Impact of Parental Health Shocks on Children's Educational Outcomes

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Abstract

This study examines the impact of parental health shocks on a child's educational attainment using panel data from the Young Lives Study, a longitudinal study of childhood poverty conducted in four low income countries: Ethiopia, India, Peru and Vietnam. We examine the effects of health shocks to caretakers, such as death and illness among parents (mother, father or both), on child's education outcomes. Educational outcomes are measured using school enrollment and grade attainment. Our analysis reveals that death of both parents significantly lowers the probability of enrolment among younger children (7-8 years old). A sudden death of a mother lowers enrolment among 11-12 years old whereas among older children (14-15 years old), a sudden death of a father significantly reduces the likelihood of children remaining enrolled at school. Similarly grade attainment is adversely affected by parental health shocks.

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One of the worst and traumatic events that can occur in childhood is to experience death of a parent or both parents. Such shocks can have significant and long term impact on human capital formation. Parental health shocks influence students' educational outcomes in a variety of ways. First, parental health shocks increase stress, anxiety, and loss of confidence among children. There is a negative impact on children's sense of optimism when a parent dies. Parental death or illness inarguably reduces parental involvement in the child's education which is likely to impede the educational progress of the child. Second, parental health shocks can have significant economic consequences. Households may experience loss of income due to parents (one or both) death and/or reduced economic resources due to prolonged parental illness. In developing countries where the poor have almost no access to credit or insurance markets, households tend to reduce expenditure by pulling out children from schools and/or employ children in informal sector to supplement income. Girls are often required to drop out of school and are required to help care for their younger siblings. Thus the death or illness of one or both parents can reduce the likelihood that children remain in school. Finally, loss of income resulting from parental health shock can adversely impact a child's physical development. There is evidence that such shocks lead to higher percent of children being undernourished and stunted. The physical impediments consequently affect the educational success of the child. In this paper, we consider the impact of parental health shocks, such as death or prolonged illness, on human capital formation among children.

Parental death can affect children's education differentially in the short and long run. There is some ambiguity regarding whether younger or older children are more severely affected. Dhanaraj (2016) used the YLS data in India and found that adverse parental health shocks led to temporary delay in primary school enrolment for the younger cohort while schooling attainment was significantly reduced for the older cohort. Case et al. (2014) found that five years after the 2004 Indian Ocean tsunami, there were deleterious impacts of the tsunami on older boys and girls, whereas the effects on

younger children were more muted. Older children who lost their parents to the tsunami spent more time working and had substantially lower levels of education.

The question whether the death of a mother or the death of a father has a greater impact on children's schooling has also been scrutinized. Most of the evidence suggests that mother's death has more severe impact on children than father's death. For instance, Himaz (2013) used the YLS data for Ethiopia and found that the death of a mother during the child's middle childhood (8-12 years age) were associated with reduced school enrolment, and with children doing more paid work by the age of 15 years. The death of a mother during the child's adolescence produced less observable impacts on education, while the death of a father was associated with reductions in enrolment, test scores, and sense of agency. Giminez et al. (2013) used data in Taiwan and found that children's educational attainment was, on an average, more affected by the death of a mother than the death of a father. Similarly, Evans and Miguel (2007), Case and Ardington (2006) and Chen et al. (2009) found that maternal death has a much larger impact on child education than paternal death. Finally, Gertler et al. (2004) used household data from Indonesia and found that recent death of a parent had a large negative effect on the child's school enrollment, irrespective of the gender of the child and of the parent who dies.

There is extensive literature analyzing the impact of HIV/AIDS related deaths on educational outcomes among orphans in Africa. Bandara et al. (2015) and Beegle et al. (2010) analyzed data on children in Tanzania. Bandara et al. (2015) treated sudden deaths due to illness as non-income shock to the household since the uncertainty did not originate from a household's income-generating activity. They found that death in the household led to a significant increase in labor hours worked by a child. Beegle et al. (2010) showed that orphans in Tanzania had completed one year less of schooling than non-orphans. Woldehanna and Hagos (2012) considered death or illness as idiosyncratic shocks to the households using the case of Ethiopia. They argued that even after households have recovered from the

immediate effects of the shocks, they may not recover from the poverty caused by them. Consequently, children are forced to drop out of school or are unable to attend classes regularly because either they are required to work at home or outside to generate additional income. Using data for Kenya, Evans and Miguel (2007) showed that a child was approximately 5% less likely to be in school after the mother died. This effect appeared about two years prior to the mother's death, because of parental illness resulting from HIV/AIDS, and persisted for several years after the death. The negative effects of poor health may be reversed. Zivin et al. (2009), who also used data for Kenya, found that health improvements in adults affected by HIV/AIDS resulted in a higher school attendance among children. Case and Ardington (2006) used data for South Africa and found that maternal death negatively affects subsequent enrollment, school attainment, and education spending. Case et al. (2004) found that, even after controlling for resources, orphans in sub-Saharan Africa were less likely to be in school than non-orphans, including non-orphans who resided in the same household.

Similar to parental death, there is evidence that parental illness has an adverse effect on children. Alam (2015) examined the impact of parental illness on children's education. Using data on Tanzanian households, he found that father's illness led to a reduction in ability to afford education for children through a decrease in household's income but at the same time it did not lead to increased child labor. Dornan and Woodhead (2015) concluded that death or illness of one or both parents intensified demands on a child's time (e.g. caring for young siblings), and reduced the likelihood that children remained in school. Bratti and Mendola (2014) found that children whose mothers reported poorer health were less likely to be enrolled in school in Bosnia-Herzegovina. They argued that a decline in parental health often resulted in households becoming poorer and hence affecting children through decline in income. Sun and Yao (2010) using Chinese panel data found that primary-school age children and girls are more susceptible to the adverse effects of parental health shocks than boys.

Given the extensive evidence in the literature, our study has the following goals. We wish to compare whether the impact of health shocks on children's educational outcomes differs by age groups, and between girls and boys. We analyze whether the shock being death or illness matters and whether a shock to father's or mother's health has a different impact. We also separate parental death as expected versus sudden. The rest of the paper is organized as follows. In Section 2, we describe the data, in Section 3 we discuss the empirical results and in Section 4 we summarize the conclusions.

2. Data Description

We use data from the Young Lives Study (YLS), conducted by the Department of International Development based at the Oxford University. The YLS is a longitudinal study which has traced children in four countries over the last 15 years. The study follows two cohorts of children - the older cohort of children was born in 1994-1995, and the younger cohort of children was born in 2001-2002. Constructed data files are available for all four rounds, namely, 2002 (round 1), 2006 (round 2), 2009 (round 3) and 2013 (round 4). Data are collected in Ethiopia, India, Peru and Vietnam, representing the four major regions (Africa, South Asia, Latin America and East Asia) of the developing world.[1] In each country, twenty data collection sites predominantly located in poor areas, are selected to reflect (broadly, not necessarily nationally) heterogeneity of location, ethnicity and religion in country populations. This random sample is designed to include a higher proportion of poor children. Attrition rate in YLS is about 5 per cent across the whole sample between Rounds 1 and 4. YLS notes that the attrition rate is not only low in absolute terms, but also when compared with attrition rates for other longitudinal studies in developing countries (Outes-Leon and Dercon 2008). Attrition rates in YLS data are provided in Table A1 in the Appendix.

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[1] In India the data are collected in one state, formerly known as Andhra Pradesh and recently divided as Andhra Pradesh and Telangana.

We do not use the entire YLS panel for lack of availability of consistent data. We include data from rounds 2, 3 and 4, since no data was collected on parental death or illness in round 1. From among the three rounds, we choose children from school appropriate age groups, namely, 7-8, 11-12 and 14-15. As summarized in Table 1, we have data on a little over 3000 children from the older cohort and about 7500 children from the younger cohort.[2]

Table 1: Panel Data from the Young Lives Study

Cohort	Born in	Data collected: Years	Data collected: Rounds	Age when observed	No. of Obs.	Death of Father (%)	Death of Mother (%)	Illness of Father (%)	Illness of Mother (%)
Old Cohort	1994-95	2006 and 2009	2 and 3	11-12 and 14-15	3,372	4.4	1.8	19.4	24.7
Young Cohort	2001-02	2009 and 2013	3 and 4	7-8 and 11-12	7,591	3.5	1.9	16.5	19.6

Notes: i) Death and Illness counts are combined for both rounds

2.1. Educational Outcome Variables

The YLS collected data on a number of indicators to measure educational development in different rounds. We focus mainly on two educational outcomes, namely, school enrolment and grade attainment, on which data is available in all the rounds. Enrolment data is based on information on whether the child was attending any formal school at the time of the interview. School grade refers to the highest grade completed by the child at the time of the interview.[3] A summary statistics on all variables is provided in Table A2 in the Appendix.

2.2. Data on Parental Death and Illness

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[2] The sample includes approximately 2,000 children from the younger age-group (henceforth, "young"), and approximately 1,000 children from the older age-group (henceforth, "old") in each country. For detailed notes on sampling design, including comparisons with national indicators, see the technical notes by Azubuike and Briones (2016).

[3] In addition to enrolment and grade data, YLS also has data on literacy and raw scores of Peabody Picture Vocabulary Test (PPVT). Data on both these variables was collected only in rounds 2 and 3 and was discontinued in round 4. Even in rounds 2 and 3, this data has several missing observations, especially among older children.

In Table 1, we list the percent of children who experienced death and illness of a parent.[4] Expectedly, death of a parent during childhood is a rare occurrence, especially when the data is not compiled during epidemics, conflicts, natural disasters and so on. About 3.5 to 4 percent children lost their father, about 2 percent lost their mother between 2006 and 2013. The incidence of illness is typically greater than that of death in a family. About 16 to 20 percent of fathers' had serious illness whereas a larger proportion (20-25 percent) of mothers' had serious illness.

3. Impact of Health Shocks on Educational Outcomes

In this section, we consider the impact of parent's death and illness on educational outcomes of children belonging to different age groups. Table 3 provides a summary statistics on two educational outcomes, namely enrolment and grade attainment, separately for children with and without parental health shocks. We consider children who are 7-8 years old from the younger cohort, 11-12 years old from both the cohorts (hence the larger sample size) and 14-15 years old from the older cohort.

We find that in all age groups, children who experienced parental death or serious illness have lower average values of educational outcomes compared to values for children who do not experience such shocks. For example, among 7 to 8 year olds, 95 percent of children with no shocks were enrolled in school compared to only 87 percent among children with death in the household. Among slightly older children (11-12 years old) enrolment rates were not significantly different, but average grade attainment was significantly lower among children with parental health shocks. The differences in both educational outcomes were significant even when children were 14-15 years old. Overall, Table 3 shows

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[4]Data on death and illness is compiled in the household questionnaire of YLS under the section economic shocks to the households. Respondents were asked to give Yes or No responses to the following questions: Have there been any changes within the family since we last came to see you? Options were I) Death of YLS child's father? II) Death of YLS child's mother? III) Death of another person from the household? IV) Illness of YLS child's father? V) Illness of YLS child's mother? VI) Illness of another person from the household? Survey questionnaire is available at: http://www.younglives.org.uk/content/round-4-questionnaires

that children with parental health shocks have significant lower educational attainment on average, compared to children without such shocks.

Table 3: Summary Statistics on Educational Outcomes

| Age / Cohort | No. of Obs. | Outcomes | Children with no Parental Health Shocks | | Children with Shocks | | | |
| | | | | | Parental Death | | Parental Illness | |
			Obs. (1)	Mean (2)	Obs. (3)	Mean (4)	Obs. (5)	Mean (6)
7-8 YC	7456	enrol	6104	0.95	150	0.87*** (0.0031)	1202	0.86*** (0.0001)
		chgrade	6104	1.39	150	1.26* (0.0673)	1202	1.11*** (0.0001)
11-12 YC & OC	10920	enrol	8931	0.96	281	0.93** (0.0124)	1708	0.96 (0.8181)
		chgrade	8931	5.10	281	4.48*** (0.0001)	1708	4.92*** (0.0001)
14-15 OC	3277	enrol	2595	0.86	102	0.75*** (0.007)	580	0.82*** (0.0079)
		chgrade	2595	7.55	102	6.59*** (0.0001)	580	6.90*** (0.0001)

Notes: i) YC denotes young cohort, OC denotes old cohort, enrol shows enrolment and chgrade shows a child's grade attainment. ii) p-values are given in brackets for the null hypothesis that there is no difference between average values with and wthout shock.

3.1. Types of Shocks: Death and Illness

We begin with a simple model, where we estimate the impact of parental health shock on a child's educational attainment when both the shock and outcome are measure in the same round.

$$Y_i = \beta_0 + \beta_1.\boldsymbol{S}_i + \beta_2.\boldsymbol{X}_i + \delta_0 F_i + (\alpha_1 I_i + \alpha_2 P_i + \alpha_3 V_i) + e_i \qquad (1)$$

In equation (1), the subscript $i = 1, \dots N$ denotes a child belonging to a particular age group. The dependent variable Y stands for educational outcomes and $\boldsymbol{S}$ is a vector of binary variables denoting death or serious illness of father, mother and both parents. Note that both the educational outcomes as well as parental health shock are recorded in the same round. We include several variables to control for household characteristics. $\boldsymbol{X}$ is a vector of a household characteristics including household wealth index, rural residence, household size, household head's age, household head's education and

household head's gender.[5] The dummy variable (F) in equation (1) indicates whether a child is female.[6] Variables (I, P, V) are country dummies for India, Peru and Vietnam. Equation (1) is separately estimated for two health shocks, namely death and illness and for two different educational outcomes, namely, a child's enrolment (Table 4) and grade attained (Table 5). Equation (1) is separately estimated for children belonging to each of the three age-groups, namely, 7-8, 11-12 and 14-15 years old.

Estimates of the linear probability model in Table 4, suggest that parental death significantly lowers the probability of a child being enrolled in school. Among younger children (7-8 years old), death of both parents lowers the probability of enrolment by nearly 80 percentage points. A mother's serious illness also has a significant negative impact on school enrolment across all age groups. A father's death gains more significance in reducing enrolment among older children (14-15 years old) suggesting that older children drop out of school and take up work (at home or outside) to make up for the lost income. We find similar negative impact of parental health shock on a child's grade attainment. Estimates in Table 5 show a significant adverse effect of a shock to mother's health on grade attainment among younger children (7-8 years old). A dummy variable on the female child shows that girls have higher grade attainment than boys among all age groups and among all countries.

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[5] Household wealth index is an average of three indices, namely, the housing quality index, access to services index, and ownership of consumer durables index. The housing quality index is an average of indicators on crowded living (scaled sleeping rooms per person) and materials of walls, roof and floor. Access to services index measures access to electricity, safe drinking water, sanitation and fuels for cooking. Finally, ownership of consumer durables is an average of a set of dummy variables indicating ownership of durables such as radio, television, bicycle, motorbike, landline and mobile phone etc. which are common across all rounds.

[6] We interact the female dummy with the death shock variable but do not find that any of the coefficients are significant. We also have data on whether a child went to a private or public school; however the data has many missing values, and the coefficients are not significant. Hence we drop both these variables.

Table 4: Impact of Parental Health Shock on School Enrolment

	7-8 Years Old		11-12 Years Old		14-15 Years Old	
OLS	Death	Illness	Death	Illness	Death	Illness
	(1)	(2)	(3)	(4)	(5)	(6)
Father only	-0.01	-0.03**	-0.01	-0.0011	-0.12**	-0.05
	(0.0328)	(0.0142)	(0.0195)	(0.0078)	(0.0526)	(0.0276)
Mother only	-0.08	-0.03**	-0.06*	0.01**	0.01	-0.04*
	(0.0522)	(0.0136)	(0.0357)	(0.0060)	(0.0603)	(0.0233)
Both parents	-0.78***	-0.08***	0.05***	0.01	0	-0.06*
	(0.0132)	(0.0264)	(0.0133)	(0.0140)	(.)	(0.0351)
Child female	0.01**	0.01**	0.0049	0.0049	-0.0003	0.0024
	(0.0053)	(0.0053)	(0.0035)	(0.0035)	(0.0119)	(0.0119)
Constant	0.77***	0.78***	0.89***	0.89***	0.78***	0.79***
	(0.0183)	(0.0185)	(0.0133)	(0.0135)	(0.0453)	(0.0453)
R-sq.	0.1894	0.1918	0.0413	0.0407	0.1225	0.1230
Total Obs.	6964	6964	10377	10377	3049	3049
Shock Obs.	114	1179	234	1689	77	573

Notes: i) Parenthesis shows robust standard errors. ii) All regressions control for household characteristics and country dummy variables. iii) For the age group 14-15 years, there are no observations with both parents death.

Table 5: Impact of Parental Health Shock on Grade Attainment

	7-8 Years Old		11-12 Years Old		14-15 Years Old	
OLS	Death	Illness	Death	Illness	Death	Illness
	(1)	(2)	(3)	(4)	(5)	(6)
Father only	0.09	-0.07*	-0.14	0.07	-0.05	-0.17
	(0.0923)	(0.0361)	(0.1045)	(0.0507)	(0.2518)	(0.1174)
Mother only	-0.10	-0.03	-0.23	-0.01	-0.44	-0.22**
	(0.1056)	(0.0339)	(0.1974)	(0.0457)	(0.4175)	(0.1052)
Both parents	-0.58***	-0.22***	0.05	-0.15	0	-0.38**
	(0.0352)	(0.0431)	(0.2866)	(0.0989)	(.)	(0.1641)
Child female	0.09***	0.09***	0.11***	0.11***	0.15***	0.16***
	(0.0172)	(0.0172)	(0.0257)	(0.0258)	(0.0555)	(0.0552)
Constant	0.43***	0.47***	2.92***	2.91***	5.15***	5.21***
	(0.0539)	(0.0548)	(0.0972)	(0.0983)	(0.2313)	(0.2313)
R-sq.	0.2881	0.2900	0.3909	0.3910	0.4225	0.4245
Total Obs.	6964	6964	10377	10377	3049	3049
Shock Obs.	114	1179	234	1689	77	573

Notes: i) Parenthesis shows robust standard errors. ii) All regressions control for household characteristics and country dummy variables. iii) For the age group 14-15 years, there are no observations with both parents death.

3.2. Types of Death: Sudden vs. Anticipated

A sudden death of a parent can have a different impact on a child's education, compared to death preceded by prolonged illness. A family's coping mechanism in the two scenarios may be quite different. A parent's serious illness followed by his/her death gives the family more time to prepare for the impact than a sudden death. Unfortunately, the YLS data does not record the cause of a parent's death. We try to differentiate the two types of deaths by an approximate measure.

$$Y_i = \beta_0 + \beta_1.\boldsymbol{D}_i + \beta_2.\boldsymbol{X}_i + \delta_0 F_i + (\alpha_1 I_i + \alpha_2 P_i + \alpha_3 V_i) + e_i \tag{2}$$

In equation (2), $\boldsymbol{D}$ is a vector which has two types of parental deaths. One where a parent dies without illness recorded in the current or previous rounds; this is what we consider as sudden death. In the other type, a parental serious illness is followed by death and this is what we consider as "not so sudden" or anticipated death. All other variables remain the same from Equation (1).

Equation (2) is separately estimated for father's and mother's death, and for two different educational outcomes, namely, a child's enrolment (Table 6) and grade attained (Table 7). Among younger children (7-8 years old), sudden death of a mother has an adverse impact on both educational outcomes; it reduces the probability of a child being enrolled at school as well as a child's grade attainment. Among 11-12 years old children, a similar adverse impact is observed with a sudden death of a mother in the household. However, if a mother's death is preceded by her illness, we notice a positive impact on grade attainment as well as a slightly higher probability of being enrolled at school. This suggests that families are able to better manage the stress on children's education, if the death is expected compared to when it is sudden. A father's sudden death lowers the likelihood of being enrolled in school only for older children (14-15 years old).

Table 6: Impact of Parental Health Shock on School Enrolment

	7-8 Years Old		11-12 Years Old		14-15 Years Old	
OLS	Father (1)	Mother (2)	Father (3)	Mother (4)	Father (5)	Mother (6)
Only Death	-0.01	-0.10*	-0.02	-0.07*	-0.13**	0.13***
	(0.0329)	(0.0588)	(0.0198)	(0.0379)	(0.0610)	(0.0301)
Illness &	-0.17	-0.21	-0.002	0.03***	-0.07	-0.05
Death	(0.1171)	(0.1332)	(0.0603)	(0.0123)	(0.1247)	(0.1650)
Child female	0.02***	0.02***	0.005	0.005	-0.006	-0.005
	(0.0056)	(0.0055)	(0.0035)	(0.0035)	(0.0122)	(0.0122)
Constant	0.87***	0.87***	0.88***	0.88***	0.77***	0.77***
	(0.0169)	(0.0169)	(0.0133)	(0.0132)	(0.0446)	(0.0445)
R-sq.	0.11	0.11	0.04	0.04	0.07	0.07
Total Obs.	6964	6964	10377	10377	3049	3049
Death Obs.	67	48	162	78	62	15

Notes: i) Parenthesis shows robust standard errors. ii) All regressions control for household characteristics.

Table 7: Impact of Parental Health Shock on Grade Attainment

	7-8 Years Old		11-12 Years Old		14-15 Years Old	
OLS	Father (1)	Mother (2)	Father (3)	Mother (4)	Father (5)	Mother (6)
Only Death	0.10	-0.21*	-0.11	-0.51**	0.12	-0.83
	(0.0945)	(0.1155)	(0.1235)	(0.2233)	(0.2856)	(0.6407)
Illness &	-0.06	-0.21	-0.23	0.51**	-1.030	-1.63***
Death	(0.2686)	(0.2816)	(0.2762)	(0.2124)	(0.7008)	(0.4313)
Child female	0.10***	0.10***	0.13***	0.13***	0.17***	0.18***
	(0.0185)	(0.0185)	(0.0285)	(0.0285)	(0.0606)	(0.0604)
Constant	0.69***	0.69***	3.83***	3.83***	6.16***	6.19***
	(0.0574)	(0.0574)	(0.1065)	(0.1064)	(0.2592)	(0.2600)
R-sq.	0.17	0.17	0.26	0.26	0.32	0.32
Total Obs.	6964	6964	10377	10377	3049	3049
Death Obs.	67	48	162	78	62	15

Notes: i) Parenthesis shows robust standard errors. ii) All regressions control for household characteristics.

4. Conclusions

Using one of the most consistent longitudinal datasets focused on children in developing countries, we find evidence of adverse impact of parental health shocks on children's educational outcomes. Our analysis considers children in three age groups, two educational outcomes and two types of health shocks, namely death and serious illness. We separately analyze the impact of shocks to the father, mother or both set of parents. We also separate death as sudden from death preceded by serious illness.

We find that among younger children (7-8 years old), death of both parents lowers the probability of enrolment by nearly 80 percentage points. Among older children (14-15 years old), the death of a father significantly reduces the likelihood of children remaining enrolled at school. We find similar negative impact of parental health shock on a child's grade attainment. Our results are consistent with evidence in the literature. Dhanaraj (2016) who also used YLS data in India and found that adverse parental health shocks led to temporary delay in primary school enrolment. Most of the evidence (Case and Ardington 2006, Evans and Miguel, 2007, and Chen et al. 2009, Himaz, 2013, Giminez et al., 2013) suggests that mother's death has more severe impact on children than father's death. We do find some evidence of lower probability of enrolment with a shock to a mother's health (death or illness), we find that a sudden death of a mother has significant adverse impact on both educational outcomes, especially among younger children (7-8 years old).

We plan to build upon the present analysis in the future. In particular, we would like to include children's time use data in the YLS, to find out whether there is a reallocation of children's time with a shock to parental health. This will help us gain insight on the type of coping mechanisms adopted by the households in such cases.

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Appendix Tables

Table A1: Sample Attrition Rates in YLS Data

	Rounds 2 to 3	Rounds 3 to 4
Older Cohort	1.2	5.4
Younger Cohort	0.8	0.9
Both Cohorts	1.0	2.3

Table A2: Summary Statistics

	Ethiopia		India		Peru		Vietnam	
Variable	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Child's highest grade completed	7340	3.21	9014	4.25	6235	4.79	8138	3.65
Currently in school (No: 0, Yes: 1)	9209	0.70	9521	0.93	8160	0.72	9243	0.85
Child's age (months)	11071	106.37	11434	106.95	10044	99.20	11130	106.10
Child' sex (M.1, F.2)	11073	1.47	11435	1.48	10098	1.49	11151	1.50
Residence (Urb.1, Rur.2)	11079	1.60	11406	1.88	10098	1.28	11106	1.80
Wealth index (0 and 1)	11031	0.30	11430	0.49	10062	0.52	11072	0.54
Age of HH head	11041	43.78	11439	40.78	10061	40.25	10265	40.84
HH head's sex (M.1, F.2)	11055	1.22	11443	1.09	10082	1.15	10266	1.14
HH head's education	10722	8.50	10679	5.29	9456	8.84	9894	7.30
HH size	11079	6.04	11448	5.26	10084	5.43	11172	4.67
Death of father (No: 0, Yes: 1)	8309	0.03	8586	0.02	7611	0.01	8378	0.01
Death of mother (No: 0, Yes: 1)	8309	0.02	8586	0.01	7611	0.00	8378	0.00
Illness of father (No: 0, Yes: 1)	8309	0.13	8586	0.08	7611	0.04	8378	0.09
Illness of mother (No: 0, Yes: 1)	8309	0.17	8586	0.08	7611	0.07	8378	0.08