125)	(0.158)	(0.281)
Observations	369	7757	13576	8863	3930
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.9: The effect of the mother being slapped sometimes or often on child wasting. Domestic violence (DV) is coded as one if the respondent is slapped "often" or "sometimes". (Not being slapped sometimes or often absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
DV	1.699	1.043	0.966	1.108	1.649**
	(1.238)	(0.165)	(0.109)	(0.158)	(0.394)
Observations	103	2409	5010	3428	1625
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.10: The effect of mother's education level on child wasting. (Some secondary or more absorbed)

	12-15	15-18	18-21	21-24	27-29
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
Completed Primary	1.651	1.187	0.965	1.448***	2.011***
	(0.908)	(0.171)	(0.117)	(0.207)	(0.429)
No education or incomplete primary	1.764	1.592***	1.387***	1.551***	1.784***
	(0.656)	(0.151)	(0.0962)	(0.135)	(0.244)
Observations	565	10985	18632	11850	5198
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.11: The effect of mother's BMI status on child wasting. (Normal BMI absorbed)
Ranges for BMI: Severe underweight<16; Underweight 16-18.4; Normal 18.5-24.9; Overweight 25-29.9; Obese 30+

Sample Age Band	12-15	15-18	18-21	21-24	27-29
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
Severe underweight	40.20***	2.980***	3.076***	2.675***	2.217**
	(46.22)	(0.579)	(0.430)	(0.468)	(0.702)
Underweight	1.646	1.497***	1.727***	1.512***	2.269***
	(0.539)	(0.140)	(0.125)	(0.147)	(0.335)
Overweight	1.164	0.526***	0.707***	0.843	0.607***
	(0.760)	(0.100)	(0.0832)	(0.0981)	(0.106)
Obese		0.978	0.711	0.525***	0.715
		(0.313)	(0.162)	(0.119)	(0.187)
Observations	539	10610	17998	11538	5069
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.12: The effect of mother's household wealth quintile on child wasting. (Richest absorbed)

	12-15	15-18	18-21	21-24	27-29
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
Poorest	3.271**	1.556***	1.644***	1.638***	1.403*
	(1.943)	(0.198)	(0.166)	(0.197)	(0.286)
Poorer	2.008	1.278*	1.606***	1.251*	1.584**
	(1.175)	(0.170)	(0.159)	(0.150)	(0.288)
Middle	1.600	1.202	1.463***	1.433***	1.325*
	(0.945)	(0.158)	(0.139)	(0.154)	(0.220)
Rich	0.932	1.148	1.299***	0.969	1.070
	(0.636)	(0.157)	(0.124)	(0.106)	(0.164)
Observations	565	10422	17936	11576	5088
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.13: The effect of mother's height on child wasting. (>160 cm absorbed)

	(1)	(2)	(3)	(4)	(5)
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Wasted					
<145cm	1.478	2.036***	1.171	1.561***	1.817**
	(0.781)	(0.332)	(0.162)	(0.267)	(0.450)
145.9-149.9cm	0.771	1.698***	1.252**	1.242*	1.747***
	(0.386)	(0.217)	(0.126)	(0.156)	(0.329)
150-154.9cm	1.283	1.407***	1.100	1.179	1.363*
	(0.569)	(0.160)	(0.0967)	(0.130)	(0.221)
155-159.9cm	0.900	1.151	0.982	1.026	1.079
	(0.412)	(0.132)	(0.0842)	(0.109)	(0.172)
Observations	559	10762	18274	11726	5144
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 5.14: Multivariate Logit analysis detailing mother's characteristics as risk factors and the effect on child wasting.

		1 - W anemia & dv	2 - No anemia & dv
		odds ratio	odds ratio
Dependent Variable: Child Wasted			
First child born before first marriage	OWC	0.477	0.969
		(0.358)	(0.0994)
First sex not at union	First sex	1.136	1.057
		(0.110)	(0.0603)
Never used modern contraception	FP	1.072	1.061
		(0.0826)	(0.0536)
Not heard of AIDS	AIDS	1.047	1.131*
		(0.102)	(0.0728)
Smokes	Smokes	0.832	0.874
		(0.111)	(0.0860)
Education	Completed Primary	1.115	1.132
		(0.156)	(0.100)
	No education or incomplete primary	1.398***	1.310***
		(0.132)	(0.0807)
BMI	Severe underweight	3.088***	2.796***
		(0.396)	(0.288)
	Underweight	1.544***	1.555***
		(0.124)	(0.0843)
	Overweight	0.636***	0.747***
		(0.102)	(0.0688)
	Obese	0.687	0.845
		(0.211)	(0.150)
Wealth	Poorest	1.179	1.144
		(0.166)	(0.0969)
	Poorer	0.943	1.114
		(0.127)	(0.0886)
	Middle	1.043	1.115
		(0.125)	(0.0830)
	Rich	0.985	1.038
		(0.109)	(0.0737)
Age	Age Band 12-15	0.650	0.687*
		(0.231)	(0.143)
	Age Band 15-18	0.902	0.942
		(0.123)	(0.0798)
	Age Band 18-21	1.004	0.964
		(0.117)	(0.0740)
	Age Band 21-24	1.072	0.990
		(0.123)	(0.0776)

Height	<145cm	1.177	1.540***
		(0.184)	(0.157)
	145.9-149.9cm	1.329**	1.486***
		(0.167)	(0.116)
	150-154.9cm	1.064	1.287***
		(0.124)	(0.0881)
	155-159.9cm	0.847	1.122*
		(0.107)	(0.0771)
Anemia	Mild	0.970	
		(0.0749)	
	Moderate	0.959	
		(0.0983)	
	Severe	1.179	
		(0.312)	
Domestic Violence	DV	0.969	
		(0.0834)	
Observations		7581	26722
Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1			

6. Diarrhea

Table 6.1: Child's Diarrhea Frequency by Mother's Age.

	Age Band 12-15		Age Band 15-18		Age Band 18-21		Age Band 21-24		Age Band 24-27	
	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample
No diarrhea	909	84.64	10,612	84.62	17,640	85.96	11,386	87.05	5,594	89.36
Diarrhea	165	15.36	1,929	15.38	2,881	14.04	1,694	12.95	666	10.64
	1,074	100	12,541	100	20,521	100	13,080	100	6,260	100

Table 6.2: The effect of mother's age group on whether the child has had diarrhea in the two weeks prior to the interview. (Age band 24-27 absorbed)

	odds ratio
Dependent Variable: Child Diarrhea	
Age Band 12-15	1.769***
	(0.176)
Age Band 15-18	1.506***
	(0.0757)
Age Band 18-21	1.303***
	(0.0613)
Age Band 21-24	1.228***
	(0.0605)
Observations	53476
Robust z-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 6.3: The effect of whether the child was born before the mother's first marriage on whether the child has had diarrhea in the two weeks prior to the interview (variable name OWC). (First child born after first marriage absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
OWC	0.822	1.084	1.155**	1.199*	1.048
	(0.242)	(0.0808)	(0.0779)	(0.119)	(0.176)
Observations	846	10707	18198	11919	5685
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.4: The effect of the mother having had first sex not at union on whether the child has had diarrhea in the two weeks prior to the interview. (Variable name First sex) (First sex at union absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
First Sex	1.470	1.074	1.161**	1.036	0.821
	(0.397)	(0.0853)	(0.0726)	(0.0816)	(0.113)
Observations	905	11316	18378	11282	5247
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.5: The effect of the mother never having used modern contraception on whether the child has had diarrhea in the two weeks prior to the interview. (Variable name FP) (Ever used modern contraception absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
FP	0.798	1.002	0.996	1.006	1.157
	(0.180)	(0.0596)	(0.0471)	(0.0617)	(0.110)
Observations	1051	12525	20442	13073	6236
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.6: The effect of the mother not having heard of AIDS on whether the child has had diarrhea in the two weeks prior to the interview. (Variable name AIDS) (Heard of AIDS absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
AIDS	0.785	1.143*	1.031	0.829*	1.088
	(0.219)	(0.0907)	(0.0761)	(0.0887)	(0.188)
Observations	1009	12061	19711	12553	5992
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.7: The effect of the mother's anemia status on whether the child has had diarrhea in the two weeks prior to the interview. (Not anemic absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
Mild	1.075	0.959	0.960	1.009	1.099
	(0.382)	(0.0945)	(0.0713)	(0.0921)	(0.154)
Moderate	1.357	1.097	1.159	0.986	0.904
	(0.642)	(0.149)	(0.117)	(0.139)	(0.218)
Severe	1.228	1.711	0.862	1.322	0.824
	(1.367)	(0.612)	(0.294)	(0.521)	(0.671)
Observations	339	4956	9702	6490	3055
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.8: The effect of the mother smoking cigarettes, pipe, snuff, or traditional substance on whether the child has had diarrhea in the two weeks prior to the interview. (Does not smoke absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
Smokes	0.987	1.364*	1.260	1.145	1.123
	(0.593)	(0.257)	(0.180)	(0.225)	(0.298)
Observations	603	8401	14718	9469	4375
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.9: The effect of the mother being slapped sometimes or often on whether the child has had diarrhea in the two weeks prior to the interview.
Domestic violence (DV) is coded as one if the respondent is slapped “often” or “sometimes”. (Not being slapped or sometimes or often is absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
DV	1.271	1.443***	1.273**	1.351**	1.580*
	(0.642)	(0.184)	(0.126)	(0.180)	(0.369)
Observations	188	2734	5585	3884	1928
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.10: The effect of the mother’s education status on whether the child has had diarrhea in the two weeks prior to the interview. (Some secondary or more absorbed)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
Completed Primary	1.312	1.104	1.053	1.287**	1.005
	(0.480)	(0.0986)	(0.0806)	(0.126)	(0.175)
No education or incomplete primary	0.940	1.176**	1.090	1.302***	1.370***
	(0.254)	(0.0777)	(0.0582)	(0.0891)	(0.148)
Observations	1051	12525	20442	13073	6236
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.11: The effect of the mother's BMI status on whether the child has had diarrhea in the two weeks prior to the interview. (Normal BMI absorbed)
Ranges for BMI: Severe underweight<16; Underweight 16-18.4; Normal 18.5-24.9; Overweight 25-29.9; Obese 30+

Sample Age Band	12-15	15-18	18-21	21-24
	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea				
Severe underweight	1.246	1.150	0.734	1.063
	(1.541)	(0.262)	(0.152)	(0.247)
Underweight	0.542**	0.875	0.926	0.947
	(0.165)	(0.0826)	(0.0686)	(0.0968)
Overweight	0.946	1.113	0.876**	0.937
	(0.303)	(0.0891)	(0.0583)	(0.0732)
Obese	0.743	0.734*	0.881	1.030
	(0.421)	(0.130)	(0.102)	(0.122)
Observations	978	11723	19214	12147
Robust z-statistics in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Table 6.12: The effect of the mother's household wealth quintile on whether the child has had diarrhea in the two weeks prior to the interview. (Richest absorbed)

	12-15	15-18	18-21	21-24	27-29
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea					
Poorest	1.194	1.319***	1.298***	1.762***	1.358**
	(0.467)	(0.129)	(0.0977)	(0.162)	(0.201)
Poorer	1.502	1.201*	1.157*	1.481***	1.666***
	(0.573)	(0.119)	(0.0859)	(0.134)	(0.230)
Middle	1.315	1.250**	1.144*	1.444***	1.272*
	(0.513)	(0.124)	(0.0845)	(0.126)	(0.166)
Rich	1.052	1.085	1.059	1.328***	1.232*
	(0.446)	(0.113)	(0.0799)	(0.114)	(0.150)
Observations	1001	11769	19683	12666	6070
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 6.13: The effect of mother's height on whether the child has had diarrhea in the two weeks prior to the interview. (>160 cm absorbed)

	(1)	(2)	(3)	(4)
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Diarrhea				
<145cm	2.125*	1.314**	1.184	1.029
	(0.887)	(0.165)	(0.127)	(0.157)
145.9-149.9cm	1.427	1.097	1.178**	0.989
	(0.511)	(0.102)	(0.0902)	(0.0974)
150-154.9cm	1.360	1.037	1.113*	1.061
	(0.419)	(0.0822)	(0.0690)	(0.0845)
155-159.9cm	1.510	0.951	1.097	0.910
	(0.437)	(0.0735)	(0.0639)	(0.0693)
Observations	1000	11898	19511	12346
Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1				

Table 6.14: Multivariate Logit analysis detailing the effect of mother's characteristics as risk factors on whether the child has had diarrhea in the two weeks prior to the interview.

		1 - W anemia & dv	2 - No anemia & dv
		odds ratio	odds ratio
Dependent Variable: Child Diarrhea			
First child born before first marriage	OWC	0.907	1.163**
		(0.361)	(0.0739)
First sex not at union	First sex	0.880	1.008
		(0.0960)	(0.0495)
Never used modern contraception	FP	1.126	0.966
		(0.104)	(0.0423)
Not heard of AIDS	AIDS	1.020	0.906
		(0.125)	(0.0608)
Smokes	Smokes	1.303*	1.201*
		(0.202)	(0.128)
Education	Completed Primary	0.980	1.146**
		(0.159)	(0.0793)
	No education or incomplete primary	1.167	1.214***
		(0.129)	(0.0667)
BMI	Severe underweight	1.044	0.862
		(0.201)	(0.127)
	Underweight	0.983	0.936
		(0.0984)	(0.0546)
	Overweight	0.883	0.976
		(0.141)	(0.0613)
	Obese	0.637	0.852
		(0.233)	(0.102)
Wealth	Poorest	1.008	1.326***
		(0.165)	(0.0960)
	Poorer	0.955	1.209***
		(0.149)	(0.0828)
	Middle	1.091	1.268***
		(0.148)	(0.0815)
	Rich	0.916	1.122*
		(0.118)	(0.0704)
Age	Age Band 12-15	0.876	1.044
		(0.166)	(0.0969)

	Age Band 15-18	0.996	1.051
		(0.146)	(0.0689)
	Age Band 18-21	0.971	0.983
		(0.127)	(0.0535)
	Age Band 21-24	0.993	1.008
		(0.129)	(0.0516)
Height	<145cm	2.378**	1.707***
		(0.817)	(0.258)
	145.9-149.9cm	1.374*	1.334***
		(0.224)	(0.102)
	150-154.9cm	1.198	1.221***
		(0.166)	(0.0863)
	155-159.9cm	1.253	1.151*
		(0.172)	(0.0842)
Anemia	Mild	0.987	
		(0.0889)	
	Moderate	0.984	
		(0.122)	
	Severe	0.768	
		(0.268)	
Domestic Violence	DV	1.268**	
		(0.124)	
Observations		8199	28509
Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1			

7. Anemia

Table 7.1: Child anemia frequency by mother's age

		Age Band 12-15		Age Band 15-18		Age Band 18-21		Age Band 21-24		Age Band 24-27	
		Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample	Sample Size	Percent of Sample
Not anemic	0	133	38	1,878	39.6	3,971	43.28	2,815	46.07	1,484	52.27
Anemic	1	217	62	2,865	60.4	5,204	56.72	3,295	53.93	1,355	47.73
		350	100	4,743	100	9,175	100	6,110	100	2,839	100

Table 7.2: The effect of mother's age group on child anemia. (Age band 24-27 absorbed)

	odds ratio
Dependent Variable: Child Anemia	
Age Band 12-15	1.866***
	(0.237)
Age Band 15-18	1.701***
	(0.0906)
Age Band 18-21	1.406***
	(0.0663)
Age Band 21-24	1.284***
	(0.0633)
Observations	23217
Robust z-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 7.3: The effect of the mother having her child before her first marriage on child anemia. (Variable name OWC) (First child born after first marriage absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
OWC	0.915	1.036	1.064	0.872	0.913
	(0.431)	(0.128)	(0.106)	(0.131)	(0.221)
Observations	258	4175	8325	5692	2638
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.4: The effect of the mother having first sex not at union on child anemia. (Variable name First sex) (First sex at union absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
First Sex	0.756	0.837**	1.075	0.939	0.891
	(0.309)	(0.0759)	(0.0691)	(0.0705)	(0.101)
Observations	322	4631	8685	5598	2519
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.5: The effect of the mother never having used modern contraception on child anemia. (Variable name FP) (Ever used modern contraception absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
FP	1.376	1.329***	1.392***	1.201***	1.158*
	(0.386)	(0.0960)	(0.0683)	(0.0715)	(0.101)
Observations	329	4743	9175	6110	2839
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.6: The effect of the mother having not heard of AIDS on child anemia. (Variable name AIDS) (Heard of AIDS absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
AIDS	0.995	1.397***	1.432***	1.612***	1.690***
	(0.383)	(0.124)	(0.0939)	(0.149)	(0.261)
Observations	329	4743	9174	6110	2839
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.7: The effect of the mother's degree on anemia on child anemia. (Not anemic absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
Mild	3.612***	1.852***	1.663***	1.701***	1.544***
	(1.149)	(0.142)	(0.0872)	(0.107)	(0.141)
Moderate	2.514**	2.540***	2.399***	2.469***	2.470***
	(1.058)	(0.279)	(0.187)	(0.243)	(0.373)
Severe	2.286	2.056**	5.457***	2.361***	2.302
	(2.233)	(0.693)	(1.548)	(0.677)	(1.261)
Observations	326	4688	9067	6051	2814
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.8: The effect of the mother smoking cigarettes, pipe, snuff, or traditional substance on child anemia. (Does not smoke absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
Smokes	0.693	1.057	0.879	1.013	0.803
	(0.322)	(0.154)	(0.0948)	(0.134)	(0.155)
Observations	299	4418	8625	5811	2684
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.9: The effect of the mother being slapped often or sometimes on child anemia. Domestic violence (DV) is coded as one if the respondent is slapped "often" or "sometimes". (Not being slapped sometimes or often absorbed)

Sample Age Band	12-15	15-18	18-21	21-24	24-27
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
DV	1.446	1.265*	1.224**	1.212*	1.763***
	(0.808)	(0.164)	(0.111)	(0.140)	(0.332)
Observations	91	1325	3229	2453	1243
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.10: The effect of mother's education on child anemia. (Some secondary or more absorbed)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
Completed Primary	1.654	1.318**	1.169**	1.154	1.292
	(0.883)	(0.145)	(0.0930)	(0.121)	(0.214)
No education or incomplete primary	2.986***	1.391***	1.596***	1.683***	1.482***
	(1.051)	(0.113)	(0.0874)	(0.118)	(0.165)
Observations	329	4743	9175	6110	2839
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.11: The effect of the mother's BMI status on child anemia. (Normal BMI absorbed)
Ranges for BMI: Severe underweight<16; Underweight 16-18.4; Normal 18.5-24.9; Overweight 25-29.9; Obese 30+

Sample Age Band	12-15	15-18	18-21	21-24	27-29
	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
Severe underweight	2.068	1.040	1.462**	1.397*	0.990
	(2.727)	(0.236)	(0.232)	(0.241)	(0.277)
Underweight	1.506	1.133	1.097	1.045	1.201
	(0.551)	(0.109)	(0.0729)	(0.0870)	(0.159)
Overweight	1.010	0.800**	0.818***	0.825**	0.717***
	(0.455)	(0.0909)	(0.0607)	(0.0670)	(0.0804)
Obese	0.694	0.678*	0.763**	0.742**	0.773
	(0.667)	(0.142)	(0.105)	(0.101)	(0.127)
Observations	322	4644	8976	5985	2775
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.12: The effect of the mother's household wealth quintile on child anemia. (Richest absorbed)

	12-15	15-18	18-21	21-24	27-29
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
Poorest	12.11***	1.774***	2.008***	1.897***	1.820***
	(8.195)	(0.223)	(0.159)	(0.181)	(0.278)
Poorer	11.98***	1.483***	1.864***	1.681***	1.976***
	(7.991)	(0.188)	(0.145)	(0.156)	(0.293)
Middle	6.208***	1.418***	1.628***	1.372***	1.505***
	(4.236)	(0.182)	(0.120)	(0.115)	(0.192)
Rich	5.817**	1.260*	1.434***	1.328***	1.480***
	(4.133)	(0.167)	(0.105)	(0.104)	(0.164)
Observations	329	4743	9175	6110	2839
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.13: The effect of mother's height on child anemia. (>160 cm absorbed)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	odds ratio	odds ratio	odds ratio	odds ratio	odds ratio
Dependent Variable: Child Anemia					
<145cm	0.617	1.124	1.247**	1.139	1.381*
	(0.350)	(0.165)	(0.134)	(0.151)	(0.257)
145.9-149.9cm	1.061	0.994	1.103	1.050	1.138
	(0.492)	(0.115)	(0.0893)	(0.102)	(0.164)
150-154.9cm	0.642	1.005	1.120	1.010	0.984
	(0.274)	(0.104)	(0.0800)	(0.0848)	(0.121)
155-159.9cm	0.775	1.045	0.980	0.927	0.923
	(0.337)	(0.107)	(0.0678)	(0.0749)	(0.109)
Observations	328	4709	9119	6075	2821
Robust z-statistics in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Table 7.14: Multivariate Logit analysis detailing the effect of mother's characteristics as risk factors on child anemia.

		1 - W anemia & dv	2 - No anemia & dv
		odds ratio	odds ratio
Dependent Variable: Child Anemia			
First child born before first marriage	OWC	0.783	1.090
		(0.225)	(0.0825)
First sex not at union	First sex	1.098	1.017
		(0.0769)	(0.0438)
Never used modern contraception	FP	1.049	1.088**
		(0.0596)	(0.0401)
Not heard of AIDS	AIDS	1.145*	1.136**
		(0.0859)	(0.0609)
Smokes	Smokes	0.764***	0.834***
		(0.0711)	(0.0586)
Education	Completed Primary	1.098	1.078
		(0.113)	(0.0639)
	No education or incomplete primary	1.286***	1.315***
		(0.0916)	(0.0623)
BMI	Severe underweight	1.189	1.231**
		(0.151)	(0.126)
	Underweight	1.050	1.050
		(0.0667)	(0.0479)
	Overweight	1.055	0.900*
		(0.0947)	(0.0489)
	Obese	0.952	0.891
		(0.172)	(0.0889)
Wealth	Poorest	1.599***	1.568***
		(0.167)	(0.0999)
	Poorer	1.556***	1.498***
		(0.149)	(0.0903)
	Middle	1.297***	1.334***
		(0.108)	(0.0734)
	Rich	1.304***	1.305***
		(0.0972)	(0.0668)
Age	Age Band 12-15	1.209	1.193
		(0.308)	(0.183)
	Age Band 15-18	1.291**	1.271***
		(0.129)	(0.0810)
	Age Band 18-21	1.181**	1.126**
		(0.0943)	(0.0626)
	Age Band 21-24	1.285***	1.138**
		(0.102)	(0.0644)

Height	<145cm	1.287**	1.081
		(0.150)	(0.0812)
	145.9-149.9cm	0.986	0.966
		(0.0902)	(0.0566)
	150-154.9cm	1.054	1.008
		(0.0888)	(0.0523)
	155-159.9cm	0.954	0.975
		(0.0816)	(0.0494)
Anemia	Mild	1.617***	
		(0.0899)	
	Moderate	2.496***	
		(0.207)	
	Severe	3.126***	
		(0.737)	
Domestic Violence	DV	1.151**	
		(0.0738)	
Observations		7512	18295
Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1			