

Title: Adolescents' Involvement in Care Work, School Attendance, and Academic Achievement: Evidence from the Young Lives Survey in Ethiopia, India, Peru, and Vietnam (2009-2016)

Extended summary

Background

The disproportionate burden of unpaid care work on women and girls significantly contributes to school dropout, low academic performance, and reduced female labor participation, particularly in the formal sector, ultimately perpetuating poverty and reinforcing unequal gender norms (Rees, 2017; Basak, 2019). Globally, two-thirds of children aged 5–17 who perform excessive unpaid care work¹ are girls, with the disparity increasing during adolescence (ILO, 2018). Studies from Colombia, Ethiopia, the Philippines, Uganda, and Zimbabwe indicate that girls disproportionately engage in both primary (e.g., feeding, sibling care) and secondary (e.g., cooking, cleaning) care tasks (Rost et al., 2015). Addressing this care burden is crucial for closing the education gender gap and fostering a gender-transformative care economy.

While research links time spent on household chores and care duties to lower education levels (Singh et al., 2017; Reich et al., 2013) and socio-economic status (John et al., 2014), evidence on the relationship between adolescents' time use and educational outcomes in resource-constrained settings remains limited. Prior findings from India show that domestic chores at age 12 account for 36% of the gender gap in secondary education completion (Singh et al., 2017). However, pathways leading to reduced school attendance and academic performance among adolescents with a high burden of care responsibilities are not well understood.

This paper utilizes longitudinal data to examine the impact of excessive care work on adolescent school performance in low- and middle-income countries (LMICs), focusing on literacy, numeracy skills, school attendance, and grade attainment. The study explores key questions: What is the prevalence of excessive care work among adolescents in LMICs? Does early engagement in care work predict later educational outcomes, such as lower literacy and numeracy skills or reduced school attendance? Additionally, it investigates whether school attendance mediates the relationship between care work and learning, and if there are gender differences in these dynamics. The findings will shed light on how care responsibilities contribute to educational disadvantages, potentially limiting future labor market opportunities.

Data

We use secondary data from the Young Lives Survey (YL) (Barnett et al., 2013). YL is a unique longitudinal study that has been tracking two cohorts of children in four countries (Ethiopia, India, Peru and Vietnam): a younger cohort of 2,000 children aged between 6-18 months in 2002, and a seven-year older cohort of 1,000 children in each country. Our analysis focuses on the younger cohort. Our dependent variables, measured at ages 12 and 15, include: (i) school status, measured as a binary variable that is equal to 1 if the child was attending school and 0 otherwise; (ii) grade attainment, measured as the highest grade the child had completed; (iii) numeracy, measured as a standardized score—mean 0 and standard deviation 1—based on a mathematics test; (iv) vocabulary, measured as a standardized score based on adapted version of the Peabody Picture Vocabulary Test; and (v) reading, measured as a standardized score based on a language-specific reading comprehension test.

¹ ILO Definition: Excessive care work refers to unpaid caregiving responsibilities that exceed 21 hours per week. This includes tasks such as household chores, caring for family members, and other domestic duties that, when performed excessively, can have detrimental effects on individuals, particularly children and adolescents.

Our main independent variable is time spent on care activities. YL asked how many hours children spent on a series of activities during a typical day (from Monday to Friday) in the last week. Time use was reported by the caregiver at ages 5 and 8 and self-reported by the child at ages 12 and 15. We measure time on care activities as a continuous variable indicating hours spent on care for others (younger children, ill household members) and on domestic tasks (fetching water, firewood, cleaning, cooking, washing, shopping). We also measure excessive care activities, defined as a binary variable that is equal to 1 if the child spends three or more hours per day on care activities and 0 otherwise.

We also control for several socioeconomic and other characteristics, including: (i) whether the child had any disability at age 5; (ii) performance in a cognitive development test at age 5; (iii) daily hours the child spent working, including paid and unpaid work; (iv) whether the mother had completed at least 8 grades of school; (v) whether the father had completed at least 8 grades of school; (vi) whether the child was not living with either parent; (vii) household size; (viii) whether the household fell in the poorest wealth quintile; and (ix) whether the household was in an urban or rural location.

Methods

We first estimate the mean daily hours spent in care activities and the prevalence of excessive care activities, defined as three or more hours per day. Second, we then estimate bivariate and multivariate regressions to explore the relationships between care activities at a younger age and education outcomes at a later age. In other words, we estimate models for education outcomes at age 15 (or age 12) and care activities and other relevant covariates, including education outcomes, at age 12 (or age 8). Third, we will also estimate models for outcomes at ages 12 and 15 simultaneously, using models with individual level fixed effects that account for any potential unobserved heterogeneity that is constant in time. Finally, we will explore whether school attendance mediates any relationship between care activities and learning. We will conduct all analyses separately by country. Within each country we will estimate all models by gender and test for gender differences.

Preliminary results

Table 1 shows the mean daily hours spent on care activities and the prevalence of excessive care activities at different ages by country and gender. Across all countries, girls consistently spend more time in care activities than boys at ages 8, 12, and 15. For instance, at age 15, girls in Ethiopia spend an average of 3.6 hours per day on care activities, compared to 1.9 hours for boys. Similarly, in Peru, girls spend 2.2 hours on care at age 15, while boys spend 1.8 hours. Additionally, the percentage of children engaged in excessive care work increases with age, particularly for girls, but is most pronounced in Ethiopia and India. Ethiopia shows the largest gender disparity in the burden of excessive care work—73.9% of girls versus 31.8% of boys at age 15.

Table 2 shows descriptive statistics for the education outcomes at different ages by country and gender. School attendance is generally high in all countries, with slight variations by gender. However, Ethiopia shows significantly lower school enrollment, particularly at age 8, where only 63.9% of boys and 67.3% of girls are in school. In terms of grade attainment, boys and girls in India, Vietnam, and Peru show relatively similar levels of educational progress, with girls typically outperforming boys in some cases, such as in India, where girls have higher average grade attainment at all ages. The standardized test scores in numeracy, vocabulary, and reading reveal minor gender differences, with some countries, like Vietnam and Ethiopia, showing girls performing slightly better than boys in reading. The numeracy scores in Ethiopia reveal a small gender gap, with boys slightly outperforming girls across all ages.

Table 3 shows preliminary results from multivariate models for educational outcomes at age 15 and covariates at age 12. The findings show that care activities have a more significant negative impact on girls' educational outcomes than boys, especially in India and Ethiopia. In India, excessive care work at age 12 significantly reduces the likelihood of girls being in school at age 15 and negatively affects their grade attainment and vocabulary scores. Similar trends are seen in Ethiopia, where both boys and girls experience negative impacts, though girls' vocabulary scores are especially affected. Vietnam and Peru show smaller impacts of care work on education, but the trend remains that girls are more negatively affected than boys, particularly when it comes to excessive care responsibilities.

Appendixes

Table 1. Descriptive statistics for care activities

	India		Vietnam		Ethiopia		Peru	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Daily hours in care activities, mean (sd)								
Age 8	0.4 (0.7)	0.7 (1.0)	0.6 (0.9)	1.0 (1.1)	1.9 (1.6)	3.1 (2.1)	1.3 (1.2)	1.4 (1.2)
Age 12	0.8 (0.8)	1.2 (1.2)	1.4 (1.3)	1.8 (1.3)	1.8 (1.4)	3.0 (5.7)	1.9 (1.3)	2.1 (1.4)
Age 15	1.1 (1.0)	1.7 (1.5)	1.5 (1.3)	1.9 (1.5)	1.9 (1.4)	3.6 (1.7)	1.8 (1.4)	2.2 (1.7)
Excessive care activities (=1)								
Age 8	0.019	0.038	0.033	0.090	0.298	0.560	0.147	0.142
Age 12	0.032	0.094	0.155	0.234	0.294	0.624	0.276	0.341
Age 15	0.072	0.201	0.151	0.230	0.318	0.739	0.261	0.335
Sample	1,014	869	949	905	953	846	905	889

Source: Authors' estimates based on Young Lives Surveys, Rounds 3-5.

Table 2. Descriptive statistics for education outcomes

	India		Vietnam		Ethiopia		Peru	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
In school (=1)								
Age 8	0.919	0.962	0.982	0.987	0.639	0.673	0.994	0.997
Age 12	0.968	0.967	0.964	0.977	0.925	0.961	0.998	0.999
Age 15	0.897	0.864	0.774	0.844	0.898	0.935	0.970	0.982
Grade attainment, mean (sd)								
Age 8	1.5 (1.0)	1.8 (1.0)	1.7 (0.5)	1.7 (0.5)	0.6(0.7)	0.7(0.8)	2.3(0.6)	2.3(0.6)
Age 12	5.3 (1.2)	5.7 (1.3)	5.6 (0.9)	5.7 (0.8)	3.4(1.8)	3.6(1.8)	6.0(0.9)	4.0(0.9)
Age 15	8.2 (1.3)	8.7 (1.2)	8.6 (0.7)	8.7 (0.7)	5.9(2.1)	6.2(2.0)	8.6(1.8)	8.8(1.5)
Numeracy z-score, mean (sd)								
Age 8	0.01 (1.00)	0.00 (1.00)	-0.005 (1.0)	0.01 (0.98)	0.01 (1.0)	-0.3 (0.98)	0.08 (0.97)	-0.06 (1.02)
Age 12	0.00 (1.02)	0.01 (0.96)	-0.05 (1.01)	0.07 (0.99)	-0.3 (1.0)	0.01 (0.99)	0.04 (0.99)	-0.02 (0.98)
Age 15	0.08 (0.99)	-0.07 (0.98)	-0.08 (1.01)	0.08 (0.99)	0.12 (0.96)	-0.03 (1.04)	0.12 (0.97)	0.04 (0.94)
Vocabulary z-score, mean (sd)								
Age 8	0.08 (0.96)	-0.08 (1.03)	0.05 (1.03)	-0.04 (0.94)	0.03(0.99)	-0.04 (0.99)	0.05 (0.98)	-0.03 (0.99)
Age 12	0.04 (0.98)	-0.03 (1.02)	0.02 (0.96)	0.002 (1.01)	0.02 (0.99)	-0.03 (1.00)	0.13 (0.97)	-0.11 (1.01)
Age 15	0.06 (0.90)	-0.06 (1.10)	-0.01 (1.01)	0.03 (0.99)	0.02 (0.98)	-0.02 (1.02)	0.07 (0.96)	-0.07 (1.02)
Reading z-score, mean (sd)								
Age 12	-0.04 (0.99)	0.06 (1.02)	-0.13 (1.00)	0.14 (0.99)	-0.07 (0.97)	0.04 (1.01)	-0.01 (0.98)	0.03 (1.02)
Age 15	-0.04 (1.04)	0.05 (0.96)	-0.17 (1.00)	0.17 (0.98)	-0.04 (0.99)	0.05 (1.01)	0.00 (1.01)	0.02 (0.99)
Sample	1,014	869	949	905	953	846	905	889

Source: Authors' estimates based on Young Lives Surveys, Rounds 3-5.

Table 3. Coefficients for care activities at age 12 from multivariate linear regressions for education outcomes at age 15

	India				Vietnam				Ethiopia				Peru			
	Boys		Girls	p-value	Boys	p-value	Girls		Boys	p-value	Girls		Boys	p-value	Girls	p-value
In school (=1)																
Hours spent in care	-0.001		-0.044	***	-0.017		-0.005		-0.016	*	-0.010		-0.010	*	-0.004	
Excessive care	-0.112	*	-0.144	***	-0.060	†	-0.015		-0.050	*	-0.029		-0.013		-0.012	
Grade attainment																
Hours spent in care	0.003		-0.042	*	0.010		-0.014		-0.023		-0.051	*	-0.081	*	-0.036	
Excessive care	-0.154		-0.092		-0.028		-0.023		-0.050		-0.109		-0.125		-0.111	
Numeracy z-score																
Hours spent in care	-0.014		-0.014		0.010		0.019		0.001		-0.035	†	0.002		-0.032	
Excessive care	-0.067		-0.109		0.083		0.032		0.005		-0.117	†	-0.020		-0.077	
Vocabulary z-score																
Hours spent in care	0.003		-0.093	**	0.030		0.019		0.001		-0.033	†	0.004		-0.006	†
Excessive care	-0.041		-0.371	**	0.105		0.037		0.053		-0.059		0.033		-0.032	
Reading z-score																
Hours spent in care	-0.116	**	-0.030		0.013		-0.005		-0.020		-0.005		-0.001		-0.007	
Excessive care	-0.392	*	-0.106		-0.022		0.041		-0.127	†	0.015		0.033		0.022	
Sample size	992		843		865		819		822		709		731		691	

Source: Authors' estimates based on Young Lives Surveys, Rounds 3-5.

Notes: Each cell represents a coefficient for care activities at age 12 from a regression for the specific outcome. All regressions include controls for school status at age 12, grade attainment at age 12, daily hours spent working at age 12, child disability at age 5, cognitive development score at age 5, mother's and father's education, not living with either parent at age 12, household size at age 12, poorest quintile at age 12, and urban location at age 12. Regressions for numeracy, vocabulary and reading also control for the respective skill at age 12. Sample sizes are smaller for some outcomes. ***p<0.001, **p<0.01, *p<0.05, †p<0.1

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