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Young Lives

How Does Teenage Marriage and Motherhood Affect the Lives of Young Women in Ethiopia, India, Peru and Vietnam?

Kristine Briones and Catherine Porter

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Summary

This working paper examines the characteristics of young women who have been married, cohabited, or given birth in their teenage years in four low- or middle-income countries: Ethiopia, India, Peru and Vietnam. It finds that the rates of teen marriage are highest in India, but a high proportion of Peruvian girls are already cohabiting or mothers by the age of 19. The paper compares those who were married/cohabiting as teenagers with those who were not, at age 22, and finds that young women who were married/cohabiting in their teens are significantly less likely to have completed high school in all countries, are less likely to believe in equality between men and women, and score lower on measures of empowerment. Some of these observed differences were apparent before their marriage, so it is difficult to make a causal attribution to the event of marrying, or to early life circumstances. However, even conditional on other correlates, the probability of finishing high school is 15-25 per cent lower for teen-married women, and the fall in agency between ages 15 and 22 is significantly lower than for those who were not married young.

This quantitative analysis complements qualitative findings from a companion study (Winter 2018), showing that lack of support for women who marry young exacerbates disadvantage from poverty and gender norms.

1. Introduction

Ending child marriage and reducing adolescent pregnancy have gained increasing prominence on the international development policy agenda. The 2014 Girl Summit, the establishment in 2014 of the UNFPA-UNICEF Global Programme to Accelerate Action to End Child Marriage, and the 2015 Sustainable Development Goals (SDGs) are examples of recent policy initiatives; the latter includes a specific target on the elimination of child marriage as part of SDG5 on gender equality and the empowerment of all women and girls.

Child marriage, as defined by UNFPA, is a marriage in which one or both spouses are under 18 years old. While it is not exclusive to girls, it is significantly lower for boys than girls, both globally and in the four Young Lives study countries of Ethiopia, India, Peru and Vietnam. Child marriage has been declining, particularly in these four countries. According to UNFPA-UNICEF (2018), while the rate of decline in child marriage in Ethiopia has been fastest among the African countries included in the Global Programme, child marriage in the country is relatively high, with 40 per cent of women age 20-24 first married or in a union before age 18. Child marriage is also rapidly declining in India, with 27 per cent of women age 20-24 first married or in a union before age 18. In Vietnam, this rate is 10 per cent, while it is 17.5 per cent in Peru.[1] This highlights that child marriage remains an issue despite the legal age of marriage being set at 18 years old for women in Ethiopia, India, and Vietnam, and at 16 in Peru (Winter 2018; Nguyen 2016).

The World Health Organization defines adolescent pregnancy as giving birth before the age of 20, and states that 16 million girls aged 15-19 years and 2.5 million girls under 16 years old give birth each year in developing regions (WHO 2018). There also has been progress in adolescent birth over the past 60 years. Adolescent birth rate per 1,000 women aged 15-19 has declined from 170 births in the 1950s to 106 in 2010. In Ethiopia, India, Peru, and Vietnam, the adolescent birth rate per 1,000 women between 2006-17 was 80, 28, 65, and 30 births, respectively (UNFPA n.d.).

Given these declines and a more recent policy focus on adolescent well-being and the consequences of adolescent marriage and childbirth, in this paper we focus on adolescent marriage and childbearing. We examine the consequences of marrying at a young age, during teenage years, and also of giving birth by age 19.

We define teen marriage, cohabitation, and parenthood (TMCP) as marriage, cohabitation, or childbirth by age 19 for the purposes of our analysis. We compare the characteristics of TMCP girls to non-TMCP girls in Ethiopia, India, Peru, and Vietnam. We find that those who married, cohabited, or gave birth in their teenage years (19 years old and below) did not appear to be significantly different to other girls at the ages of 8 or 12. For example, we find that both groups of girls are similar in height, and have similar school enrolment levels. Some differences emerge at age 15, such as those who were married in their teens having lower educational attainment and being more likely to be neither working nor in school. By age 22 these women also have lower empowerment and more conservative expectations of women's roles in the household.

1 Ethiopia data from DHS 2016; India data from NFHS 2015-2016; Vietnam data from MICS 2016; Peru data from DHS 2008. In all countries the proportion of boys married before 18 is below 10 per cent.

The paper proceeds with a review of related literature, and then describes the dataset used for the analysis. We present findings on the characteristics of teen marriages, and then perform quantitative analysis to understand the effects of TMCP on subsequent outcomes at age 22. We conclude and offer some tentative policy suggestions, drawing on our own findings and related qualitative studies.

2. Related survey literature

A number of studies have investigated the consequences of child and adolescent marriage and unions: from undermining children's physical and mental health; to decreasing opportunities for education and employment; to increasing girls' risk of experiencing violence and lowering decision-making power. We focus here on quantitative literature from economics, sociology and nutrition studies to show where this paper makes a contribution.

Several quantitative studies have investigated the effects of early marriage and found mainly negative associations between early marriage or childbearing and outcomes for mothers and children, though few of these are able to provide causal impacts. Santhya (2011) reviewed evidence from medical studies up to the early 2000s and concluded that these show that early marriage is associated with adverse reproductive health outcomes for young women. Raj and Boehmer (2013) also found significant associations between child marriage and infant mortality rates in 96 countries. Raj et al. (2010) assessed associations between marriage before age 18, and morbidity and mortality of children borne by early-married mothers, using a nationally representative household cross-section for India. They found that children from younger mothers had lower weight and height for age, but no significant differences in other health outcomes. Fall et al. (2015) used data from a large pool of cohort surveys in Brazil, Guatemala, India, the Philippines, and South Africa, and found that children of young mothers in low and middle-income countries are disadvantaged at birth and in childhood nutrition and schooling.

Jensen and Thornton (2003) examined trends in age of marriage for cohorts of women in a large sample of low-income countries (using DHS data) born between 1950 and 1970 and found that the age of first marriage was lowest in South Asia, having increased only very slightly over the time period to just over 16 years old. In Sub-Saharan and West Africa, the trend was stagnant at around 17 and a half, while near East and North Africa showed an increasing trend, up to 19 and a half years old for the 1970 cohort. This was similar to Latin America, which showed an opposite trend, having decreased from 20 years old in the earlier cohort. In Southeast Asia, the average remained at around 20 years old. The authors showed that poorer and less educated girls married younger, and that the lower the age of marriage, the higher the age gap between husband. Age of marriage also had a negative correlation with indicators of female empowerment. Jensen and Thornton (2003) undertook a very comprehensive study, though is descriptive and based on cross-sectional or 'snapshot' data.

Some studies have explored the pathways in which early marriage or birth may affect subsequent outcomes. Efevbera et al. (2017) examined links between early marriage and subsequent child health. They hypothesised that early childbearing was not the sole pathway through which early marriage affected child development and health, and that disparities in maternal education and wealth between those who were early married and those not were also important factors.

While wealth and other indicators of material well-being are clearly important, other factors may also come into play and interact with poverty to increase the risk of early marriage. Vogl's (2013) study of Bangladesh, India, Nepal, and Pakistan examined the role of sibling sex composition in determining age of marriage, and found that having younger sisters increases pressure on girls to marry sooner (through arranged marriages), while having older sisters delays a girl's marriage. Pesando and Abufhele (2018) (following Vogl's methodology) used Young Lives data to examine the determinants of early marriage. Their paper can be seen as a complement to our focus in this paper. Pesando and Abufhele (2018) showed that, while the presence and number of older sisters in the household was associated with a 10-30 per cent lower likelihood of teen marriage and pregnancy in Ethiopia, India, Peru, and Vietnam, these associations in India, Peru, and Vietnam disappeared once a causal effect was estimated.

Favara et al. (2016) examined risk factors for early marriage/cohabitation and/or childbearing in Peru using Young Lives data and found that girls from poor households with an absent parent for a prolonged period have a higher risk of early childbearing. Also, girls with lower self-efficacy and educational aspirations are more at risk of becoming a mother during adolescence. Singh and Espinoza (2016) examined associations between early marriage and young women's outcomes in India (in the state of Andhra Pradesh) using a subset of the Young Lives dataset used in this study, and an earlier round of the dataset (for outcomes at age 19). They found that at age 19, married young women had poorer subjective well-being, psychosocial outcomes, and access to education than their unmarried peers. Our study updates their work to follow the same young women at age 22, and extends to all four Young Lives study countries, not just India.

There is a small amount of literature in economics that has focused on trying to pin down causal effects of early marriage. The problem is hard to solve, given that young women who marry at an early age usually come from poorer, less empowered backgrounds already, so it is difficult to attribute subsequent outcomes to the act of getting married, rather than pre-marriage circumstances. To identify a causal effect of marriage, we need a source of variation that is exogenous, or that is not co-determined with other investments in children (instrumental variable) such as a policy change, or we need to have multiple observations on the same individual, to compare before and after the event (difference-in-differences).

Field and Ambrus (2008) provided one of the first causal estimates of the consequences of marrying during the teenage years. Using age at menarche as a source of plausibly exogenous variation in the *timing* of marriage, the authors found that delaying marriage by a year increases schooling attainment on average by a quarter of a year, and leads to higher literacy scores.[2]

Our study extends the findings of Jensen and Thornton (2003), updating the literature with evidence on age and effects of early marriage for four countries, Ethiopia, India (the states of Andhra Pradesh and Telangana), Peru and Vietnam, for a cohort born in 1994-5, 15 years on from the youngest Jensen and Thornton (2003) cohort. We can improve further on the analysis, as we also have information on the young women as they have grown up. The young women in our study have been surveyed along with their families from the ages of 8 to

2 While Field and Ambrus (and others) use age of menarche for the instrumental variable, this is not possible in our dataset as we have only incomplete information on the age of menarche.

22. We therefore can examine their most recent outcomes and compare women who were married in their teenage years with those who were not, and also assess whether there were any differences apparent at earlier ages, by examining characteristics such as school enrolment during childhood, and household expectations for their future when they were younger. We are unable to make causal inference from this analysis, given the difficulties in disentangling the effect of early marriage from other factors that may differ for girls who are married earlier. However, we can move from a simple correlation to a conditional correlation – by controlling for factors that differ before the girl is married, and seeing whether significant differences still remain at age 22. We can also examine the change from ages 15 to 22 in certain outcomes, to control, for example, for the possibility that girls who are married earlier already have lower feelings of agency.

3. Data

We use data from Young Lives, a longitudinal study following 12,000 children living in four countries (Ethiopia, India, Peru and Vietnam) over 15 years, with five rounds of data collection to date. The surveys cover two cohorts – a Younger Cohort of about 8,000 children (2,000 per country) born in 2001-2, and an Older Cohort of about 4,000 children (1,000 per country) born in 1994-5. The children were selected from 20 sentinel sites and while it was decided that a range of children should be sampled (not only the poorest), poor families were over-sampled.

This study focuses on girls from the Older Cohort who were age 7/8 during the first survey round in 2002 and age 21/22 during Round 5 in 2016.[3] The percentage of girls in our sample who were ever married by age 19 is shown in Table 1. The rate is highest in India at almost 44 per cent, and lowest in Peru at just below 3 per cent. The rates of cohabitation show Peru having the highest rate, of almost 30 per cent of young women. The rate of childbearing is also highest in Peru, at slightly more than 30 per cent, closely followed by India. Almost one in five 19-year-old women in Vietnam are mothers, and in Ethiopia it is one in eight.

Table 1. *Girls' status by age 19*

	Ethiopia	India*	Peru	Vietnam
Number of girls in Young Lives sample	**366**	**472**	**273**	**439**
Ever married by age 19 (%)	18.9	43.9	2.9	23.9
Ever cohabited by age 19 (%)	5.7	n/a	29.3	5.5
A parent by age 19 (%)	12.6	26.9	30.8	18.2
Ever married/cohabited/parent by age 19 (%)	23.2	43.9	35.2	24.8

Notes: *In India, no information about cohabitation was obtained and parenthood is asked only to respondents who are already married.

For our analysis, we combine all girls who were married, cohabiting or parents by the age of 19 in a category of 'TMCP' (teen married, cohabited, or parent) and compare outcomes

3 We focus on TMCP girls as there are only a few TMCP boys: 3.3 per cent in Ethiopia, 4 per cent in India, 13.5 per cent in Peru, and 8.1 per cent in Vietnam.

between TMCP girls and those who were not married, cohabiting or parents by age 19. By age 22 many women are also married/cohabiting and/or parents, but we make the distinction at age 19 to capture the 'early' classification. The numbers are shown in the final line of Table 1. A quarter of Ethiopian and Vietnamese girls are in the TMCP category, more than a third of Peruvian girls, and more than two-fifths of Indian girls.

Figure 1 shows the overlap between the categories. In India, since parenting questions were only asked to married respondents, mothers are by definition a subset of those married. In Ethiopia and Vietnam, the number of women who bore children outside of marriage or cohabitation is extremely low. In Peru, there are more unmarried mothers who are not cohabiting, and likely raising their child alone or only with the help of their parents.

Figure 2 shows the cumulative number of girls who have either married, cohabited or given birth up to just before reaching 20 years old At all ages there are higher numbers of TMCP girls in India than other countries, followed by Peru.

Figure 1. *Overlap in girls' status by age 19*

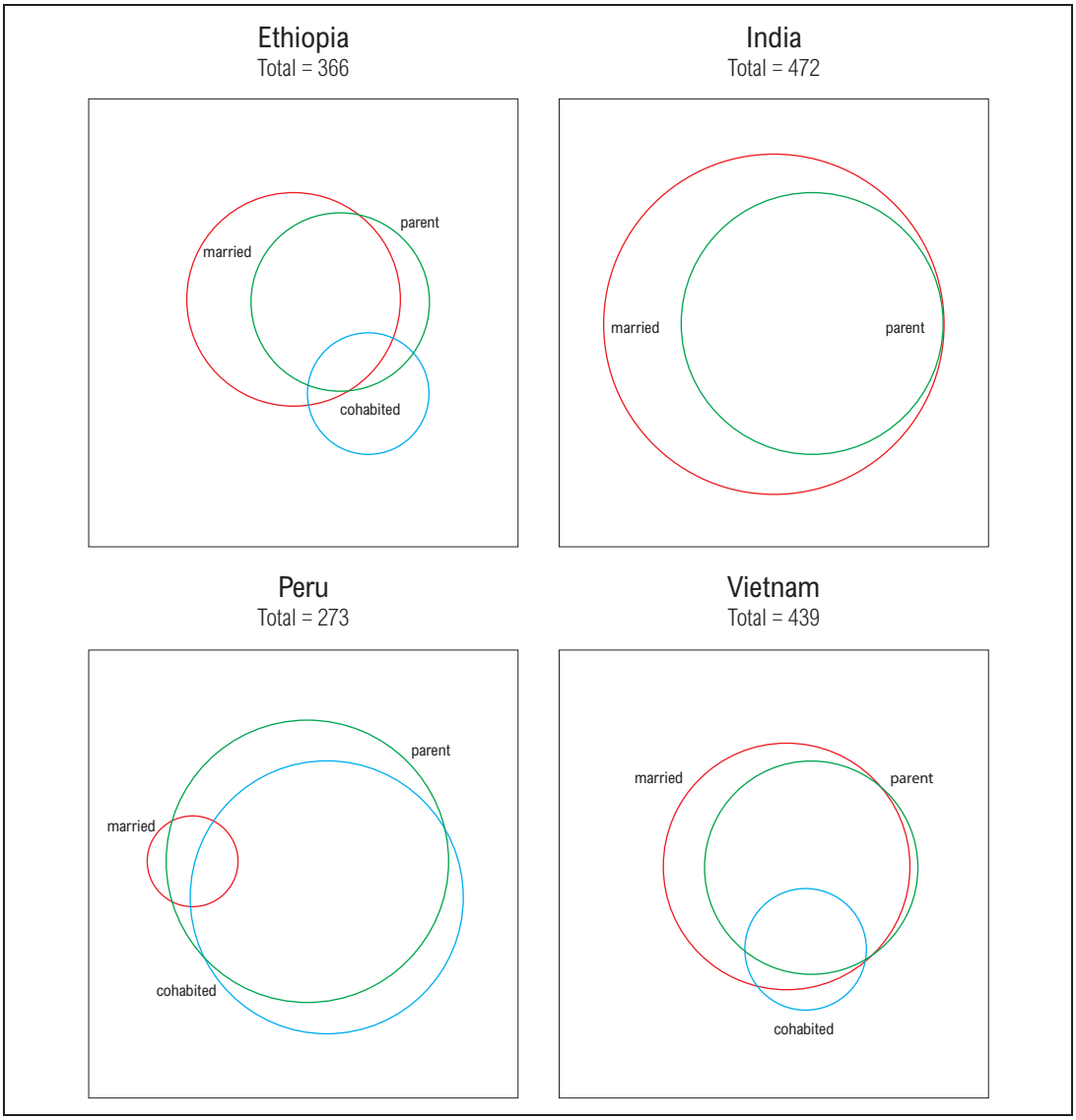


Figure 2. *Percentage of girls who have been married, cohabited, or given birth, by age*

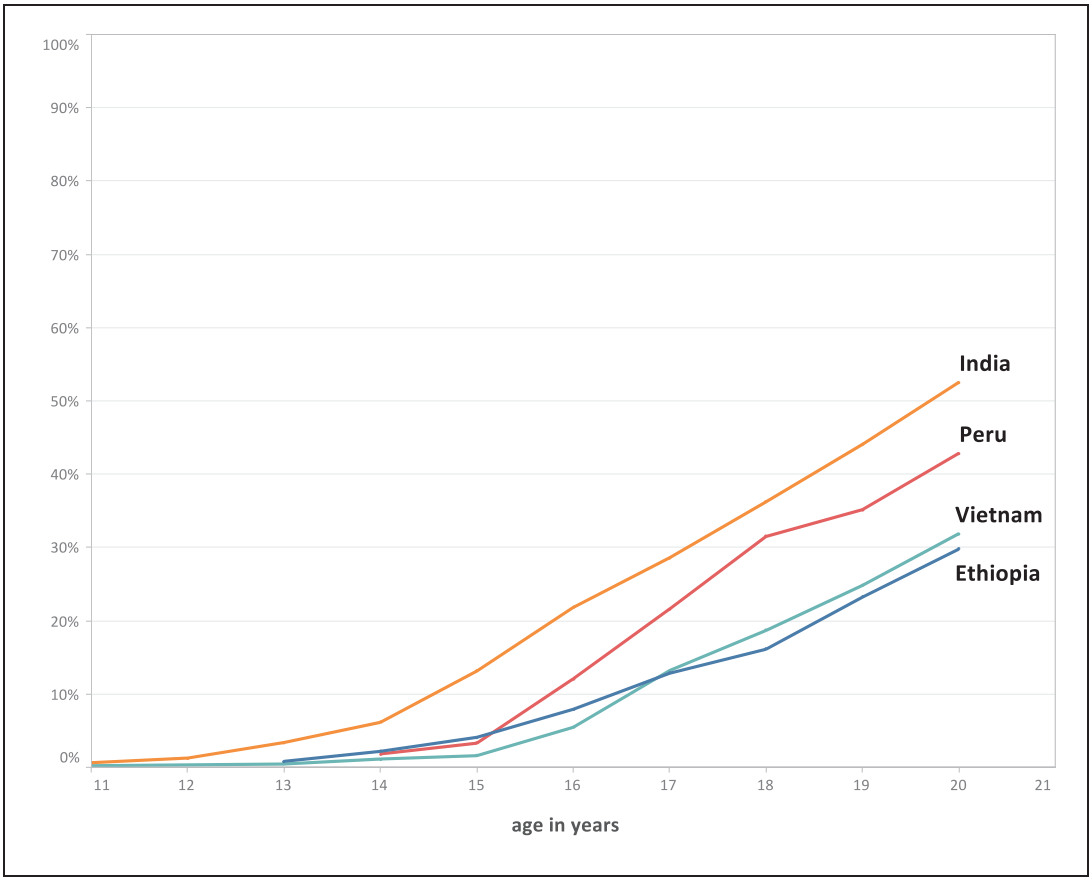


Table 2 breaks down the number of girls who were TMCP by location and wealth. In Ethiopia, India and Vietnam the incidence of TMCP is predominantly rural. In all countries, those who come from households at the lower end of the wealth distribution are more likely to be TMCP. Regional disparities in TMCP incidence are present in Ethiopia, while girls belonging to Scheduled Castes and other castes in India are less likely to be TMCP. In Peru, there is no significant difference in TMCP between girls whose mother's primary language is Spanish and non-Spanish speakers. In Vietnam, however, two in three girls from a minority ethnic group are already married, cohabiting, or have given birth by age 19, a significant difference compared to Kinh-majority girls.

Table 2. *Percentage TMCP by location, wealth, and ethnicity*

	Ethiopia		India		Peru		Vietnam	
	% TMCP	p-value	% TMCP	p-value	% TMCP	p-value	% TMCP	p-value
Overall	23.22		43.86		35.16		24.83	
Location								
Rural	29.58		49.05		43.48		27.82	
Urban	11.11	0.000	25.71	0.000	32.35	0.107	10.53	0.000
Household wealth								
Bottom	33.61		53.46		43.96		42	
Middle	25.41	0.162	47.13	0.262	41.11	0.701	17.48	0.000
Top	10.74	0.000	30.77	0.000	20	0.000	14.38	0.000
Ethnicity proxy								
Region								
Tigray	22.5							
Amhara	27.5	0.468						
Oromiya	41.67	0.012						
SNNP	14.12	0.167						
Addis Ababa	6.12	0.006						
Caste								
Scheduled Castes			39.8					
Scheduled Tribes			41.67	0.818				
Backward Classes			51.89	0.047				
Others			32.35	0.276				
Mother's first language								
Spanish					36.13			
Non-Spanish					31.58	0.479		
Child's ethnicity								
Kinh majority							18.91	
Minority group							67.92	0.000
Sample size	**366**		**472**		**273**		**439**	

Notes: P-values are from t-test on difference between means of the category from the same row and first category.

4. Characteristics of the marriages of teenage girls

This section examines the choice of spouse and characteristics of the marriages of women who were married by the time they were 19 years old (Table 3).[4] Women who were married were asked about their living arrangements. These vary quite substantially across the four countries. In Ethiopia most women live in their own separate house with their spouse, whereas in Vietnam the majority live with the spouse's family. In India, the largest proportion live with the spouse's family, though a third live in their own separate house, and a fifth live with their natal family.

When comparing the economic status of their own natal family with the one that they 'married into', the responses are varied. Almost half of Ethiopian, a third of Indian, and two-thirds of Vietnamese young women said their status was the same as that of their spouse's family. A fifth said they were previously worse off than their spouse in Ethiopia and India, and with the proportion is lower in Vietnam at just an eighth. Almost half of the Indian women said that their status was higher than their spouse, compared to less than a third of the Ethiopian women and less than a fifth of Vietnamese women.

Table 3. *Characteristics of marriages of girls who have ever been married by age 19 (currently married, separated, divorced, widowed)*

	Ethiopia	India	Peru	Vietnam
Number of girls married by age 19	69	207	8	105
Living arrangement (%)				
In own separate house	85.5	32.4	75	33.3
With spouse's family	1.4	45.4	0	55.2
With natal family	13	20.8	25	9.5
No response	0	1.4	0	1.9
Economic status of natal family (%)				
Same with spouse	44.9	33.3	75	66.7
Better than spouse	31.9	44	0	17.1
Worse than spouse	20.3	22.7	25	15.2
No response	2.9	0	0	1
Deciding on who to marry (%)				
Girl had a say	60.9	87	100	100
Girl had no say	39.1	13	0	0
Girl's thought on age of marriage (%)				
Got married at the right age	42	40.5	25	49
Got married too young	58	59	75	49
Got married older than ordinary	0	0.5	0	1.9
Age gap (spouse minus Young Lives girl)				
Average age gap (years)	7.2	6.8	3.9	5.3

4 Peru has very few early marriages, with a higher rate of cohabitation before the age of 20, so we do not comment on the proportions in Peru further, as the married sample is only eight young women.

The majority of women in Ethiopia and India believed that they got married too young, whereas in Vietnam almost exactly half did. All the women in Vietnam said that they had a say in who to marry, but in India 13 per cent did not, and almost 40 per cent in Ethiopia did not. The average age gap between spouses was highest in Ethiopia, though comparable to India with husbands around seven years older than their wives, and five years older on average in Vietnam.

5. Characteristics of TMCP women at age 22

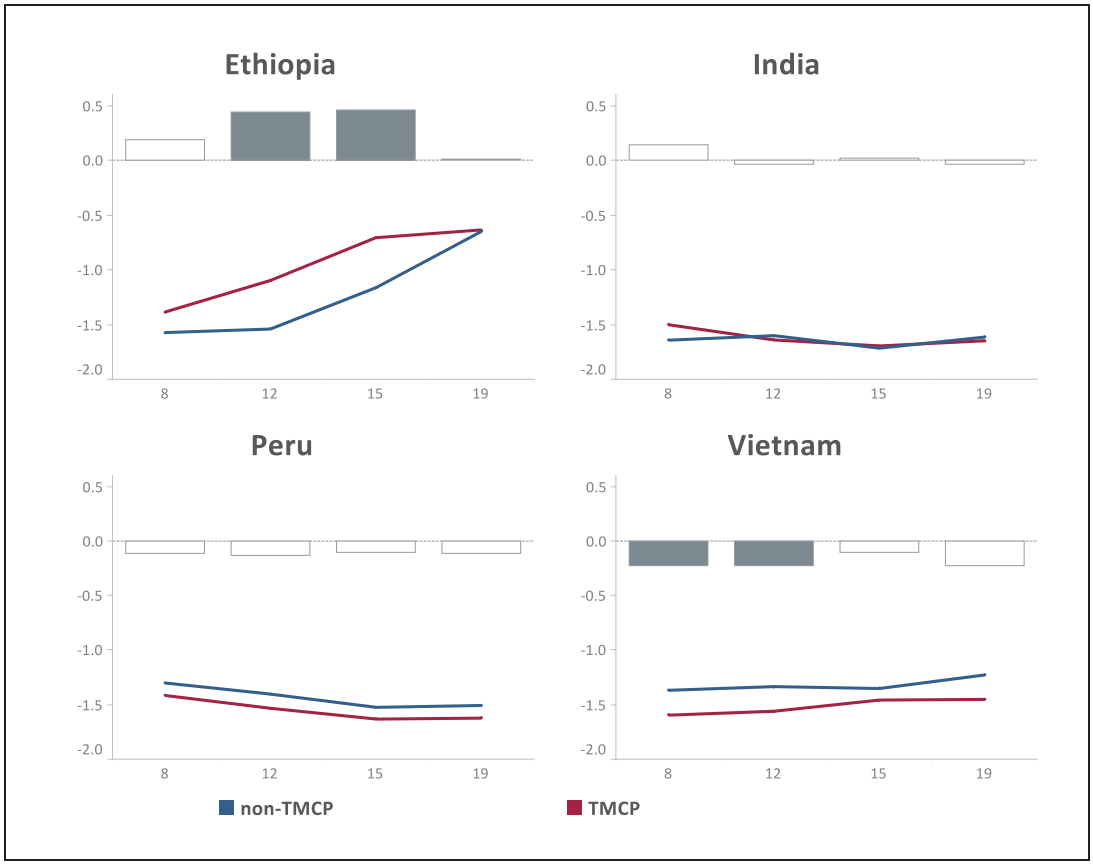
5.1. Descriptive comparisons

In this section we compare the characteristics of TMCP women with those who did not marry, cohabit or give birth in their teens. To do this, we compute the mean values of a number of outcomes obtained from different Young Lives survey rounds and use the t-test to determine if there is a significant difference between the two groups. To preview our findings, we see few early life differences, for example, in nutritional status or enrolment at age 8. Enrolment starts to become lower for TMCP girls at age 12 in India and Vietnam, but not in Ethiopia or Peru. Aspirations at age 12 are also not different in Ethiopia or Peru between TMCP and non-TMCP girls. However, by ages 19 and 22 there is a divergence in several outcomes, indicating that life changes more significantly after puberty.

We begin with a comparison of height-for-age z-scores (HAZ) through childhood and adolescence, as these are a commonly used proxy for nutritional status in child development studies (Shrimpton et al. 2001; Grantham-McGregor et al. 2007), with low HAZ considered an indicator of malnutrition in childhood.[5] Figure 3 shows that there are no significant differences at any age in India or Peru between TMCP and not TMCP women. In Ethiopia, those girls who will be married/cohabiting/parents by age 19 are significantly taller at age 12 and 15, though the difference disappears by age 19. This somewhat curious result may be explained if taller girls appear older and therefore are more likely to marry, but we have no further evidence to support this speculation. Only in Vietnam are early married women shorter at age 8 and 12, though the difference becomes insignificant by ages 15 and 19. Overall, we take these findings to show no systematic undernourishment in the development of TMCP women in three of the four study countries.

[5] HAZ are computed using WHO reference tables and software, available at www.who.int/childgrowth/en.

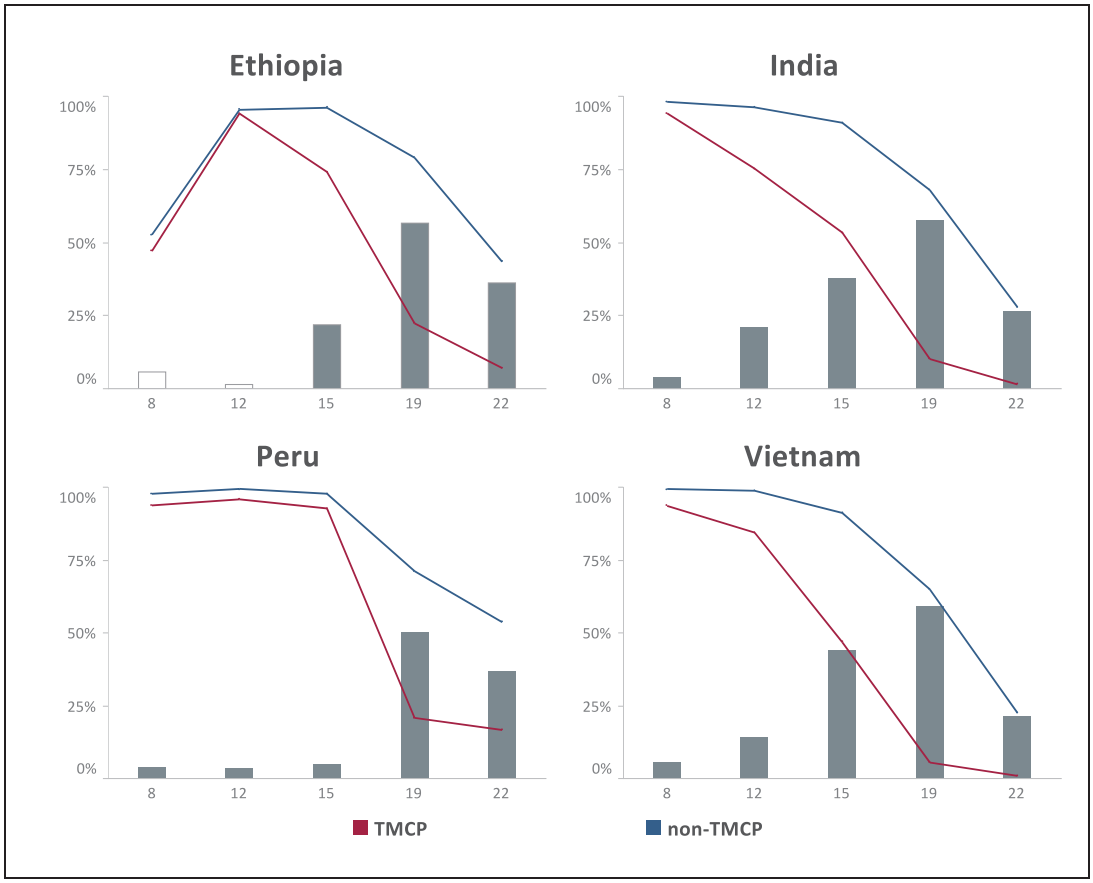
Figure 3. *Height-for-age z-scores, by age*



Notes: Solid bar indicates significant difference at 10 per cent level.

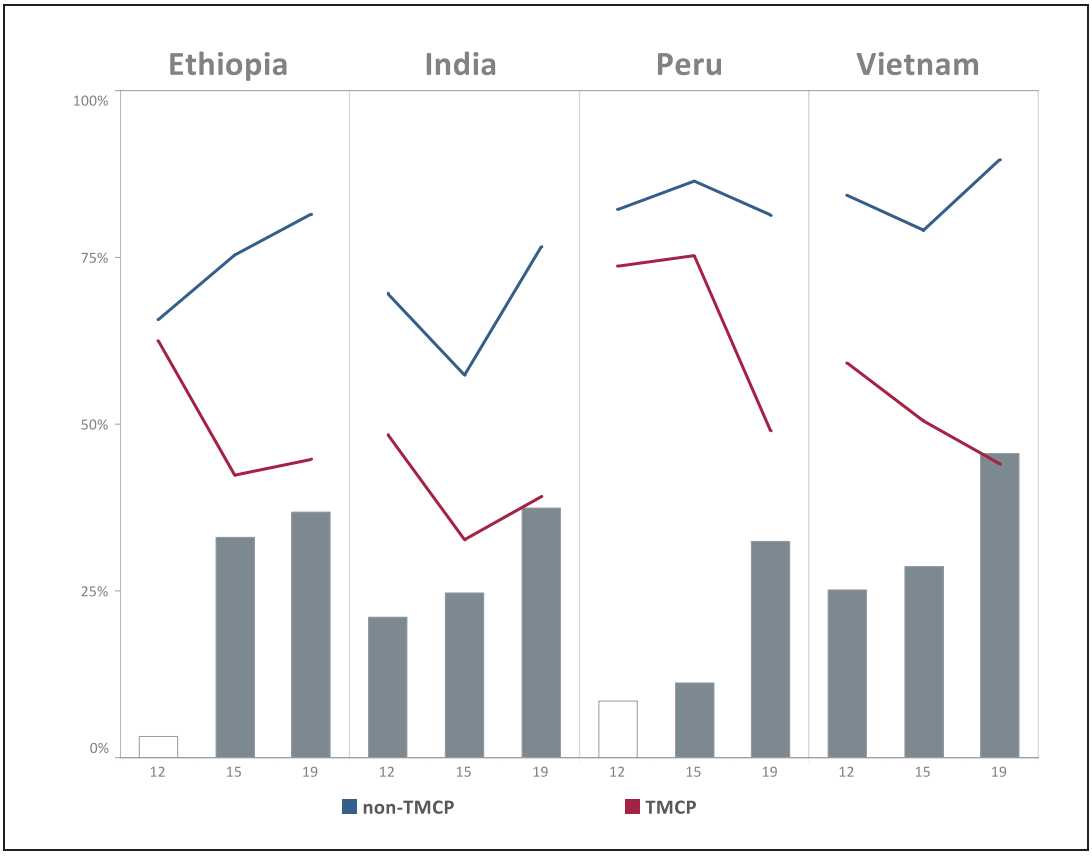
School enrolment shows a diverging picture for those who will be married earlier in life. Figure 4 indicates that while there are only slight differences at age 8 in all countries, the gap increases at age 8 in Vietnam and India, and increasingly widens up to age 19. A significant gap emerges only at age 15 in Ethiopia, which may have something to do with later enrolment in primary school (at age 8) so children are still in primary school at age 12. In Peru, there is a significant but quite small gap in the earlier years, but this widens strikingly at ages 19 and 22.

Figure 4. *Enrolment rates in formal education, by age*



Notes: Solid bar indicates significant difference at 10 per cent level.

Figure 5. *Percentage of girls aspiring to go to university, by age*



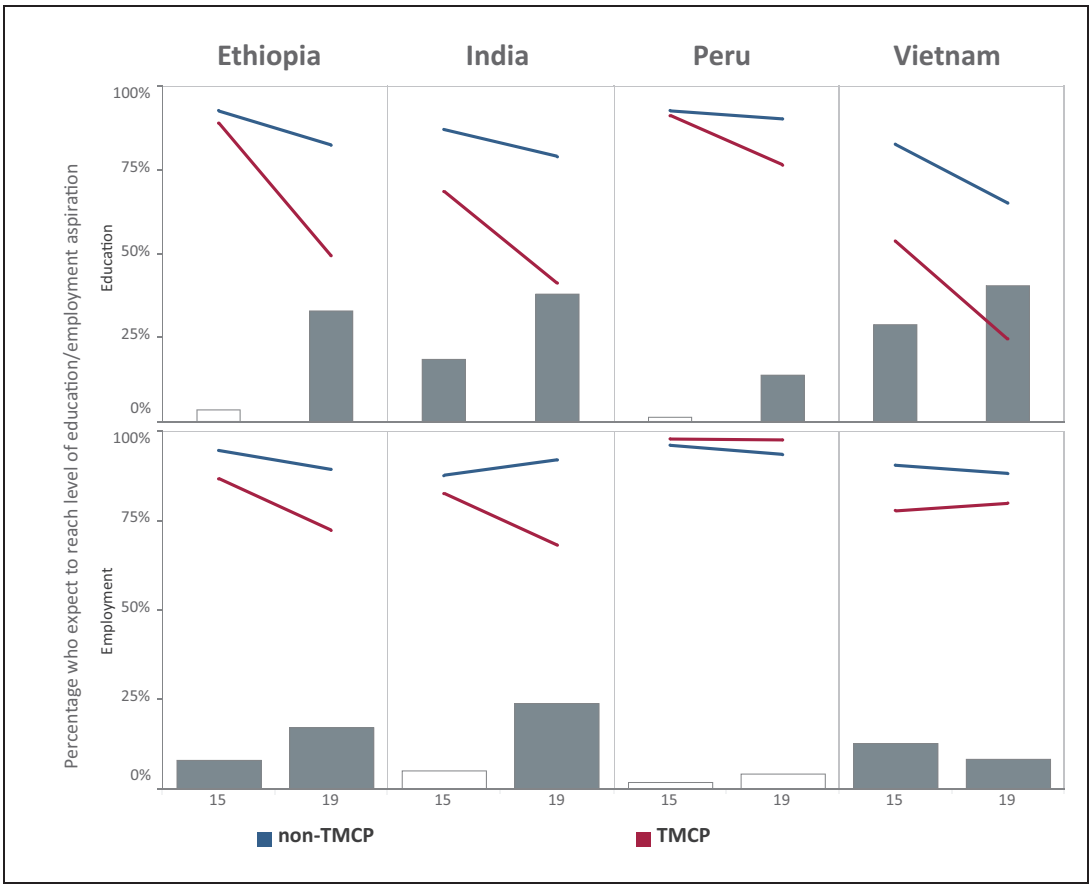
Notes: Solid bar indicates significant difference at 10 per cent level.

Beginning with the Round 2 survey when the children are age 11/12, children were asked what level of education they wanted to complete assuming they had no constraints and could stay in school as long as they want to. Figure 5 shows the percentage of girls aspiring to go to university. These aspirations are significantly different for TMCP and non-TMCP women in India and Vietnam by age 12, but not in Ethiopia or Peru. Between ages 12 and 15 a fall in aspirations is apparent all countries except Peru, where aspirations fall between ages 15 and 19. By the age of 19, in all countries there is a large and significant (greater than 25 per cent) gap in aspirations to attend university. This mirrors the reduction in school enrolment at ages 15 and 19, as when girls drop out of school it seems understandable that they would adjust their aspirations accordingly. We cannot claim any causality here; it could be that those who have dropped out of school are more likely to marry/cohabit/get pregnant in their teens precisely because they are out of school and, for example, parents encourage them to marry if they are not gaining any further education. However, the correlation clearly shows the educational disadvantage of TMCP women, that they are less educated and have lower aspirations by the time they marry.

Have established the differences in the level of education TMCP girls wish to achieve, the differences in whether the girls expect to reach these levels of education/employment are shown below. Figure 6 reflects whether they think they can achieve the goal that they aspire to. In India and Vietnam, TMCP girls have a significantly lower belief that they can achieve

even the lower level of education they aspire to than non-TMCP girls. This is not the case for 15 year olds in Ethiopia and Peru, but becomes so by age 19.

Figure 6. *Expectations on education and employment, by age*

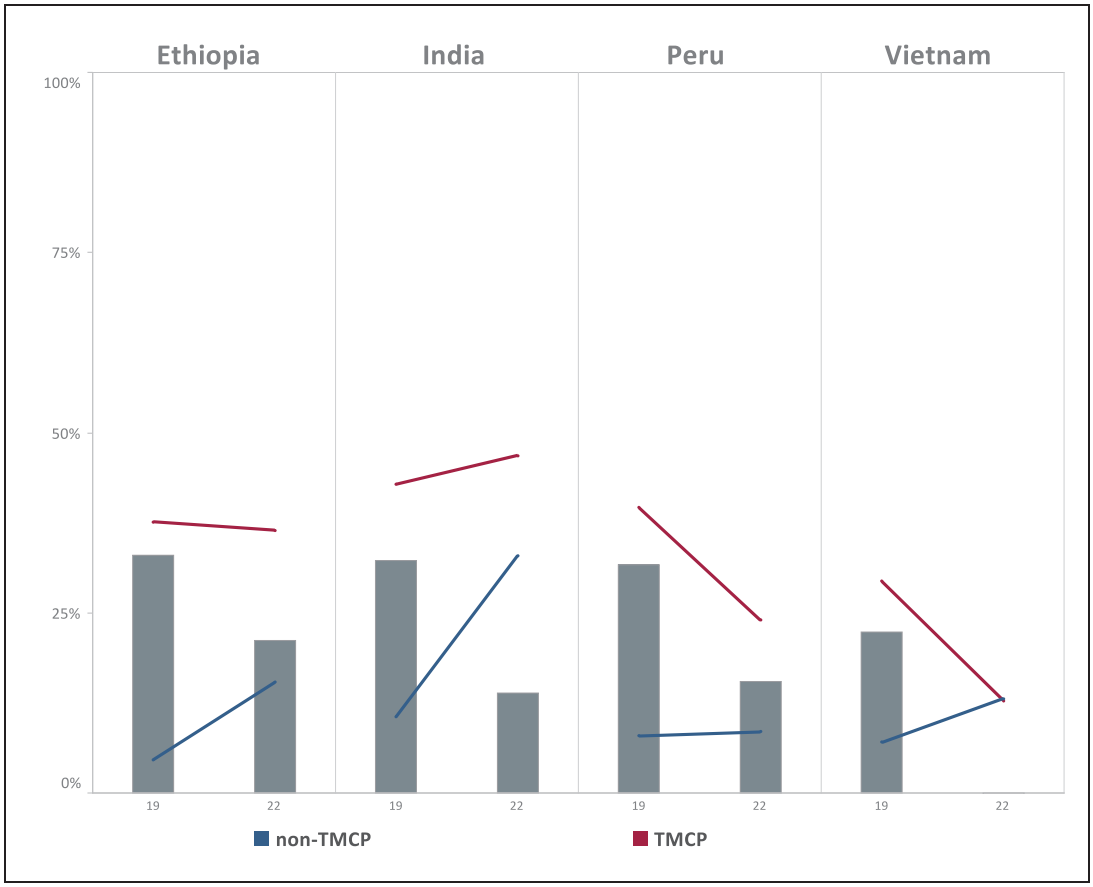


Notes: Solid bar indicates significant difference at 10 per cent level.

In terms of whether they can reach their employment goal, only Peruvian TMCP girls are as confident as non-TMCP girls that they can achieve the employment they aspire to by age 19 (bottom panel of Figure 6). For the other three countries, TMCP girls are significantly less confident of reaching their goals.

Further evidence of differences is shown in Figure 7, where the proportion who are neither working nor studying is significantly higher among TMCP young women in three of the four countries. Interestingly, in Vietnam there is a significant difference at age 19, but by age 22 the proportion of non-TMCP women who are neither working nor studying increases, while the TMCP proportion falls, and the two rates are almost indistinguishable. In all four countries the gap decreases between ages 19 and 22; presumably as women marry beyond the age of 19, they also drop out of the labour market and/or education. However, in Ethiopia, India and Peru the 10-15 per cent difference between the two groups remains significant at the age of 22. In the next section we examine whether this difference is still significant when we control for other factors that may also influence the probability of not being in school or employment, such as family background.

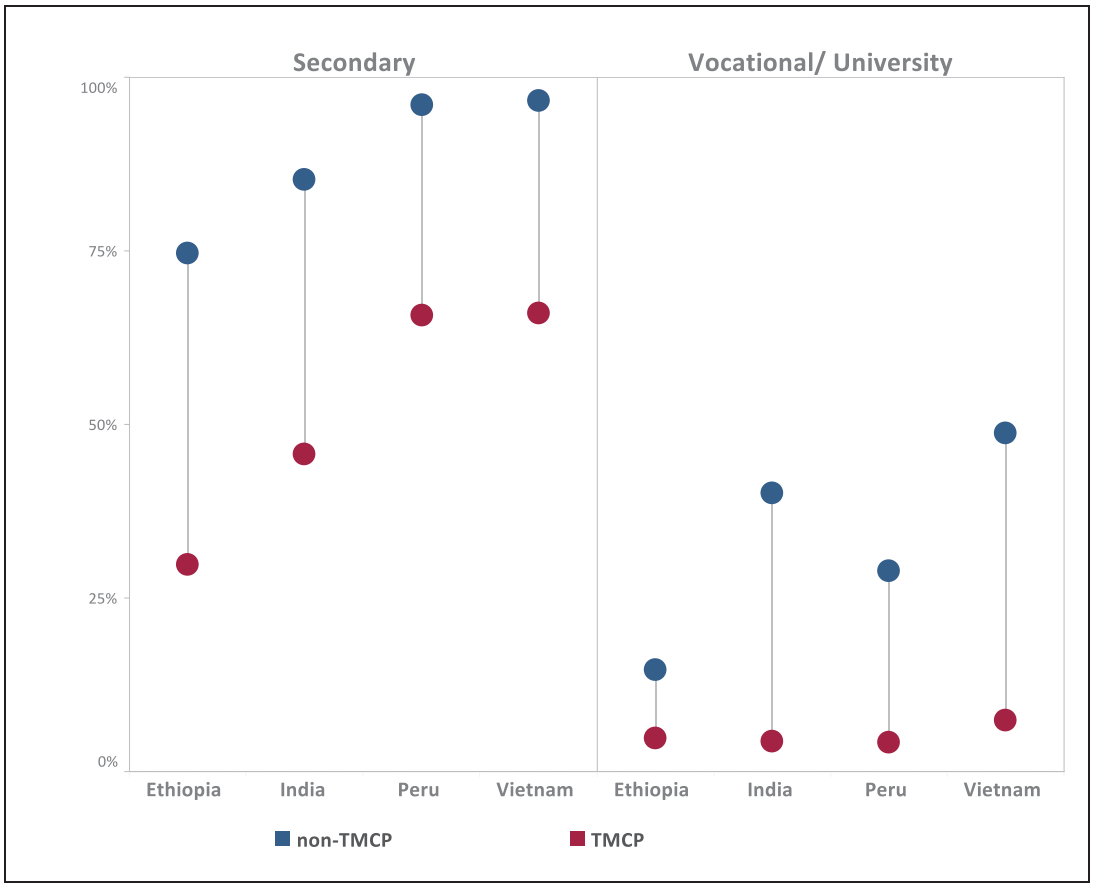
Figure 7. *Percentage of girls not working nor studying, by age*



Notes: Solid bar indicates significant difference at 10 per cent level.

There are also significant differences in those who have achieved a certificate in either secondary or higher education by TMCP status (see Figure 8). In Peru and Vietnam more than 90 per cent of girls who were not TMCP achieved their secondary certificate., compared to only 60 per cent of TMCP young women. In Ethiopia and India, the proportion achieving secondary certificates is lower for both groups, but TMCP women are still significantly less likely to have graduated from high school by the age of 22. In Ethiopia fewer than 30 per cent of TMCP women have achieved their secondary certificate. Fewer TMCP women also achieved a higher education (vocational or university) diploma by the age of 22; this was fewer than 8 per cent of TMCP women in all four countries, significantly less than those who delayed marriage/cohabitation/childbearing until after their teenage years.

Figure 8. *Percentage of women with secondary certificate and vocational/university diploma at age 22*



Notes: Solid circle indicates significant difference at 10 per cent level. Secondary means compulsory secondary education, which is lower secondary in Ethiopia, India, and Vietnam, and upper secondary in Peru.

We also explore psychosocial outcomes of the 22 year olds in our sample, examining the women's agency, life satisfaction, self-esteem, and views on gender equality. Agency or one's belief in her ability to make things happen and plan for the future is measured by asking the children and young women how much they agree or disagree with statements capturing different domains such as school, work and time use.[6] Life satisfaction is measured based on Cantril's Ladder of Life scale (Cantril 1965). From a scale of 1 to 9, with 9 representing the best possible life, respondents were asked to rate how they personally stand at the time of interview. To measure self-esteem or an individual's judgment of her self-worth, eight items of the General Self-Esteem section of the Marsh Self-Description Questionnaire I were adapted, while the Attitudes Toward Women Scale for Adolescents (AWSA) questionnaire was administered to measure an individual's views on gender equality in relation to behaviours and roles in society.[7]

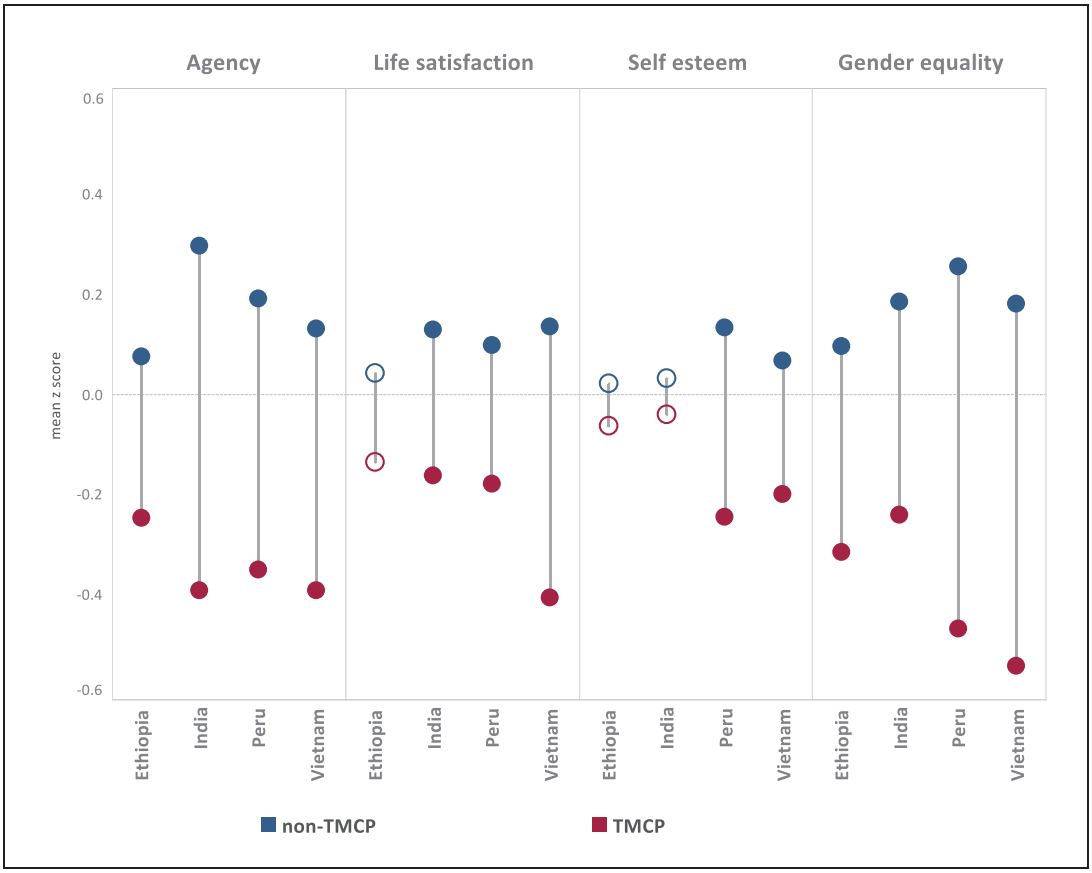
6 See Appendix 1 for statements on agency; see Yorke and Ogando (2018) for more information about the psychosocial measures administered by Young Lives.

7 See Appendix 2 for items on self-esteem, and Appendix 3 for AWSA items.

Z-scores were computed for each of the four measures to have a standardised index with mean 0 and standard deviation of 1 within each country. Figure 9 shows the differences in mean z-scores between TMCP and non-TMCP women. In all domains in all four countries, TMCP women scored lower on the respective indices, and almost all differences are significant. TMCP women have lower agency than average, especially in India, Peru and Vietnam. In Ethiopia, life satisfaction differences are not significant, but they are in the other three countries, with a particularly high gap (0.6 standard deviations) in Vietnam. In Ethiopia and India, self-esteem is not significantly lower, but it is in Peru and Vietnam.

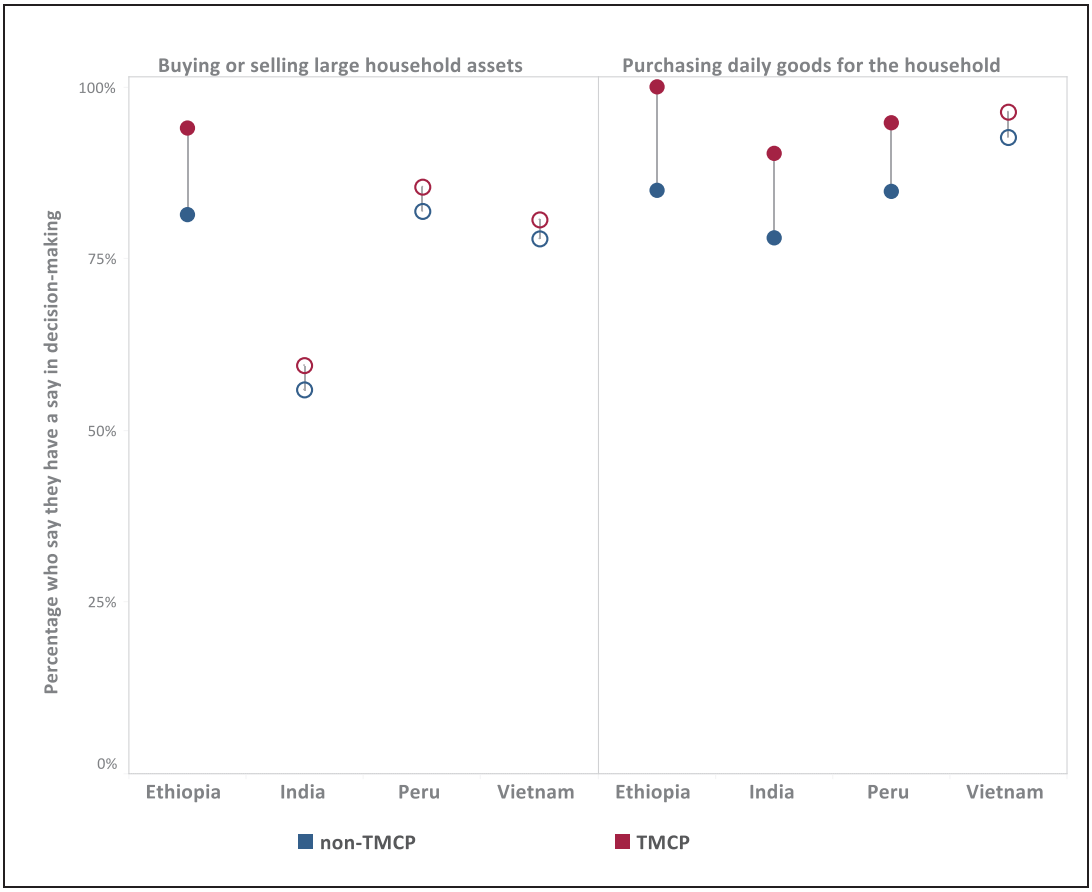
In all four countries, views on gender equality diverge significantly. TMCP women have less gender-egalitarian views on behaviours and roles in society compared to non-TMCP women. One item in particular shows an interesting yet expected result. When the 22-year-olds were asked if they agree or disagree that girls should be more concerned with becoming good wives and mothers than desiring a professional or business career, more TMCP women agree compared to non-TMCP (64 per cent versus 41 per cent in Ethiopia; 82 per cent versus 78 per cent in India; 19 per cent versus 13 per cent in Peru; and 66 per cent versus 53 per cent in Vietnam).

Figure 9. *Mean z-scores of psychosocial indicators and gender equality beliefs at age 22*



Notes: Solid circle indicated significant difference at 10 per cent level. All indices have been standardised to have a mean of 0 and a standard deviation of 1 within each country, for ease of interpretation and in order to compare results on the same graph.

Figure 10. *Household decision-making at age 22*



Notes: Solid circle indicates significant difference at 10 per cent level.

When we look at the 22-year-olds' decision-making in the household (Figure 10), more TMCP women than non-TMCP women state that they have a say in household decision-making in both buying/selling large assets and purchasing daily household goods. There is a significant difference between TMCP and non-TMCP women in Ethiopia with respect to large asset decision-making, while the difference is not significant in the other three countries. More than 90 per cent of TMCP women have a say in deciding on daily household goods purchases. This is significantly higher than non-TMCP in Ethiopia (85 per cent), India (78 per cent), and Peru (85 per cent), but less than in Vietnam (93 per cent).

We also have information on agency and life satisfaction in earlier periods, and we return to a comparison of these and how they evolve over time for TMCP and non-TMCP women later in the paper.

5.2. Conditional comparisons

In order to move beyond analysing each variable in isolation, we include other covariates in a regression framework in order to examine conditional correlations of some adult outcomes, at age 22, while controlling for factors that may also differ between TMCP and non-TMCP women and confound our unconditional estimates. We also look at the change over time in those outcomes that were measured at ages 15 and 22, to control for differences in the levels of, for example, empowerment, before the children were married.

5.2.1. *Difference-in-differences analysis*

We undertake a difference-in-differences (DID) analysis for those variables we have measurements *for* at age 15, to provide a before and after comparison. That is, we take the difference in outcomes (e.g. life satisfaction) after marriage/cohabitation/childbirth between TMCP and non-TMCP women and compare these to the differences in the same outcomes before marriage/cohabitation/childbirth. There may already be differences between the young women before marriage, cohabitation, or childbirth, which are not fully captured by the unconditional comparisons tested in the previous section. From section 5.1., we observed that TMCP women have significantly lower agency and life satisfaction compared to non-TMCP women at age 22.

Using the DID analysis, we are able to capture whether differences in these indices were already present (at age 15) before the girls got married and verify if TMCP indeed has an impact on girls' agency and life satisfaction at age 22. To do this, we need to exclude those married before 2013 (before age 15) in the analysis so that the treatment variable is zero for everyone at baseline. This results in a marginally smaller sample for three countries (4 per cent, 3 per cent and 2 per cent of girls in Ethiopia, Peru and Vietnam, respectively, are TMCP by age 15), and in India we have 62 girls (13 per cent) married by age 15. It is important to note that one important assumption of the DID is that these differences between TMCP and non-TMCP girls at age 15 do not change over time.[8]

Table 4. *Difference-in-difference estimates, agency*

	Ethiopia		India		Peru		Vietnam	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
TMCP	0.093	0.130	-0.197*	-0.246*	-0.168	-0.174	-0.233**	-0.308***
	(0.164)	(0.155)	(0.112)	(0.128)	(0.144)	(0.143)	(0.109)	(0.105)
Age 22	0.083		0.162		0.128		0.041	
	(0.125)		(0.105)		(0.098)		(0.102)	
TMCP x age 22	-0.332**		-0.326*		-0.304*		-0.209	
	(0.139)		(0.157)		(0.160)		(0.169)	
Age 12		0.045		-0.061		-0.005		-0.084
		(0.144)		(0.116)		(0.079)		(0.097)
TMCP x age 12		-0.148		0.053		0.087		0.279**
		(0.220)		(0.174)		(0.172)		(0.119)
Constant	0.183**	0.476***	0.064	0.104	0.275***	0.211**	0.044	-0.034
	(0.065)	(0.073)	(0.060)	(0.067)	(0.092)	(0.076)	(0.051)	(0.053)
Observations	701	700	809	797	525	522	859	846
R-squared	0.055	0.078	0.097	0.044	0.136	0.077	0.084	0.051

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

The DID estimates at age 22 (TMCP x age 22) for each country in Table 4 show that the difference is significant for Ethiopia, India and Peru, and quite similar in magnitude; between the age of 15 and 22, those married/cohabiting/parents earlier experienced a fall of around a third of a standard deviation in our measure of agency relative to those who were not. In

8 This is known more formally as the parallel trend assumption (Angrist and Pischke 2008).

Vietnam the difference is negative but not significant. This method controls for differences in agency at the earlier age of 15. In Vietnam and India, there are significant differences in agency by age 15, which are not significant in Ethiopia or Peru.

A robustness check on these results aims to understand whether the trend in agency levels is similar for those who were married/cohabiting/parents early versus those who were not, in earlier periods of life. Therefore, we also check the change in agency between ages 12 and 15. If these are the same before TMCP, then we would infer that the results above capture reliably the impact of TMCP on agency levels. The DID estimates at age 12 (TMCP x age 12) show that in Vietnam there is a reduction in agency between the ages of 12 and 15, which may be linked to the fall in enrolment for TMCP girls. For the other countries we see no change in agency between 12 and 15, though we do find that in India, agency is lower for TMCP girls at both ages.

We also compare changes in a measure of life satisfaction between ages 15 and 22 for TMCP women versus those who were not TMCP. Our DID results from Table 5 show that TMCP women in Peru experience a significantly greater drop in life satisfaction between ages 15 and 22, but not in the other three countries. In Vietnam we see that life satisfaction is lower for TMCP women at ages 12, 15 and 22 but does not change significantly over time.

Table 5. *Difference-in-difference estimates, life satisfaction*

	Ethiopia		India		Peru		Vietnam	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
TMCP	0.088	0.055	-0.110	-0.140	-0.096	-0.104	-0.318**	-0.351**
	(0.166)	(0.159)	(0.132)	(0.127)	(0.114)	(0.138)	(0.126)	(0.127)
Age 22	0.030		0.031		0.093		0.023	
	(0.083)		(0.123)		(0.102)		(0.109)	
TMCP x age 22	-0.196		-0.023		-0.259*		-0.091	
	(0.182)		(0.151)		(0.143)		(0.110)	
Age 12		-0.007		0.088		0.029		0.004
		(0.112)		(0.129)		(0.103)		(0.132)
TMCP x age 12		-0.045		-0.235		-0.067		-0.022
		(0.179)		(0.147)		(0.233)		(0.130)
Constant	-0.048	-0.169***	0.468***	0.339***	0.443***	0.354***	-0.277***	0.081
	(0.041)	(0.055)	(0.075)	(0.071)	(0.069)	(0.069)	(0.063)	(0.074)
Observations	701	701	819	812	525	522	860	858
R-squared	0.054	0.118	0.110	0.086	0.086	0.075	0.108	0.105

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

We can conclude that in Ethiopia, India, and Vietnam, those women who are TMCP have lower life satisfaction from the ages of 12 to 22, but it is not clear that this is a causal effect of the marriage/cohabitation decision. There may be other factors (for example, we know from the descriptive analysis that TMCP women come from poorer households) that are contributing to the lower life satisfaction.

Local conditions and community characteristics may have an impact on women's agency and life satisfaction. We test the robustness of our results above by adding the urban dummy and community fixed effects in the regression. The results remain the same: there is a significant

and negative difference in agency between TMCP and non-TMCP women in Ethiopia, India, and Peru, while we see a significant difference in life satisfaction only in Peru.

5.2.2. *Regression results*

We include correlates in a regression framework to allow us to examine whether, conditional on earlier life circumstances, the correlation between early marriage and outcomes in early adulthood remains significant.[9]

Controlling for unobservable differences at the community level[10] and including controls for early childhood circumstances such as nutritional status, early aspirations, and household wealth at age 8, Table 6 shows that in Ethiopia, TMCP women are 19 per cent more likely to be not working nor studying compared to those who were not TMCP, and in India this is 18 per cent. In Peru and Vietnam there is no significant difference in the probabilities.

Table 6. *Association between TMCP and work/study status (outcome variable: not working nor studying)*

	Ethiopia	India	Peru	Vietnam
TMCP	0.188***	0.184***	0.098	0.024
	(0.057)	(0.054)	(0.057)	(0.041)
Height-for-age z-score (age 12)	0.000	0.013	-0.016	0.005
	(0.022)	(0.016)	(0.020)	(0.019)
Aspired university (age 12)	0.048	-0.039	-0.068	-0.011
	(0.047)	(0.053)	(0.080)	(0.055)
Enrolled (age 12)	-0.300	-0.322***	-0.095	-0.008
	(0.182)	(0.110)	(0.277)	(0.134)
Middle wealth tercile (age 8)	0.008	0.086	0.015	0.007
	(0.060)	(0.059)	(0.101)	(0.045)
Top wealth tercile (age 8)	0.046	0.220**	0.023	0.052
	(0.079)	(0.096)	(0.106)	(0.061)
Constant	0.335*	0.697***	0.230	0.177
	(0.184)	(0.115)	(0.289)	(0.147)
Observations	345	402	266	420
R-squared	0.142	0.110	0.123	0.034

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Our second regression model estimates the association between TMCP and completing secondary education by the age of 22. Table 7 estimates a conditional model with the inclusion of community and household background variables that may also affect secondary completion. In Ethiopia and Peru, the conditional estimates are not materially different to the unconditional estimates. In India and Vietnam, the conditional probability is reduced, with differences in enrolment at age 12 and aspirations at age 12 contributing to the probability of finishing secondary education. The probability of finishing education, conditional on

9 See Appendix 4 for a description of the independent variables used.

10 These are community fixed effects. We included only community effects in a stepwise estimation, and found that they made little difference to the TMCP coefficient in any of the countries.

enrolment and aspirations at age 12 is 23 per cent lower for TMCP girls in India and 14 per cent lower for TMCP girls in Vietnam.

In all four countries we can therefore conclude that we find a significant and negative correlation between TMCP and completing secondary school, which is important in size. As noted, we cannot rule out that some other factor which is not included in the model is driving our results, but the association is large enough to warrant investigation through further qualitative and quantitative analysis.

Table 7. *Association between TMCP and secondary education*

	Ethiopia (Completed lower secondary)	**India** (Completed lower secondary)	**Peru** (Completed upper secondary)	**Vietnam** (Completed lower secondary)
TMCP	-0.375***	-0.233***	-0.231***	-0.136**
	(0.046)	(0.051)	(0.058)	(0.054)
Height-for-age z-score (age 12)	0.041*	0.004	-0.012	-0.006
	(0.021)	(0.016)	(0.021)	(0.013)
Aspired university (age 12)	0.078	0.144***	0.093	0.151***
	(0.050)	(0.046)	(0.054)	(0.047)
Enrolled (age 12)	0.323***	0.546***	0.455**	0.442***
	(0.096)	(0.094)	(0.194)	(0.076)
Middle wealth tercile (age 8)	-0.012	0.097**	0.064	0.010
	(0.057)	(0.043)	(0.062)	(0.039)
Top wealth tercile (age 8)	0.208**	0.079	0.104	0.044
	(0.085)	(0.071)	(0.066)	(0.040)
Constant	0.420***	0.202	0.268	0.311**
	(0.136)	(0.124)	(0.197)	(0.117)
Observations	343	403	266	420
R-squared	0.361	0.275	0.306	0.387

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

6. Conclusions and further work

In this working paper, we examined marriage, cohabitation and childbearing of girls below the age of 19 in four low- and middle-income countries: Ethiopia, India (the state of Andhra Pradesh), Peru and Vietnam. The proportion of those married before age 19 is highest in India, with very few early marriages in Peru. However, in Peru the rate of cohabitation and teen pregnancy is very high. The proportion of girls who had a say in who they would marry was lowest in Ethiopia at 60 per cent, 87 per cent in India, and 100 per cent in Vietnam. The majority of these girls believe that they married too young.

Our findings show that girls who marry early are often from poorer, rural households, and girls on average marry a husband who is at least five years older than them. In Peru, cohabitation is more common in urban areas. Most girls who have had a child by 19 are either married or cohabiting, but in Peru there is a significant minority who are neither.

We find no significant differences in earlier life indicators of child investments, proxied by height-for-age at 8 and 12 years old. Those who are TMCP are not more likely to be stunted, for example, nor much more likely to be out of school at age 8. However, gaps in enrolment emerge at age 12 in India and Vietnam, and increase as the girls age and enter adolescence. In Ethiopia the gap becomes wider at age 15 (and also continues to widen over time), and in Peru the gap only becomes large at age 19. The difference in enrolment is mirrored in the number of girls who finish high school and continue into higher education, which is also realistically reflected in the girls' aspirations to do so at age 19. The difference in aspirations appears earlier; fewer TMCP girls in all four countries by the age of 15 expect to go to university, and by age 22 a higher proportion of TMCP women are neither working nor studying. The findings underline the importance of the adolescent life-phase as a period in which gaps emerge, both between boys and girls, but also between girls in difference circumstances.

We find significant associations between teen marriage and feelings of agency, and other psychosocial indicators. In all four countries, TMCP women have significantly lower agency, life satisfaction, self-esteem, and gender-equality views compared to non-TMCP women by age 22. A difference-in-difference analysis investigated the differential effect of marrying or giving birth by age 19 on women's agency and life satisfaction, and the results show that TMCP women in Ethiopia, India, and Peru have lower agency than non-TMCP women. However, there is no evidence to suggest that life satisfaction changes in significantly different ways between ages 19 and 22 for the early-married young women.

Further analysis on the impact of TMCP on work and study status, and secondary education completion shows that, even when early-life conditions are factored in, TMCP women at age 22 in Ethiopia, India, and Peru have a higher probability of neither working nor studying compared to non-TMCP women. TMCP is also associated with non-completion of secondary education in all four countries. Our findings of high aspirations of both parents and girls in their early years show that pre-adolescent interventions may be a promising avenue for policy. Keeping girls in school requires complementary policies on school effectiveness and, in particular, protecting girls from violence and harassment.

Findings from qualitative work reveal more about how the poor outcomes that we have uncovered manifest, in particular through a lack of services and opportunities for young

women, combined with inequitable gender norms, which require change in whole communities and societies (Winter 2018). In particular, access to education, training, and effective sexual and reproductive health information and services are lacking. Therefore, support from community and women's organisations has the potential to mitigate the impact of marriage on girls' and young women's ability to control their own fertility, their income and opportunities, and protection from violence and abuse.

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Appendices

Appendix 1. Agency statements

1. If I try hard, I can improve my situation in life.
2. Other people in my family make all the decisions about how I spend my time.
3. I like to make plans for my future.
4. If I study hard at school I will be rewarded by a better job in the future.
5. I have no choice about the work I do – I must work.

Appendix 2. Self-esteem statements

1. I do lots of important things.
2. In general, I like being the way I am.
3. Overall, I have a lot to be proud of.
4. I can do things as well as most people.
5. Other people think I am a good person.
6. A lot of things about me are good.
7. I'm as good as most other people.
8. When I do something, I do it well.

Appendix 3. AWSA items

1. Swearing is worse for a girl than for a boy.
2. On a date, the boy should be expected to pay all expenses.
3. On the average, girls are as smart as boys.
4. More encouragement in a family should be given to sons than daughters to go to college.
5. It is all right for a girl to want to play rough sports like football.
6. In general, the father should have greater authority than the mother in making family decisions.
7. It is all right for a girl to ask a boy out on a date.
8. It is more important for boys than girls to do well in school.
9. If both husband and wife have jobs, the husband should do a share of housework such as washing dishes and doing the laundry.
10. Boys are better leaders than girls.
11. Girls should be more concerned with becoming good wives and mothers than desiring a professional or business career.
12. Girls should have the same freedoms as boys.

Appendix 4. Independent variables for the regression

Variable name	Description
Urban (age 8)	Equals 1 if household is living in an urban location when child was age 8 (Round 1 survey), 0 otherwise.
Height-for-age z-score (age 12)	Child's height-for-age z-score at age 12 (Round 2).
Child aspired university (age 12)	Equals 1 if child answered 'university/college' when asked the question: 'Imagine, you had no constraints and could stay at school as long as you liked, what level of formal education would you like to complete?'; 0 otherwise, at age 12 (Round 2).
Child enrolled in formal education (age 12)	Equals 1 if child was enrolled in formal education at time of interview in Round 2, 0 otherwise.
Household wealth (age 8): middle tercile	Equals 1 if household belongs to the middle tercile in Round 1. Household wealth computed using the Young Lives wealth index.*
Household wealth (age 8): top tercile	Equals 1 if household belongs to the top tercile in Round 1. Household wealth computed using the Young Lives wealth index.

Notes: * The Young Lives wealth index is the primary measure of socio-economic status of households within the Young Lives sample. See Briones (2017) for details on how the index is computed.

How Does Teenage Marriage and Motherhood Affect the Lives of Young Women in Ethiopia, India, Peru and Vietnam?

This working paper examines the characteristics of young women who have been married, cohabited, or given birth in their teenage years in four low- or middle-income countries: Ethiopia, India, Peru and Vietnam. It finds that the rates of teen marriage are highest in India, but a high proportion of Peruvian girls are already cohabiting or mothers by the age of 19. The paper compares those who were married/cohabiting as teenagers with those who were not, at age 22, and finds that young women who were married/cohabiting in their teens are significantly less likely to have completed high school in all countries, are less likely to believe in equality between men and women, and score lower on measures of empowerment. Some of these observed differences were apparent before their marriage, so it is difficult to make a causal attribution to the event of marrying, or to early life circumstances. However, even conditional on other correlates, the probability of finishing high school is 15-25 per cent lower for teen-married women, and the fall in agency between ages 15 and 22 is significantly lower than for those who were not married young.

This quantitative analysis complements qualitative findings from a companion study showing that lack of support for women who marry young exacerbates disadvantage from poverty and gender norms.

Young Lives

An International Study of Childhood Poverty

About Young Lives

Young Lives is an international study of childhood poverty, involving 12,000 children in four countries over 15 years. It is led by a team in the Department of International Development at the University of Oxford in association with research and policy partners in the four study countries: Ethiopia, India, Peru and Vietnam.

Through researching different aspects of children's lives, we seek to improve policies and programmes for children.

Young Lives Partners

Young Lives is coordinated by a small team based at the University of Oxford, led by Professor Jo Boyden.

- *Ethiopian Development Research Institute, Ethiopia*
- *Pankhurst Development Research and Consulting plc, Ethiopia*
- *Centre for Economic and Social Studies, Hyderabad, India*
- *Save the Children India*
- *Sri Padmavathi Mahila Visvavidyalayam (Women's University), Andhra Pradesh, India*
- *Grupo de Análisis para el Desarollo (GRADE), Peru*
- *Instituto de Investigación Nutricional, Peru*
- *Centre for Analysis and Forecasting, Vietnamese Academy of Social Sciences, Vietnam*
- *General Statistics Office, Vietnam*
- *Oxford Department of International Development, University of Oxford, UK*

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