Early Female Marriage and Sex Differentials in Child Healthcare and Nutrition

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Abstract:

Preferential treatment of boys at early stage of life is an important issue in the son-preferring societies of the Indian Subcontinent. In this study, we examine to what extent this prevailing gender bias is associated with the practice of early female marriage in Pakistan. Using data from four Demographic and Health Surveys, we study the association between early marriage among Pakistani women and differential peri- and post-natal child healthcare and nutrition as well as longer-term child development outcomes. At issue is whether or not early marriage has a role to play in the gender discrimination that begins in the womb, and whether boys and girls are treated differently when parents allocate nutrition and healthcare resources among their children. The outcomes we examine include indicators for peri-natal care (home delivery and child's weight at birth), healthcare (post-natal check-up, full immunization, Vitamin A intake and whether the child was taken to a hospital or a clinic for treatment for cough or Diarrhea), nutrition (duration of breast-feeding, consumption of meat and fish, and consumption of fruits by the child) and child development (stunting, under-weight, wasting, infant and child mortality). We find that early marriage is significantly associated with several healthcare, nutrition and child development outcomes. The sex of the child too is significant in some estimations, showing the prevalence of son preference. However, the effects of maternal marriage age on child outcomes are found to be not gender-specific. This lack of association is observed across a number of specifications. Whether or not a woman married before reaching the age of 18 does little to modify the male gender bias prevalent in the society. This finding underscores the strength of existing patriarchal social norms which still reward women with greater say for bearing sons.

Key words: Early marriage; gender bias; son preference; Nutrition; Healthcare; Pakistan

JEL codes: D13; J13; O15; C13; Z13.

1. Introduction

Preferential treatment of boys at early stage of life is an important issue in the son-preferring societies of the Indian Subcontinent. Mothers are reported to visit ante-natal clinics and receive tetanus shots more frequently when pregnant with a boy (Bharadwaj & Lakdawala, 2013). They breastfeed boys significantly longer than girls (Hafeez & Domeque, 2018; Jayachandran & Kuziemko, 2011), and provide them more childcare time and vitamin supplementation (Barcellos, Carvalho, & Lleras-Muney, 2014). The bias in the care and nutrition the boys and girls receive is ultimately reflected in children's differential development outcomes. In India, gender gaps in anthropometric scores of children are observed when mothers have son preference and are involved in household decision making (Dasgupta, 2016). Likewise, Jayachandran & Pande (2017) assert that eldest son preference in India influences parents' fertility decisions and how they allocate resources across children, leading to the steep birth order gradient in height.

In this study, we examine to what extent, if at all, is this prevailing bias against female child associated with the practice of early female marriage. Disproportionate preference for boys is more commonly seen in the fertility choices of early-marrying women. In Pakistan, women who get married before reaching the age of 18 state significantly greater desire for boys, and are more likely to end their fertility after obtaining at least one son compared with women who marry later (Mughal, Javed, & Fontan Sers, 2019). This son-preferring behaviour is more prevalent among less affluent women belonging to traditional households (those coming from poor, rural households with no education, employment or regular exposure to media).

We study the association between early marriage among Pakistani women and differential pre- and post-natal childcare as well as longer-term child development outcomes. At issue is

whether or not early marriage has a role to play in the gender discrimination that 'begins in the womb', and whether boys and girls are treated differently when parents allocate nutrition and healthcare resources among their children. Compared to their later-marriage counterparts, women who marry early may have poorer understanding and less say in how and what to do to optimize resources allocated to children. Early motherhood is reported to have important consequences for the health and well-being of the woman and the child (WHO, 1999). Women who marry early produce more children than who marry later (Maitra, 2004; Nasrullah, Muazzam, Bhutta, & Raj, 2014; Raj, Saggurti, Balaiah, & Silverman, 2009). They are younger at the time of first birth and give subsequent births at shorter intervals (Jensen & Thornton, 2003; Koski, Clark, & Nandi, 2017; Raj, 2010). Early marriage is associated with greater risk of sexually transmitted diseases, cervical cancer, malaria, death during childbirth, and obstetric fistulas (Nour, 2006) as well as still-birth and miscarriages (Kamal & Hassan, 2015). There is increasing evidence for adverse health outcomes among children born to early-marrying women, including higher risk of premature birth and neo-natal, infant, or child mortality (Adhikari, 2003; Garcia-Hombrados, 2017; Raj et al., 2010). Early female marriage is also associated with adverse effects on child weight, height and general health (Chari, Heath, Maertens, & Fatima, 2017; Palloni, 2017; Wachs, 2008). Given that son preference is more common among early-marrying Pakistani women, we can expect this preference to manifest itself in more care for, and better health and development outcomes of boys.

2. Data and empirical strategy

We employ four waves of the Pakistan Demographic and Health Survey: PDHS 1990-91, 2006-07, 2012-13 and 2017-18. The PDHS are household surveys representative at the

national level based on a two-stage stratified strategy. The pool sample consists of 45,260 women with 167,151 children, out of which 40,709 were under 5.

Our empirical model regresses various outcomes of under 5 children on their mother's marriage before or after the age of 18. The model can be given by the following equation:

$$CDO_{imj} = \delta_0 + \delta_1 ATM_{ij} + \delta_2 Sex_{imj} + \delta_3 (ATM_{ij} \times Sex_{imj}) + \delta_4 X_{imj} + \delta_5 Y_{ij} + \delta_6 Z_J + \mu_{ij} \quad (1)$$

where CDO_{imj} denotes the birth, healthcare, nutrition or development outcome of the child i born to the mother m belonging to the household j, ATM_{ij}corresponds to a binary variable which takes the value of 1 if the mother got married before the age of 18, 0 otherwise, Sex_{imj} corresponds to the gender of the child i born to the mother m, X, Y and Z denote the child, mother and household characteristics respectively, and$\mu_{ij}$is the error term.

In this model, what interests us is not the effect of the child's gender Sex_{imj} on the child outcome per se, but rather the interaction of gender and mother's marriage variable. A statistically significant coefficient of interest δ_3 with either positive or negative sign would suggest evidence in favour of differential effects of early marriage on the child-level indicator.

We consider four sets of child outcomes:

I. Peri-natal care indicators including home delivery and child's weight at birth. Estimations were carried out on the subgroup of children for whom mothers had an ultrasound during pregnancy.

The weight at birth variable takes the value of 1 if the child's weight at birth lies within the WHO recommended 'normal' range, i.e. between 2.5 and 4.5 kg, 0 otherwise.

II. Healthcare indicators including post-natal check up, full immunization, Vitamin A intake and whether the child was taken to a hospital or a clinic for treatment for cough or Diarrhea.

The dummy variable for full immunization takes the value of 1 if a child of between 1 and 5 years of age had completed the WHO-recommended vaccination course, 0 otherwise. The course includes one dose of vaccine against tuberculosis (BCG), three doses of vaccine against diphtheria, pertussis, and tetanus (DPT), three doses of polio vaccine (excluding the polio vaccine given at birth) and one dose of measles vaccine given to the child during the first year.

III. Nutrition-related indicators including duration of breast-feeding, consumption of meat and fish by the child, and consumption of fruits by the child.

IV. Long-term child development outcomes including stunting, under-weight, wasting, infant and child mortality.

A child whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population is considered stunted. A child whose weight-for-age is below minus two standard deviations (-2 SD) from the reference population median is considered under-weight. A child whose weight-for-height is below minus two standard deviations (-2 SD) from the reference population median is considered wasted.

We control for child- and mother-specific factors as well as household and geographical indicators. The controls include the child’s age, sex and birth order, the respondent mother's education level, employment status, exposure to electronic or print media, age difference with the husband, husband's education level, household size, family structure, household wealth, area of residence, availability of sanitation facilities, and access to improved water supply.

Mother's Body Mass Index (BMI) is also included as a determinant of the child's health outcomes.

The household wealth variable is constructed using Principal Component Analysis by generating an index of household assets such as home ownership, floor type, water source, electricity availability and durable consumer goods. The quintiles of the generated variable indicate the economic status of the household ranging from the poorest to the richest quintile).

Estimations are carried out using Probit estimater and regional and time-fixed effects are included. The dataset is summarized in online appendix. According to the data, half of ever-married women got married before the age of 18. Over half of the births (55%) took place at home, while only 40% of the children had a medical check-up within two months of birth. 44% of children under 5 years of age are stunted, 31% are under-weight while 8% are thin (wasted). These numbers, though not dis-similar to those seen elsewhere in South Asia, nonetheless remain high.

There are clear signs of preference given to boys in certain aspects of healthcare (full vaccination course, treatment for cough) and nutrition (breast-feeding) (Table 1). Several other outcomes for boys and girls are however statistically no different from zero. The development indicators and mortality rates of girls are in fact better than those of boys.

Compared to the gender differentials, the differences in child outcomes between early- and late-marrying women are much stronger (Table 2). Outcomes of children born to early-marrying women are generally poorer compared to those of late-marrying women: A higher proportion of children of early-marrying women are born at home, have unsatisfactory anthropometric measurements, and have higher mortality rates. Fewer children born to these women have normal weights, get post-natal check-up, full immunization or treatment for

acute respiratory ailment or diarrhea. The only exception is breast-feeding whose incidence is higher among women who married before the age of 18.

[Insert Tables 1 & 2]

3. Findings

In the following, we present partial results for four sets of estimations.

The first set of estimations pertains to two indicators related to child birth, namely birth at home and weight at birth. The intuition behind birth-related indicators is that once the child is conceived and the sex of the child known, the gender bias of the parents can manifest itself in the care the foetus and subsequently the neo-nate and the infant receives. Over 88% of Pakistani women had an ultrasound done during their most recent pregnancy. This ubiquitous knowledge of the sex of the child can lead to differential birth outcomes: Mother of the future male offspring may get better nourishment and healthcare. She may be taken to the hospital for delivery rather than giving birth at home. Male new-born and infant may also get greater medical attention and access to more nutritious food which may later on lead to better health and development outcomes compared to girls.

The second set of estimations concerns indicators of healthcare the child receives. The five indicators include medical check-up within two months of birth, completion of full vaccination course within the first year, Vitamin A intake, and treatment by a practitioner for acute respiratory ailment and diarrhea. These indicators correspond to different levels of parental investment in terms of time, physical effort and money. Some healthcare measures

(vaccination, vitamin doze) require little effort from the parents as vaccination teams go door-to-door for the purpose. Other may involve both transportation and expenses.

The third set of estimations focus on another aspect of parental investment on the child, i.e. food. The indicators in this regard include duration of breast-feeding, and the provision of meat and fish, and fruits. The first of the three reflects the mother's physical effort while the other two involve the household's financial commitment. Evidence of gender-biased breastfeeding has previously been reported in the case of India (Jayachandran & Kuziemko, 2011) and Pakistan (Hafeez & Domeque, 2018).

The fourth set of estimations pertains to child development and mortality and includes five dependent variables: stunting, under-weight, wasting, infant- and child-mortality. The former three of these indicators reflect a child's development and physical growth, and may point to the care and attention the parents provide. The mortality measures account for risks to child's life due to inadequate healthcare or nutrition.

Tables 3 to 6 present partial results of the four sets of estimations. Estimations for each outcome is given, first without, and then with mother, child and household characteristics as control variables. We are mainly interested in observing the interaction between woman's marriage before or after the age of 18 and the sex of the child in order to understand the differential role mother's age at marriage plays in determining the parental investment outcomes.

[Insert Tables 3 & 4]

Table 3 gives results for home delivery and birth weight of children during whose pregnancy mothers had an ultrasound. Early marriage appears to be associated with a higher probability of home birth and a lower probability that the child born has a normal weight. However, the gender interaction term is not statistically significant.

The situation with respect to healthcare outcomes as reported in Table 4 is similar: Early marriage is significantly associated with several healthcare indicators, all cases suggesting lower provision of healthcare by early-marrying women. The sex of the child too is significant in some estimations, showing the prevalence of son preference. The interaction term in none of the five estimations however is found to be statistically different from zero, implying that the difference in impact on child healthcare investment between early- and late-marrying mothers is independent of the child's sex. Similarly, the interaction between early marriage and sex of the child lacks significance in all the three nutrition-related estimations (Table 5). Finally, the effects of maternal marriage age on the developmental outcomes of the child are likewise found to be not gender-specific (Table 6). The impact of early female marriage on the likelihood that the child is stunted, under-weight or wasted (Columns 1 – 6), or the probability of the child not surviving beyond the first or the first five years of existence (Columns 7 – 10) is again independent of the child's sex.

[Insert Tables 5 & 6]

4. Conclusion

Few studies have hitherto analyzed the inter-generational gender dimensions of early marriage. In this study, we examined how early marriage of Pakistani mothers affects the

differential care their children receive. We come up with little evidence to support the contention that women's early marriage is associated with gender bias in early investments on child's health and nutrition. This lack of association is valid across a number of specifications. Whether or not a woman married early or late does little to modify the male gender bias prevalent in the society. Preferential treatment of sons, be it in the form of pre- or post-natal care, access to nutritious food or healthcare the male child receives does not depend upon the mother's age at the time of marriage. This finding underscores the strength of existing patriarchal social norms which still reward women with greater say at home for bearing sons (Javed & Mughal, 2018). The finding emphasizes the need for awareness campaigns and active policy intervention in order to promote more equal distribution of parental care and resources.

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Table 1: Child outcomes by sex of child (Overview)

	Boy	Girl	Two sample t-test
	(1)	(2)	(3)
Child birth at home	0.55	0.56	-1.18
Weight at birth	0.71	0.71	-0.23
Post-natal check up	0.41	0.39	1.54
Full immunization course	0.57	0.54	3.52
Doze of Vitamin A	0.76	0.75	0.11
Treatment for Diarrhea	0.61	0.60	0.61
Treatment for cough	0.74	0.72	2.34
Breastfeeding	16.08	15.40	3.41
Meat or fish	0.09	0.09	1.55
Fruits	0.24	0.23	1.44
Stunting	0.45	0.42	2.25
Underweight	0.32	0.29	2.15
Wasted	0.09	0.08	1.57
Infant mortality	0.09	0.08	5.42
Child mortality	0.10	0.09	3.73

Source: Authors' calculations using PDHS. Adequate sampling weights are used to account for sample design. The means are reported in Columns 1 and 2. Columns 3 report the t-statistic for the boy- girl mean comparison test.

Table 2: Early marriage and child outcomes (Overview)

	Early Marriage	Late Marriage	Two sample t-test
	(1)	(2)	(3)
Child birth at home	0.66	0.47	29.22
Weight at birth	0.73	0.65	-3.90
Post-natal check up	0.35	0.45	-7.83
Full immunization course	0.46	0.62	-18.13
Doze of Vitamin A	0.75	0.76	-1.21
Treatment for Diarrhea	0.58	0.62	-3.08
Treatment for cough	0.70	0.75	-4.30
Breastfeeding	16.63	15.02	8.00
Meat or fish	0.09	0.09	-0.90
Fruits	0.23	0.24	-0.66
Stunting	0.52	0.38	10.50
Underweight	0.38	0.26	9.71
Wasted	0.10	0.07	2.98
Infant mortality	0.09	0.07	12.05
Child mortality	0.11	0.08	14.49

Source: Authors' calculations using PDHS. Adequate sampling weights are used to account for sample design. The means are reported in Columns 1 and 2. Columns 3 report the t-statistic for the early marriage- late marriage mean comparison test.

Table 3: Early marriage and peri-natal care

VARIABLES	Child birth at home	Child birth at home	Weight at birth	Weight at birth
	(1)	(2)	(3)	(4)
Early Marriage (ref: Late Marriage)	0.464***	0.194***	-0.206*	-0.182
	(0.047)	(0.051)	(0.109)	(0.246)
Sex (ref: female)				
Male	-0.016	-0.053	0.098	-0.025
	(0.040)	(0.044)	(0.073)	(0.155)
Early Marriage × Sex	-0.055	-0.045	-0.027	0.134
	(0.064)	(0.068)	(0.149)	(0.324)
Constant	-0.644***	0.307***	0.536***	-1.079
	(0.029)	(0.107)	(0.053)	(0.695)
Observations	7,063	6,937	1,740	445
Controls	NO	YES	NO	YES
Region Fixed Effects	NO	YES	NO	YES
Time Fixed Effects	NO	YES	NO	YES

Source: Authors' calculations using PDHS. Each coefficient provided in the table corresponds to a separate regression. Estimations are carried out on a subset of women who had an ultrasound during pregnancy. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Early marriage and child healthcare

VARIABLES	Post-natal check up	Post-natal check up	Full immunization course	Full immunization course	Doze of Vitamin A	Doze of Vitamin A	Treatment for Diarrhea	Treatment for Diarrhea	Treatment for cough	Treatment for cough
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Early Marriage (ref: Late Marriage)	-0.350***	-0.097**	-0.397***	-0.128***	-0.059**	-0.072***	-0.081*	0.043	-0.145***	-0.041
	(0.038)	(0.042)	(0.024)	(0.026)	(0.023)	(0.027)	(0.044)	(0.048)	(0.032)	(0.034)
Sex (ref: female)										
Male	0.004	0.028	0.055**	0.063***	-0.003	0.001	0.085**	0.093**	0.056*	0.060*
	(0.034)	(0.037)	(0.022)	(0.024)	(0.021)	(0.023)	(0.042)	(0.043)	(0.030)	(0.031)
Early Marriage × Sex	0.085	0.080	0.019	0.009	0.037	0.003	-0.033	-0.031	-0.017	0.004
	(0.052)	(0.056)	(0.033)	(0.035)	(0.033)	(0.036)	(0.061)	(0.063)	(0.044)	(0.045)
Constant	-0.219***	-1.684***	0.219***	-1.383***	0.554***	0.944***	0.242***	-1.095***	0.618***	0.508***
	(0.025)	(0.077)	(0.016)	(0.054)	(0.015)	(0.056)	(0.030)	(0.098)	(0.021)	(0.069)
Observations	9,919	9,741	23,520	23,084	27,213	26,806	7,009	6,902	14,859	14,585
Controls	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Region Fixed Effects	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Time Fixed Effects	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES

Source: Authors' calculations using PDHS. Each coefficient provided in the table corresponds to a separate regression. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Early marriage and child nutrition

VARIABLES	Breastfeeding	Breastfeeding	Meat and fish	Meat and fish	Fruits	Fruits
	(1)	(2)	(3)	(4)	(5)	(6)
Early Marriage (ref: Late Marriage)	1.460***	0.755	-0.081***	0.008	-0.092***	0.026
	(0.234)	(0.593)	(0.029)	(0.031)	(0.023)	(0.025)
Sex (ref: female)						
Male	0.440**	0.634	0.006	0.012	0.022	0.025
	(0.222)	(0.500)	(0.026)	(0.027)	(0.022)	(0.022)
Early Marriage × Sex	0.122	-0.340	0.057	0.048	-0.007	-0.015
	(0.325)	(0.786)	(0.040)	(0.041)	(0.033)	(0.033)
Constant	14.814***	10.725***	-1.189***	-1.593***	-0.613***	-0.925***
	(0.160)	(1.264)	(0.019)	(0.054)	(0.015)	(0.042)
Observations	18,263	2,086	27,718	27,434	27,706	27,423
Controls	NO	YES	NO	YES	NO	YES
Region Fixed Effects	NO	YES	NO	YES	NO	YES
Time Fixed Effects	NO	YES	NO	YES	NO	YES

Source: Authors' calculations using PDHS. Each coefficient provided in the table corresponds to a separate regression. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Early marriage and child development outcomes

VARIABLES	Stunting	Stunting	Underweight	Underweight	Wasted	Wasted	Infant Mortality	Infant Mortality	Child Mortality	Child Mortality
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Early Marriage (ref: Late Marriage)	0.373***	0.081*	0.361***	0.077	0.096**	-0.037	0.155***	0.002	0.181***	-0.002
	(0.034)	(0.048)	(0.036)	(0.052)	(0.049)	(0.068)	(0.013)	(0.032)	(0.013)	(0.030)
Sex (ref: female)										
Male	0.091***	0.100**	0.097***	0.118***	0.067	0.034	0.070***	0.074**	0.053***	0.047
	(0.032)	(0.041)	(0.034)	(0.045)	(0.046)	(0.057)	(0.014)	(0.031)	(0.013)	(0.029)
Early Marriage × Sex	-0.075	-0.052	-0.112**	-0.058	0.017	0.084	-0.008	0.009	-0.014	0.024
	(0.048)	(0.065)	(0.050)	(0.069)	(0.067)	(0.089)	(0.018)	(0.042)	(0.018)	(0.040)
Constant	-0.324***	0.600***	-0.713***	0.531***	-1.448***	0.015	-1.530***	-1.407***	-1.458***	-1.344***
	(0.023)	(0.109)	(0.025)	(0.117)	(0.033)	(0.150)	(0.010)	(0.068)	(0.010)	(0.066)
Observations	11,244	7,021	11,365	7,138	11,409	7,034	165,492	33,319	165,492	33,319
Controls	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Region Fixed Effects	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Time Fixed Effects	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES

Source: Authors' calculations using PDHS. Each coefficient provided in the table corresponds to a separate regression. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Online Appendix:

Table A1: Data description

Variables	Description	Proportion/Mean
Child birth at home	Dummy variable, takes the value of 1 if child born at home, 0 otherwise	0.55
Weight at birth	Dummy variable, takes the value of 1 if child weight at birth is normal, 0 otherwise	0.71
Post-natal check up	Dummy variable, takes the value of 1 if child had a medical checkup within 2 months of birth, 0 otherwise	0.40
Full immunization course	Dummy variable, takes the value of 1 if child completed the vaccination course, 0 otherwise	0.55
Doze of Vitamin A	Dummy variable, takes the value of 1 if child had vitamin A supplements in the six months preceding the survey, 0 otherwise	0.75
Treatment for Diarrhea	Dummy variable, takes the value of 1 if the child had medical treatment for diarrhea, 0 otherwise	0.60
Treatment for cough	Dummy variable, takes the value of 1 if the child had medical treatment for cough, 0 otherwise	0.73
Breastfeeding	Number of months the child was breast-fed	15.75
Meat or fish	Dummy variable, takes the value of 1 if child under age 2 had meat or fish during the day preceding the interview, 0 otherwise	0.09
Fruits	Dummy variable, takes the value of 1 if child under age 2 had a fruit during the day preceding the interview, 0 otherwise	0.23
Stunting	Dummy variable, takes the value of 1 if child is stunted, 0 otherwise	0.44
Underweight	Dummy variable, takes the value of 1 if child is underweight, 0 otherwise	0.31
Wasted	Dummy variable, takes the value of 1 if child is wasted, 0 otherwise	0.08
Infant mortality	Dummy variable, takes the value of 1 if child died before the first birthday, 0 otherwise	0.08
Child mortality	Dummy variable, takes the value of 1 if child died before the fifth birthday, 0 otherwise	0.10
Early Marriage	Dummy variable, takes the value of 1 if child's mother age at marriage below 18, 0 otherwise	0.50
Child Sex	Dummy variable, takes the value of 1 if the child sex is male, 0 otherwise	0.51
Birth order	Child birth order	3.35
Child Age	Child's age in months	29.53
Age Difference	Age difference between child's father and mother	5.86
Mother education	Categorical variable, takes the value of 0 if the child's mother has no education, 1 if the mother possesses primary education, 2 if the mother possesses secondary education, 3 if the mother possesses higher education	0.69 0.13 0.12 0.04
Father education	Categorical variable, takes the value of 0 if the child's father has no education, 1 if the father possesses primary education, 2 if the father possesses secondary education, 3 if the father possesses higher education	0.41 0.16 0.29 0.12
Employed	Dummy variable, takes the value of 1 if the child's mother is employed, 0 otherwise	0.24
Media exposure	Dummy variable. takes the value of 1 if child's mother reads newspaper, listens radio or watches television once a week, 0 otherwise	0.36
Place of residence	Dummy variable, takes the value of 1 if the household resides in an urban area, 0 otherwise	0.32
Wealth Status	Categorical variable, takes the values of 1 to 5 for households belonging to the poorest, poorer, middle, rich and richest household wealth groups.	0.20 0.20 0.20

		0.19
		0.18
BMI	Mother's Body mass index (BMI)	25.27
Sanitation	Dummy variable, takes the value of 1 if the household have Improved sanitation facility, 0 otherwise	0.61
Water source	Dummy variable, takes the value of 1 if the household has access to improved water facility, 0 otherwise	0.87

Source: Authors' calculations using PDHS. Means and proportions are shown both for the full child sample. Adequate sampling weights are used.