

Child Grooms: Prevalence and Correlates of Early Marriage among Men

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Abstract

Early marriage among girls is frequently problematized for the negative effects it has on young women's health and life options. However, it is unknown to what extent young men also experience early marriage and whether men who marry as boys experience the same types of disadvantage as do women who marry as girls. This study uses men's Demographic and Health Survey data from 52 countries to document the prevalence of marriage among men at ages younger than 18 and its patterns across selected socio-demographic characteristics. For 9 countries with high prevalence of early marriage among men, we estimate multivariate regression models with age at marriage as a covariate for four outcomes: current use of contraception, number of children ever born, employment status, and educational attainment.

Bivariate results suggest that men who married before age 18 are more likely to be poorer, live in rural areas, and have lower levels of education. There is, however, some indication that rates of early marriage among men may be increasing, a pattern that contrasts with the broader decreases in rates among women. Multivariate analyses indicate that, while early marriage among is consistently found to influence men's educational attainment and number of children, no clear relationship is found with use of contraception and employment status.

Background

Early marriage among girls is frequently problematized for the negative effects it has on young women's health and life options. Adolescent pregnancy, closely associated with adolescent marriage, poses risks for a range of negative maternal and peri-natal health outcomes, with the risk heightened for the youngest girls (de Vienne et al. 2009; Haldre et al. 2007; Goonewardene and Waduge 2005; Cooper et al. 1995). In particular, girls younger than 19 have a 50% increased risk of stillbirths and neonatal deaths, as well as preterm birth, low birth weight, and asphyxia. Women who marry young are not only likely to have their first birth at a young age, but are less likely to use contraception and tend to have shorter birth intervals (also a health risk) (Tsui 1982) and a greater number of births over their lifetime. This pattern is sufficiently strong that delays in the age at marriage for women can result in reductions in aggregate fertility levels (Timaeus and Moultrie 2008; Akam, 2007; Fall and Ngom, 2001; Hirschman 1985; Hirschman and Rindfuss 1980).

Beyond health risks, early marriage for girls is associated with various social disadvantages. Studies indicate that young, recently married girls are less empowered than either unmarried adolescents in their natal home (Gage 2000) or women who marry at older ages, and that this relative disempowerment persists throughout their reproductive lives (MacQuarrie 2009). Women who marry as girls are likely to have lower levels of education, as girls frequently drop out of schooling upon marriage. Women who marry as girls also have limited employment opportunities and are more likely to live in poorer households.

While the causes and consequences of early marriage among girls have received widespread interest, scant attention has been paid to understanding the phenomenon of early marriage among boys. As a result, very little is known about the prevalence of early marriage among boys, in which countries it occurs, which (if any) population sub-groups it is concentrated in, or what the causes or consequences may be for boys. For example, there is very little research that explores whether men who marry as boys

experience the same types of health and social disadvantages as do women who marry as girls or what the long term implications of early marriage are for men, as opposed to women. This study aims to begin to fill some of these knowledge gaps by analyzing data on men in Demographic and Health Surveys (DHS).

Data and Methods

Data

DHS surveys are nationally representative, population-based surveys of households and, primarily, women of reproductive age. While the DHS Program has conducted more than 300 surveys with women in over 90 countries since its inception in 1984, 207 of these surveys have also interviewed men. This study uses data from the most recent men's survey provided that survey was conducted since 2000 and the data were publicly available by December 2014. These criteria yielded 52 surveys available for analysis. In most surveys, the sampling strategy for men is the same as that for women and all men of eligible age (usually 15-59) are interviewed in each selected household. However, in some surveys, the men's questionnaire is administered in every second or third household, yielding sample sizes that are smaller than for the women's survey.

The DHS uses multistage cluster sampling techniques to obtain samples that are representative at the national level and at one or more sub-national levels. In the first sampling stage each country is stratified into regions from which census-based enumeration areas are selected, with a probability proportional to size. A mapping and household listing operation is then conducted in selected enumeration areas. In the second sampling stage, households are randomly selected from the household list within each selected enumeration area. Urban and less populous areas are typically oversampled. All analyses are weighted to account for sampling probability and survey non-response. Additionally, we use the survey (svy) commands available within Stata 13 to account for the complex (clustered) sampling design and estimate robust standard errors.

Analytical Strategy

The analysis in this study is organized into two broad sections. In the first, this study uses men's DHS data from all 52 countries to document the prevalence of marriage among men at ages younger than 18. Marriage is defined as married or living together as if married and so includes all marriages whether they have been legalized or not, formal or informal. The analytic sample is restricted to men age 20-59 as not all those in the youngest age group, 15-19, have not had the opportunity to marry or remain unmarried by age 18 (i.e., they are censored). The prevalence of early marriage among men is compared to women's prevalence (proportion marrying by age 18 among women age 20-49) to determine if early marriage for men co-occurs in the same countries as early marriage for women.

For nine countries with prevalence of early marriage among men exceeding 10%, the distributional patterns of early marriage across selected socio-demographic characteristics is assessed. First, this allows us to determine if men marrying early—however rare or commonplace—is a generalized phenomenon or if it is more concentrated in selected subgroups. Secondly, it allows us to identify which factors may be salient to early marriage for men. The distribution of early marriage is examined according to: urban/rural residence, household wealth quintile (Rutstein 2008; Rutstein and Johnson 2004), education, religion, ethnicity, and age. Around our point estimates, we calculate 95% confidence intervals. Significant differences are assessed through a combination of a χ^2 test and determining if the lower and upper bounds of the confidence interval for one category overlaps with those of other categories.

Following this bivariate analysis, and for these same nine countries, we estimate multivariate regression models on selected outcomes, using men's age at marriage as the explanatory variable of interest and other control variables. We select two outcomes each in two domains for which research has shown early marriage for *women* to have negative consequences—(1) reproduction/fertility-related and (2) life options/well-being—to explore whether men who marry early also experience similar disadvantages. The

modeled outcomes are: current use of contraception, number of children ever born, employment status, and educational attainment.

Measures

Married before age 18 is a dichotomous variable coded as ‘1’ for men who were less than 18 years of age when they first married or lived with a woman as if married and ‘0’ for men who married or lived with someone as if married at age 18 or older.

Current use of contraception is captured through the question, “The last time you had sex did you or your partner use any method to avoid or prevent a pregnancy?” Men who respond yes are coded as ‘1’ on this variable regardless of the method used while men who respond no or do not know are coded as ‘0’. As a dichotomous variable, current use of contraception is modeled as a logistic regression and is regressed on men’s age at marriage and current age, wealth, education, residence, occupation, and employment status.

Total number of children ever born—Men are asked about *any* children they have had during their life that are biologically theirs, even if they are not legally theirs or do not have their last name. This variable is the sum of all children a man has fathered, regardless of whether the child had since died, is living or not living with the man, or was born to the same or different mother. Number of children ever born is modeled as a linear regression with the same set of regressors as in the model for current use of contraception. This variable is unavailable for the Dominican Republic so no model is estimated for this outcome there.

Employment status is coded as ‘1’ for men who report that they are currently working and ‘0’ if they are not currently working. This variable is modeled in a logistic regression regressed on men’s age at marriage and controlling for current age, wealth, education, and residence. The DHS survey in the

Dominican Republic did not collect data on employment status so no model is estimated for this outcome in this country.

Educational attainment is a standard DHS variable with “no education,” “primary education,” “secondary education,” and “higher education” as response codes for the level of education completed. The DHS survey in the Dominican Republic did not collect data on employment status. All four categories of education are retained for the bivariate analysis examining the distribution of men’s early marriage across categories of education completed. In the multivariate analysis, educational attainment outcome is expressed as a dichotomous variable comparing men completing secondary or higher education with those with no or primary education and uses the full set of regressors. When used as a regressor in regression models for the other outcomes, “no education” is the referent category.

Current age is measured in five-year age groups and captures completed age, in years, at the time of the survey. The 20-24 age group is the reference category. While DHS surveys typically interview men between the ages of 15 and 59, India’s DHS (also known as the National Family and Health Survey (NFHS-2)) interviewed men age 15-54 and Nepal’s DHS interviewed men age 15-49 and so lack the oldest age groups.

Household wealth quintiles are calculated by the DHS Program based on factor analysis of material asset items (Filmer and Pritchett 2001; Rutstein 2008; Rutstein and Johnson 2004). This measure captures relative wealth within a country at the time of the survey for the household in which the man resides. The reference category is the poorest wealth quintile.

Occupation is a categorical variable with the following as categories: none (reference); professional, technical, or manual; agriculture; services or sales; and manual labor. The Dominican Republic survey did not collect data on current employment status or on occupation, so these variables are omitted from the models for this country. While occupation is not collinear with employment status, this variable is omitted from the list of regressors in the model for employment status as an outcome variable.

Place of residence distinguishes men living in rural areas from those living in urban areas. Urban residence is the reference category.

Ethnicity and *religion* are both country-specific variables. They are categorical variables with customized response codes that are meaningful for each country. Religion is an available variable in all nine surveys, with the number of response options ranging from two (Comoros) to ten (India). Five countries—Ethiopia, Honduras, India, Nepal, and Sierra Leone—collect data on ethnicity, with as many as 52 response options in Ethiopia and as few as four capturing caste in India. As these are country-specific, we examine the distribution of men’s early marriage according to religion and ethnicity in bivariate analyses, but we do not include these variables in our regression models.

Results

Prevalence of Early Marriage among Men

Early marriage¹ among men is a relatively rare phenomenon. As shown in Table 1, the large majority of all married men age 20-59 married at an age older than 18. The prevalence of early marriage ranges from less than 1% in Azerbaijan to 21% in Nepal. On average², 7.4% of men age 20-59 marry before the age of 18. Early marriage is very rare (<1%) in the Eastern European and Central Asian countries of Albania, Armenia, and Azerbaijan. In all but nine countries, the proportion of men marrying before age 18 is less than 10%, a level used (somewhat arbitrarily) to designate higher prevalence of early marriage among men.

¹ Early marriage is defined as marriage before the age of 18.

² Each country is weighted equally, without regard to population size.

Table 1a. Proportion of ever-married men age 20-59 married before age 18, most recent DHS survey

The 9 countries with high early marriage among men (>10%) highlighted in blue

| | Percent married before age 18 | weighted N |
|-----------------------------|-------------------------------|------------|
| Albania 2008-09 | 1.1 | 1,716 |
| Armenia 2010 | 0.8 | 875 |
| Azerbaijan 2006 | 0.7 | 1,705 |
| Bangladesh 2011 | 7.7 | 3,976 |
| Benin 2011-12 | 8.2 | 3,341 |
| Bolivia 2008 | 9.0 | 3,929 |
| Burkina Faso 2010 | 3.3 | 4,785 |
| Burundi 2010 | 4.9 | 2,612 |
| Cambodia 2010 | 9.3 | 5,019 |
| Cameroon 2011 | 8.4 | 3,920 |
| Chad 2004 | 15.4 | 1,230 |
| Comoros 2012 | 14.2 | 1,267 |
| Congo (Brazzaville) 2011-12 | 7.3 | 3,059 |
| Congo (Dem Rep) 2007 | 9.4 | 2,850 |
| Cote d'Ivoire 2011-12 | 7.8 | 2,943 |
| Dominican Republic 2013 | 11.3 | 6,587 |
| Ethiopia 2011 | 15.6 | 8,433 |
| Gabon 2012 | 8.7 | 3,293 |
| Ghana 2008 | 6.7 | 2,617 |
| Guinea 2012 | 5.8 | 2,131 |
| Guyana 2009 | 8.6 | 2,130 |
| Haiti 2012 | 4.9 | 4,845 |
| Honduras 2011-12 | 16.2 | 4,730 |
| India 2005-06 | 13.6 | 48,614 |
| Indonesia 2012 | 5.5 | 9,278 |
| Kenya 2008-09 | 5.4 | 1,937 |
| Kyrgyz Republic 2012 | 1.5 | 1,536 |
| Lesotho 2009-10 | 3.8 | 1,595 |
| Liberia 2013 | 9.1 | 2,356 |
| Madagascar 2008-09 | 12.7 | 6,021 |
| Malawi 2010 | 9.5 | 4,439 |
| Maldives 2009 | 9.3 | 1,724 |
| Mali 2012-13 | 5.0 | 2,989 |
| Moldova 2005 | 2.2 | 1,771 |

Table 1b. Proportion of ever-married women age 20-49 married before age 18, most recent DHS with matching men's survey

The 15 countries with high early marriage among women (>50%) highlighted in red

| | Percent married before age 18 | weighted N |
|-----------------------------|-------------------------------|------------|
| Albania 2008-09 | 11.3 | 5,115 |
| Armenia 2010 | 18.3 | 3,939 |
| Azerbaijan 2006 | 13.4 | 5,669 |
| Bangladesh 2011 | 77.3 | 15,779 |
| Benin 2011-12 | 38.9 | 12,187 |
| Bolivia 2008 | 28.7 | 11,050 |
| Burkina Faso 2010 | 55.4 | 13,023 |
| Burundi 2010 | 27.0 | 6,037 |
| Cambodia 2010 | 28.4 | 12,565 |
| Cameroon 2011 | 50.4 | 10,184 |
| Chad 2004 | 74.5 | 4,597 |
| Comoros 2012 | 37.1 | 3,351 |
| Congo (Brazzaville) 2011-12 | 39.7 | 7,488 |
| Congo (Dem Rep) 2007 | 47.7 | 7,065 |
| Cote d'Ivoire 2011-12 | 43.5 | 6,584 |
| Dominican Republic 2013 | 43.8 | 6,618 |
| Ethiopia 2011 | 65.0 | 11,123 |
| Gabon 2012 | 32.1 | 5,107 |
| Ghana 2008 | 37.9 | 3,227 |
| Guinea 2012 | 64.3 | 6,399 |
| Guyana 2009 | 31.3 | 3,267 |
| Haiti 2012 | 25.5 | 8,567 |
| Honduras 2011-12 | 43.4 | 14,885 |
| India 2005-06 | 58.3 | 92,081 |
| Indonesia 2012 | 30.6 | 34,763 |
| Kenya 2008-09 | 36.5 | 5,584 |
| Kyrgyz Republic 2012 | 13.9 | 5,799 |
| Lesotho 2009-10 | 32.1 | 4,698 |
| Liberia 2013 | 48.3 | 6,044 |
| Madagascar 2008-09 | 44.8 | 12,647 |
| Malawi 2010 | 54.1 | 17,170 |
| Maldives 2009 | 34.5 | 7,012 |
| Mali 2012-13 | 54.5 | 8,176 |
| Moldova 2005 | 16.2 | 5,428 |

Table 1a. Proportion of ever-married men age 20-59 married before age 18, most recent DHS survey

The 9 countries with high early marriage among men (>10%) highlighted in blue

| | Percent married before age 18 | weighted N |
|-------------------------------|-------------------------------|----------------|
| Mozambique 2011 | 8.1 | 2,745 |
| Namibia 2013 | 4.2 | 1,680 |
| Nepal 2011 | 20.8 | 2,619 |
| Niger 2012 | 6.0 | 2,785 |
| Nigeria 2013 | 5.9 | 8,935 |
| Pakistan 2012-13 | 9.1 | 3,098 |
| Philippines 2003 | 6.5 | 2,830 |
| Rwanda 2011 | 4.2 | 3,446 |
| São Tomé and Príncipe 2008-09 | 7.0 | 1,348 |
| Senegal 2010-11 | 3.7 | 2,167 |
| Sierra Leone 2008 | 10.3 | 4,391 |
| Swaziland 2006-07 | 4.0 | 1,419 |
| Tanzania 2010 | 4.9 | 1,452 |
| Timor-Leste 2009-10 | 6.2 | 2,207 |
| Uganda 2011 | 9.2 | 1,444 |
| Ukraine 2007 | 2.9 | 2,120 |
| Zambia 2007 | 6.9 | 3,926 |
| Zimbabwe 2010-11 | 4.7 | 4,233 |
| Total | 7.4 | 213,098 |

Table 1b. Proportion of ever-married women age 20-49 married before age 18, most recent DHS with matching men's survey

The 15 countries with high early marriage among women (>50%) highlighted in red

| | Percent married before age 18 | weighted N |
|-------------------------------|-------------------------------|----------------|
| Mozambique 2011 | 47.0 | 9,976 |
| Namibia 2006-07 | 15.8 | 3,606 |
| Nepal 2011 | 56.3 | 9,168 |
| Niger 2012 | 78.7 | 9,125 |
| Nigeria 2013 | 54.4 | 27,310 |
| Pakistan 2012-13 | 39.1 | 12,953 |
| Philippines 2003 | 20.4 | 8,997 |
| Rwanda 2011 | 19.1 | 8,280 |
| São Tomé and Príncipe 2008-09 | 40.2 | 1,884 |
| Senegal 2010-11 | 46.0 | 10,238 |
| Sierra Leone 2008 | 54.8 | 11,164 |
| Swaziland 2006-07 | 22.4 | 2,407 |
| Tanzania 2010 | 43.8 | 7,172 |
| Timor-Leste 2009-10 | 28.0 | 8,204 |
| Uganda 2011 | 52.9 | 6,086 |
| Ukraine 2007 | 14.7 | 5,246 |
| Zambia 2007 | 51.7 | 4,984 |
| Zimbabwe 2010-11 | 34.3 | 6,469 |
| Total | 40.0 | 536,497 |

Note: Men age 20-54 in India 2005-06 and age 20-49 in Nepal 2011.

The nine countries with higher prevalence of early marriage among men are: Nepal (21%), Honduras (16%), Ethiopia (16%), Chad (15%), Comoros (14%), India (14%), Madagascar (13%), the Dominican Republic (11%), and Sierra Leone (10%). As such, early marriage among men can be found in most regions of the developing world, without being concentrated in any one geographical region.

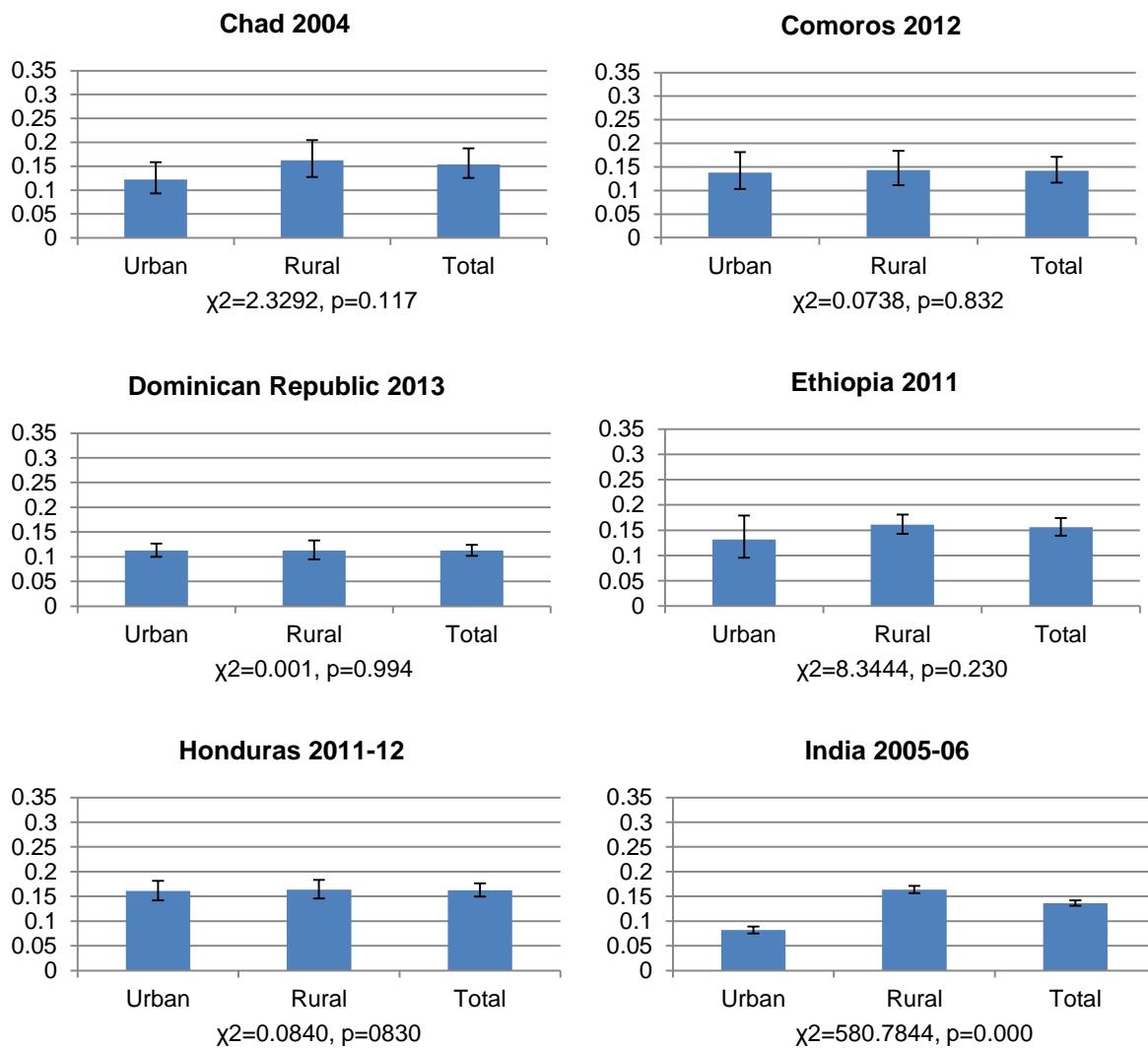
To determine whether early marriage among men occurs in the same countries in which early marriage among women is common, the second panel of Table 1 presents the prevalence of early marriage among women age 20-49, with data coming from the corresponding women's DHS survey. By this metric, the proportion of women marrying before age 18 ranges from 11% in Albania to 79% in Niger, with an average of 40%. Given that more than 10% of women age 20-49 marry by age 18 in all countries, a higher threshold is needed to distinguish "higher prevalence" countries, here set (again, somewhat arbitrarily) as 50%. Fifteen countries have proportions of early marriage among women in excess of 50%. This includes five of the nine countries with higher prevalence of early marriage among men: Chad, Ethiopia, India, Nepal, and Sierra Leone. However, the other four countries with higher prevalence of early marriage among men do not have a higher prevalence of early marriage among women, while 10 countries have a higher prevalence among women but not among men. Thus, while there is some overlap, early marriage among men and among women do not necessarily geographically coincide.

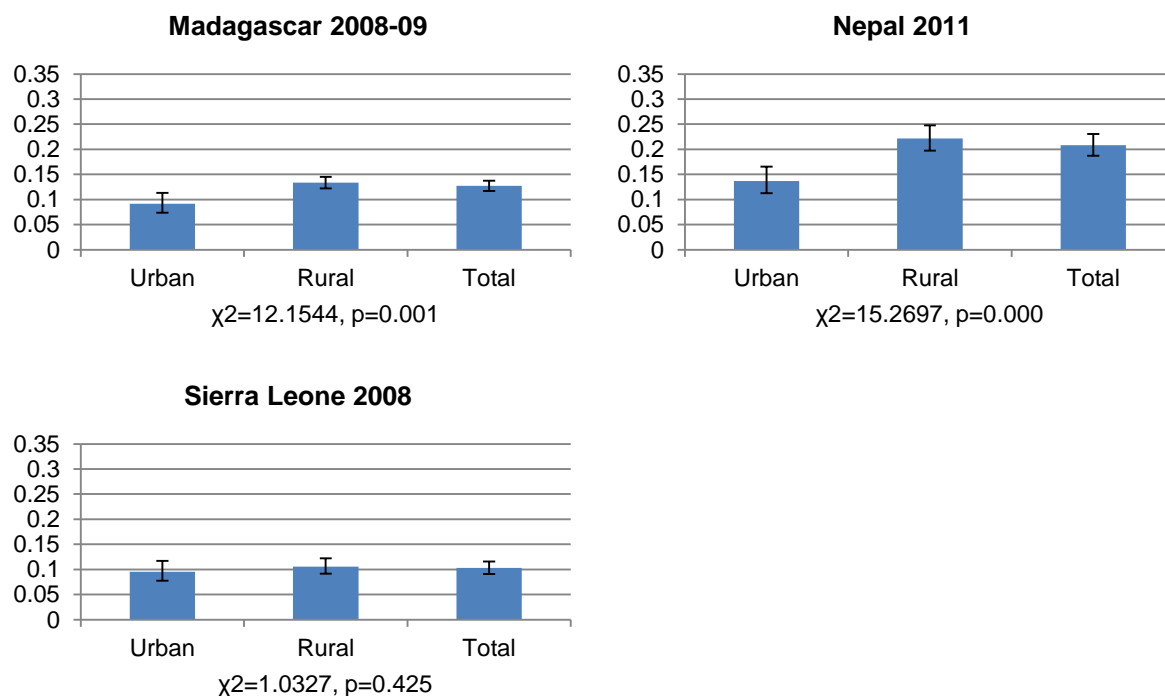
Distribution of Early Marriage among Men (bivariate analysis)

Residence

The prevalence of early marriage among men by urban or rural place of residence is presented in Figure 1. Differences in men's early marriage based on residence are significant in three of nine study countries: India, Madagascar, and Nepal. In all countries, the proportion of men marrying by age 18 is higher in rural areas than in urban areas. This is true of countries even where these differences are not significant. In rural India, 16% of men age 20-59 married by age 18 as compared to 8% in urban India ($p=0.000$) and in Nepal 22% of men age 20-59 in rural areas have married by age 18 as compared to 14% in urban areas ($p=0.000$). The differences, although significant, are not quite as large in Madagascar: 13% in rural areas compared to 9% in urban areas ($p=0.001$).

Figure 1. Prevalence of marriage before age 18 among ever-married men age 20-59 by residence

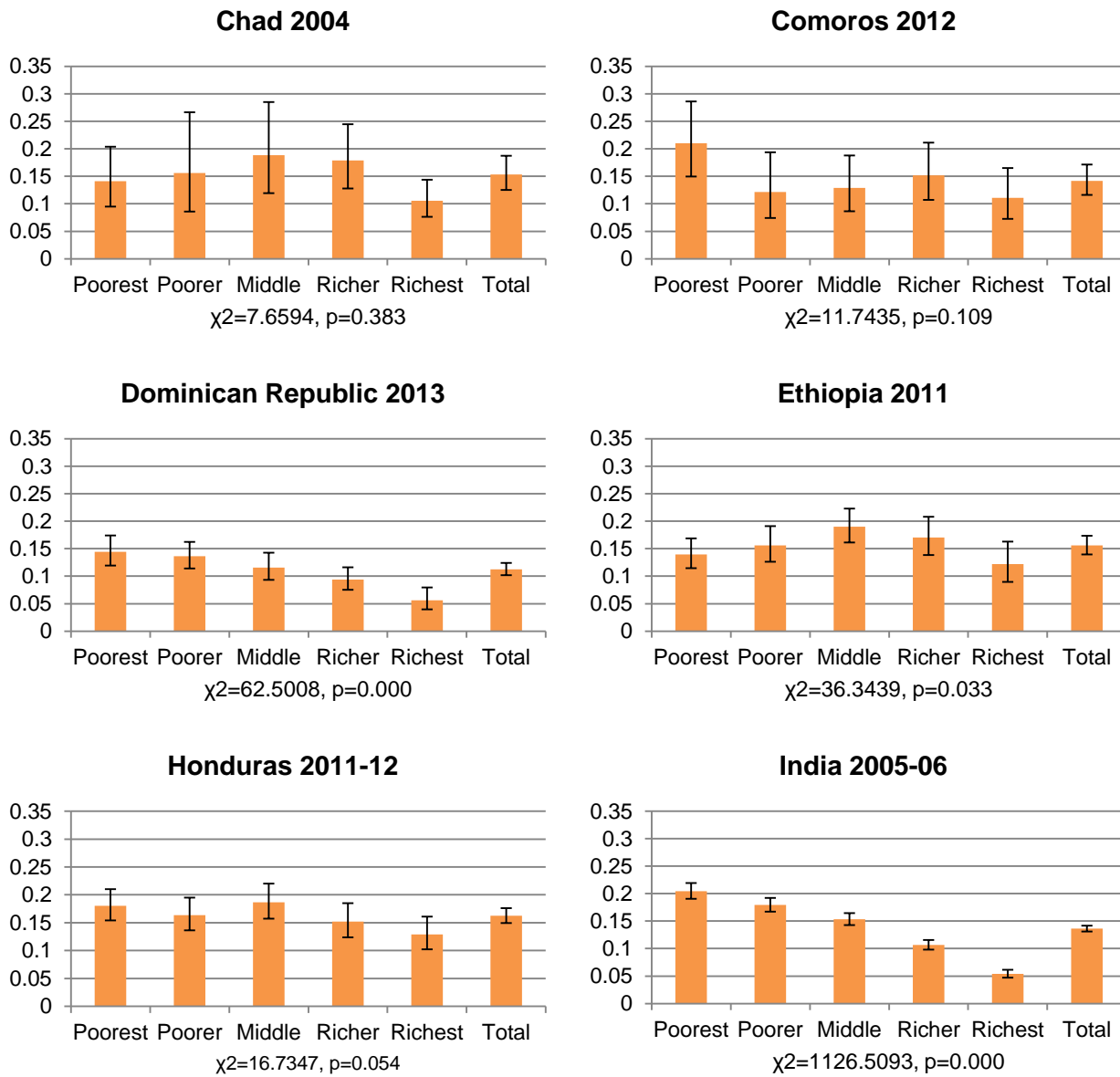




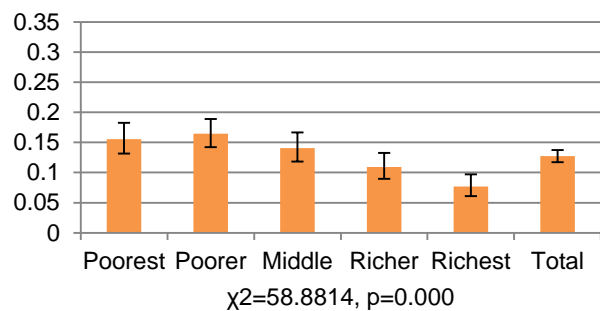
Household wealth quintile

Figure 2 depicts the prevalence of early marriage among men by household wealth quintile. The prevalence of men’s early marriage varies significantly with wealth in five of the nine countries studied—the Dominican Republic, Ethiopia, India, Madagascar, and Nepal. Most frequently, detectable differences in the magnitude of early marriage are visible between the richest and poorest wealth quintiles. The general pattern is a decline in the prevalence of early marriage as wealth quintile increases, most clearly illustrated by the Dominican Republic and India. In Madagascar and Nepal, early marriage is most prevalent among men in the poorer, not poorest, wealth quintile and decreases with increasing wealth. Ethiopia exhibits a different pattern—an inverted U—with 19% of men in the middle wealth quintile marrying before age 18 and 14% of men in the poorest and 12% of men in the richest wealth quintiles marrying early ($p<0.050$).

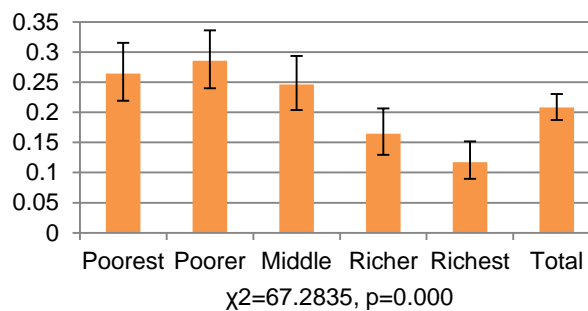
Figure 2. Prevalence of marriage before age 18 among ever-married men age 20-59 by household wealth quintile



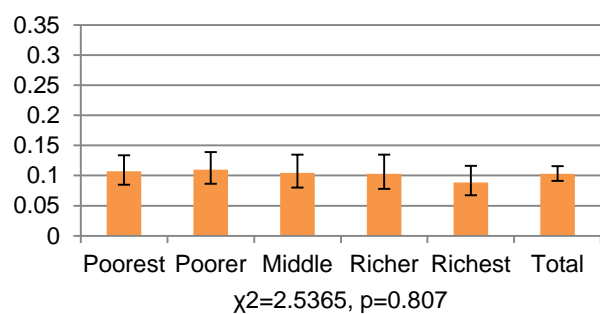
Madagascar 2008-09



Nepal 2011



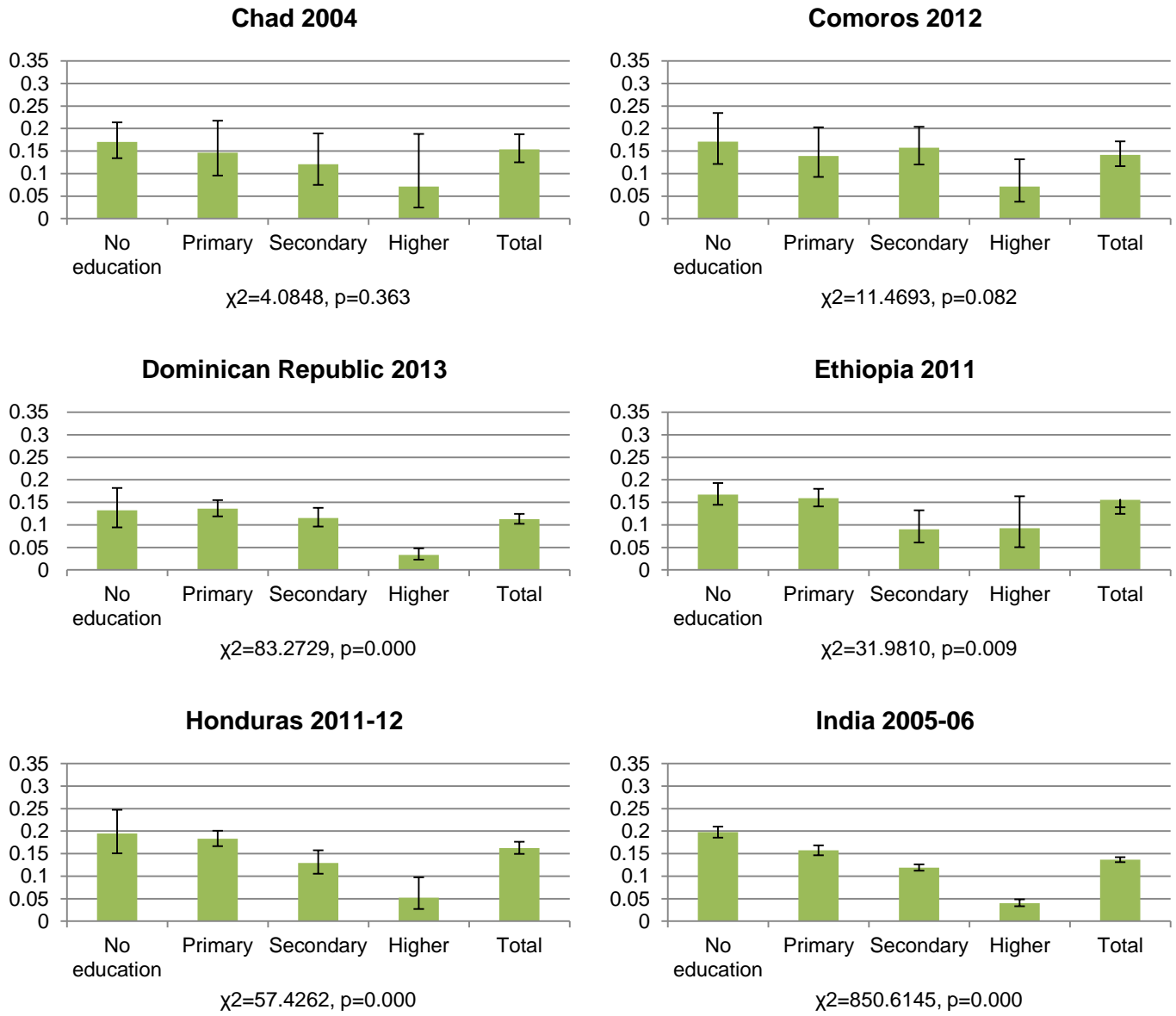
Sierra Leone 2008

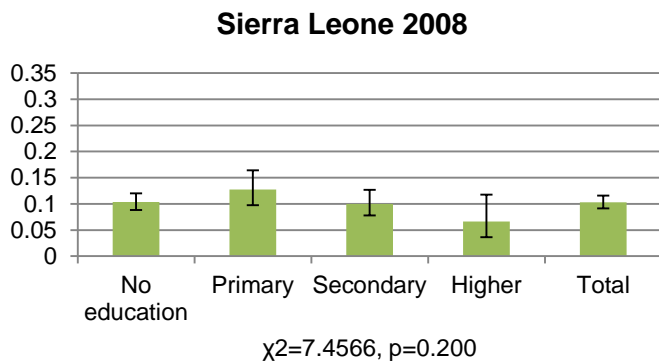
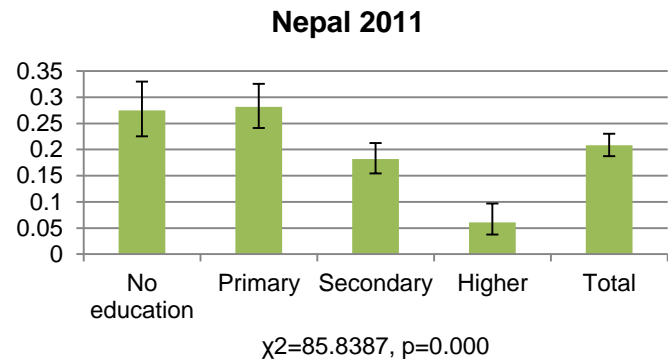
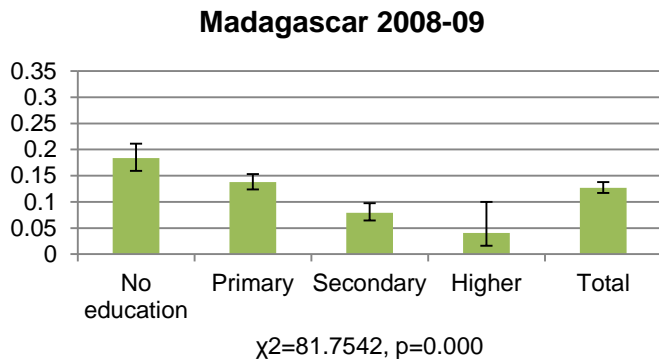


Education

Differences by educational attainment in the proportion of men marrying before age 18 are evident in six countries, as seen in Figure 3. These countries are: the Dominican Republic, Ethiopia, Honduras, India, Madagascar, and Nepal. In all countries (even where differences are not significant), the prevalence of early marriage declines with increasing levels of education.

Figure 3. Prevalence of marriage before age 18 among ever-married men age 20-59 by education





The threshold at which significant differences appear is generally between men with no education or primary education only versus men with secondary or higher education. In the Dominican Republic, however, significant differences are detectable between men with higher than secondary education and those with secondary or less education ($p=0.000$). In India, there is a steady decline in the prevalence of early marriage as education increases, with significant differences apparent between each category of educational attainment ($p=0.000$). The prevalence of early marriage in India declines from 20% of those with no education to only 4% of those with higher education. This pattern also describes the marriage situation in Madagascar, as marriage declines from 18% of men with no education to 8% of those completing secondary education ($p=0.000$). However, the wide confidence intervals suggest that the prevalence of early marriage may not differ significantly between men with higher education (4%) and those with secondary education (8%). This wide confidence interval may reflect the low proportion of men completing higher education in the country.

Age cohort

As with the other socio-economic characteristics reported on here, current age can be interpreted as another factor in the distributional pattern of early marriage among men. However, analysis by age cohort presents a second possible interpretation. Examining men's early marriage patterns by age cohort can provide evidence of a period shock in marriage patterns or of secular trends over time. The prevalence of men's marriage before age 18 by five-year age group is presented in Figure 4.

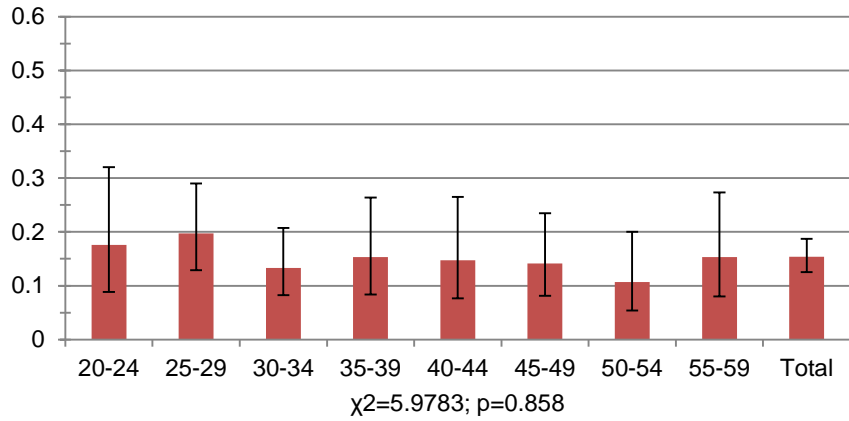
Men's early marriage varies significantly by age cohort in seven of the nine countries studied here³. Only in Chad and Nepal are differences by age not statistically significant. In all countries in which statistically significant differences are found, the prevalence of early marriage is higher among the youngest cohorts and lower among older cohorts of men. This finding would imply, perhaps countering expectations, that the prevalence of early marriage among men in these countries has increased rather than decreased over time.

Several countries show a pattern where the proportion of men marrying before age 18 steadily declines as one moves from younger to older cohorts. The differences are perhaps starkest in the Comoros, where 40% of men age 20-24 married by age 18 compared to 5% of men age 55-59. In contrast, while the proportion of men married by age 18 decreases steadily over each age cohort in the Dominican Republic, the differences between each age group are much smaller. Nonetheless, 20% of men age 20-24 married by age 18 compared to 6% among those age 55-59.

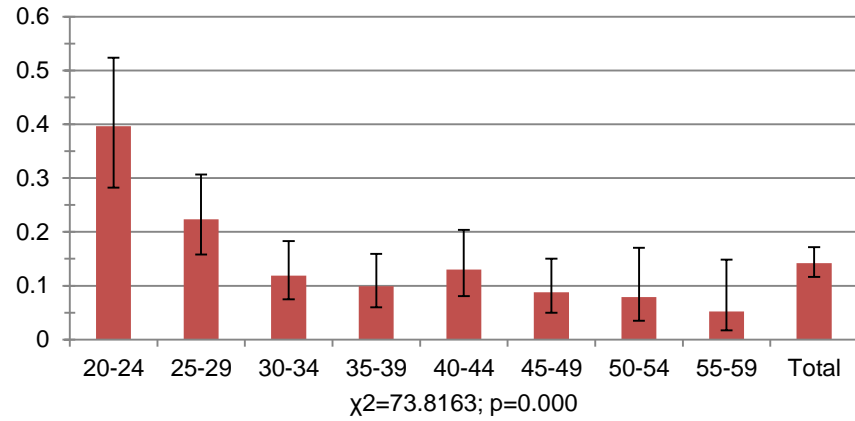
³ The prevalence of marriage before age 18 was also examined by 10-year age group (data not shown), resulting in the same findings.

Figure 4. Prevalence of marriage before age 18 among ever-married men by five year age group

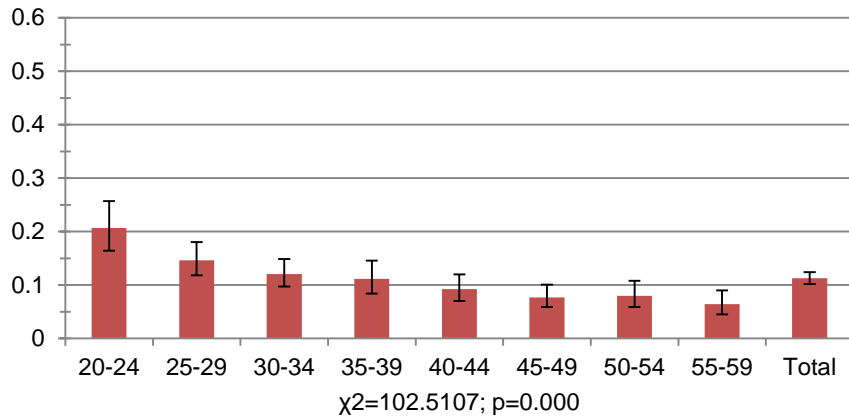
Chad 2004



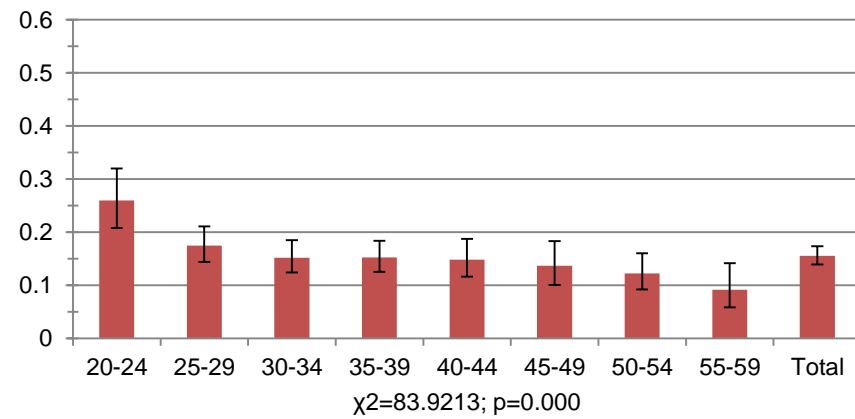
Comoros 2012



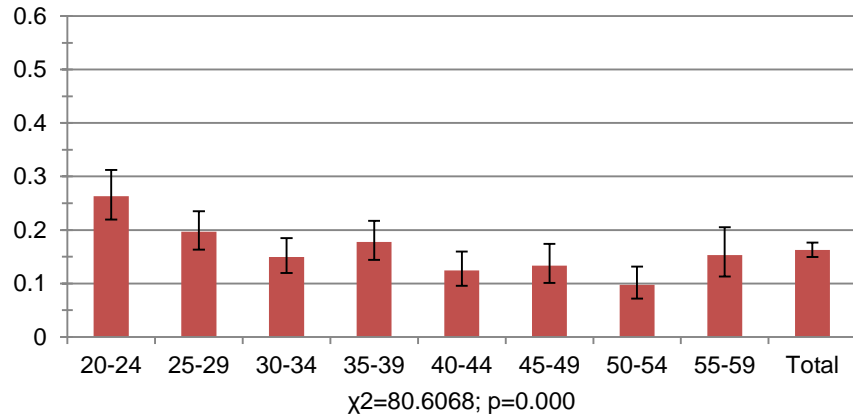
Dominican Republic 2013



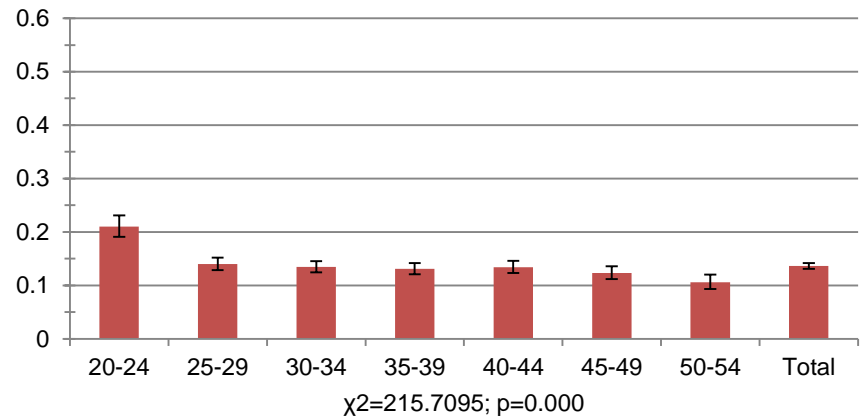
Ethiopia 2011



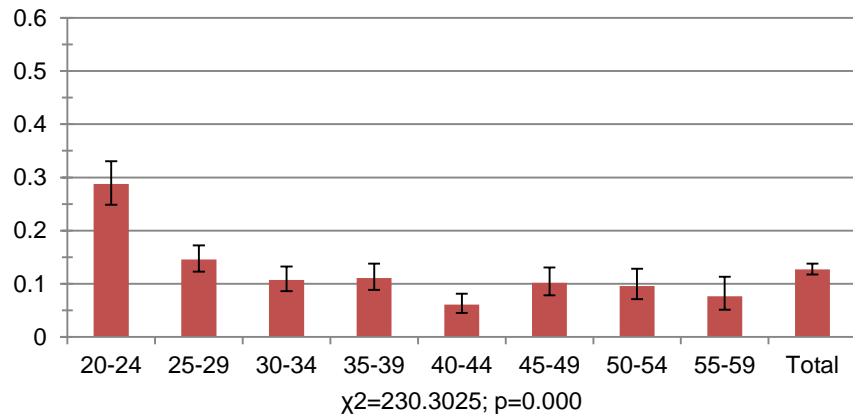
Honduras 2011-12



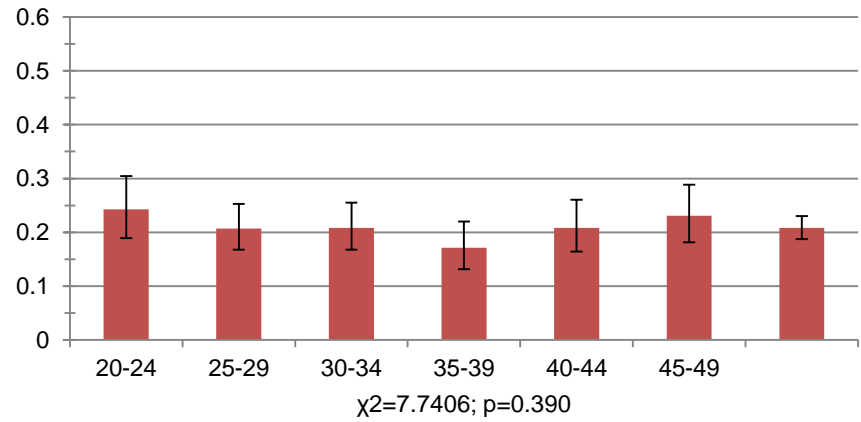
India 2005-06



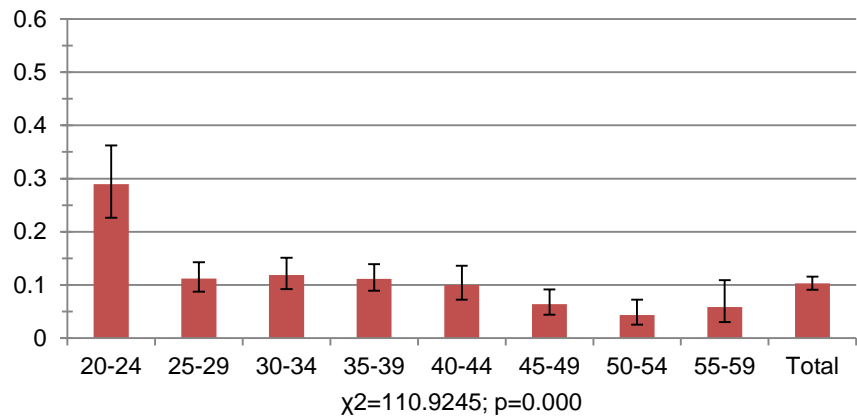
Madagascar 2008-09



Nepal 2011



Sierra Leone 2008



The largest difference frequently is between the youngest age cohort (20-24 year old men) and those five or ten years older with much smaller difference among older age cohorts, as in the Comoros, Madagascar, and Sierra Leone. The prevalence of men’s early marriage falls from 40% among men age 20-24 to 22% among men age 25-29 and 12% among men age 30-34 in the Comoros; from 29% among men age 20-24 to 15% among men age 25-29 in Madagascar; and from 29% to 11% in Sierra Leone. In India and Ethiopia, the difference in prevalence among age groups for men age 30-49 are barely distinguishable, though a smaller proportion of older men and a larger proportion of younger men married early in these countries.

The pattern of more early marriage among men in younger age cohorts and less early marriage among men in older age cohorts is not unique to countries in which the prevalence of men’s early marriage exceeds 10%. Table 2 compares the prevalence of early marriage among 20-29 year old men to the full sample of men age 20-59 in all 52 surveys. In all but three countries (Armenia, Indonesia, and the Maldives), the proportion of men married by age 18 is higher among men age 20-29 than among the full sample. Among this age range, 27 countries—more than half of those studied—have a prevalence of early marriage among men exceeding 10%.

Table 2. Proportion of ever-married men age 20-59 and age 20-29 married before age 18, most recent DHS survey

| | Percent 20-59 married before age 18 | weighted N | Percent 20-29 married before age 18 | weighted N |
|-------------------|--|-----------------------|--|-----------------------|
| Albania 2008-09 | 1.1 | 1,716 | 2.9 | 146 |
| Armenia 2010 | 0.8 | 875 | 0.4 | 190 |
| Azerbaijan 2006 | 0.7 | 1,705 | 2.6 | 241 |
| Bangladesh 2011 | 7.7 | 3,976 | 9.6 | 870 |
| Benin 2011-12 | 8.2 | 3,341 | 12.8 | 568 |
| Bolivia 2008 | 9.0 | 3,929 | 15.6 | 780 |
| Burkina Faso 2010 | 3.3 | 4,785 | 5.8 | 1,018 |
| Burundi 2010 | 4.9 | 2,612 | 6.2 | 667 |
| Cambodia 2010 | 9.3 | 5,019 | 8.0 | 1,523 |
| Cameroon 2011 | 8.4 | 3,920 | 14.6 | 851 |

Table 2. Proportion of ever-married men age 20-59 and age 20-29 married before age 18, most recent DHS survey

| | Percent 20-59 married before age 18 | weighted N | Percent 20-29 married before age 18 | weighted N |
|--------------------------------|--|-----------------------|--|-----------------------|
| Chad 2004 | 15.4 | 1,230 | 19.1 | 331 |
| Comoros 2012 | 14.2 | 1,267 | 28.0 | 279 |
| Congo (Brazzaville) 2011-12 | 7.3 | 3,059 | 11.9 | 624 |
| Congo (Dem Rep) 2007 | 9.4 | 2,850 | 14.0 | 728 |
| Cote d'Ivoire 2011-12 | 7.8 | 2,943 | 15.7 | 552 |
| Dominican Republic 2013 | 11.3 | 6,587 | 17.1 | 1,581 |
| Ethiopia 2011 | 15.6 | 8,433 | 19.9 | 2,212 |
| Gabon 2012 | 8.7 | 3,293 | 18.5 | 580 |
| Ghana 2008 | 6.7 | 2,617 | 12.5 | 437 |
| Guinea 2012 | 5.8 | 2,131 | 11.9 | 336 |
| Guyana 2009 | 8.6 | 2,130 | 10.8 | 463 |
| Haiti 2012 | 4.9 | 4,845 | 9.9 | 920 |
| Honduras 2011-12 | 16.2 | 4,730 | 22.6 | 1,195 |
| India 2005-06 | 13.6 | 48,614 | 16.4 | 11,532 |
| Indonesia 2012 | 5.5 | 9,278 | 3.7 | 1,472 |
| Kenya 2008-09 | 5.4 | 1,937 | 6.7 | 433 |
| Kyrgyz Republic 2012 | 1.5 | 1,536 | 2.4 | 400 |
| Lesotho 2009-10 | 3.8 | 1,595 | 6.4 | 380 |
| Liberia 2013 | 9.1 | 2,356 | 13.6 | 627 |
| Madagascar 2008-09 | 12.7 | 6,021 | 20.6 | 1,753 |
| Malawi 2010 | 9.5 | 4,439 | 13.3 | 1,424 |
| Maldives 2009 | 9.3 | 1,724 | 2.6 | 370 |
| Mali 2012-13 | 5.0 | 2,989 | 7.4 | 451 |
| Moldova 2005 | 2.2 | 1,771 | 4.0 | 240 |
| Mozambique 2011 | 8.1 | 2,745 | 14.0 | 811 |
| Namibia 2013 | 4.2 | 1,680 | 10.3 | 265 |
| Nepal 2011 | 20.8 | 2,619 | 22.1 | 793 |
| Niger 2012 | 6.0 | 2,785 | 11.4 | 516 |
| Nigeria 2013 | 5.9 | 8,935 | 10.0 | 1,726 |
| Pakistan 2012-13 | 9.1 | 3,098 | 10.7 | 740 |
| Philippines 2003 | 6.5 | 2,830 | 8.7 | 628 |
| Rwanda 2011 | 4.2 | 3,446 | 4.6 | 905 |
| Sao Tome and Principe 2008-09 | 7.0 | 1,348 | 7.4 | 308 |
| Senegal 2010-11 | 3.7 | 2,167 | 8.9 | 302 |
| Sierra Leone 2008 | 10.3 | 4,391 | 15.6 | 817 |
| Swaziland 2006-07 | 4.0 | 1,419 | 4.7 | 335 |
| Tanzania 2010 | 4.9 | 1,452 | 5.7 | 376 |

Table 2. Proportion of ever-married men age 20-59 and age 20-29 married before age 18, most recent DHS survey

| | Percent 20-59 married before age 18 | weighted N | Percent 20-29 married before age 18 | weighted N |
|---------------------|--|-----------------------|--|-----------------------|
| Timor-Leste 2009-10 | 6.2 | 2,207 | 8.7 | 492 |
| Uganda 2011 | 9.2 | 1,444 | 11.5 | 406 |
| Ukraine 2007 | 2.9 | 2,120 | 6.3 | 411 |
| Zambia 2007 | 6.9 | 3,926 | 9.7 | 1,008 |
| Zimbabwe 2010-11 | 4.7 | 4,233 | 6.1 | 1,258 |
| Total | 7.4 | 213,098 | 10.8 | 48,271 |

Religion and Ethnicity

Bivariate examination of the prevalence of men’s early marriage by religion and by ethnicity indicates significant relationships in selected study countries. Unlike the other characteristics analyzed here, however, this analysis shows few discernible patterns across countries. Because religion and ethnicity are country specific variables and because they likely have culturally-specific meaning, expression, and salience to marriage, it is preferable to use religion and ethnicity in the context of within-country analysis rather than cross-country comparative analysis. Tables showing the distribution of men’s early marriage across religious and ethnic categories are provided in the appendix.

Men’s early marriage varies significantly by religion in the Dominican Republic, Honduras, India, and Madagascar. In the Dominican Republic, prevalence of early marriage is lower among Catholic and Evangelical men. In Honduras, it is lower among men reporting “other” religious affiliation. In India, men’s early marriage is most prevalent among Hindu men, followed by Muslim men. In Madagascar, it is also lower among Catholic men. Men’s early marriage varies significantly by ethnicity or caste in Ethiopia, Honduras, India, and Nepal. In India, prevalence is lower among general caste men and in Nepal, higher among dalits.

Early Marriage and Fertility-related Outcomes

Current use of contraception

To investigate whether men's early marriage influences current use of contraception, we estimate a multivariate logistic regression using marriage before age 18 and other controls as covariates,⁴ with results shown in Table 3. In only two surveys is marriage before age 18 associated with current use of contraception, net of other factors. In both cases, early marriage is associated with greater likelihood of currently using contraception. In India, the odds of currently using contraception are 19% greater men who married before the age of 18 ($p \leq 0.001$) and, in Nepal, the odds are 44% greater ($p \leq 0.01$).

⁴ This model controls for current age, household wealth quintile, educational attainment, employment status, occupation, and urban/rural residence. The Dominican Republic 2013 DHS did not collect data on employment status or occupation and so the model for this country omits these variables.

Table 3. Factors associated with current use of contraception among ever-married men age 20-59: Odds ratios from logistic regressions

| | Chad 2004 n=1,214 | Comoros 2012 n=1,171 | Dominican Republic 2013 n=6,587 | Ethiopia 2011 n=8,363 | Honduras 2011-12 n=4,728 | India 2005- 06 n=48,549 | Madagascar 2008-09 n=6,006 | Nepal 2011 n=2,614 | Sierra Leone 2008 n=4,330 |
|---|----------------------|----------------------------|--|-----------------------------|--------------------------------|-------------------------------|----------------------------------|-----------------------|------------------------------------|
| Married before age 18 | 0.74 | 1.21 | 1.13 | 1.09 | 1.15 | 1.19 *** | 1.17 | 1.44 ** | 0.73 |
| Current age (ref 20-24) | | | | | | | | | |
| 25-29 | 1.00 | 0.64 | 0.97 | 1.16 | 1.20 | 1.87 *** | 1.00 | 1.56 * | 0.89 |
| 30-34 | 1.43 | 0.4 * | 0.93 | 1.13 | 1.52 * | 3.67 *** | 1.49 ** | 3.14 *** | 0.87 |
| 35-39 | 1.35 | 0.44 * | 1.24 | 1.30 | 1.68 ** | 5.53 *** | 1.43 * | 4.08 *** | 0.74 |
| 40-44 | 1.01 | 0.27 *** | 1.06 | 1.03 | 1.9 *** | 5.53 *** | 1.14 | 4.62 *** | 0.79 |
| 45-49 | 0.98 | 0.28 ** | 1.23 | 0.91 | 1.15 | 5.23 *** | 1.23 | 4.27 *** | 0.55 * |
| 50-54 | 1.04 | 0.18 *** | 1.26 | 0.62 * | 0.92 | 4.41 *** | 0.53 ** | | 0.57 * |
| 55-59 | 0.6 | 0.19 * | 1.12 | 0.49 ** | 0.37 *** | | 0.28 *** | | 0.31 *** |
| Household wealth quintile (ref: poorest) | | | | | | | | | |
| poorer | 2.78 * | 0.81 | 1.11 | 1.47 ** | 1.45 ** | 1.39 *** | 1.20 | 1.30 | 1.20 |
| middle | 4.23 * | 0.41 *** | 1.09 | 1.73 *** | 1.48 ** | 1.59 *** | 1.59 ** | 1.41 | 1.07 |
| richer | 3.76 ** | 0.47 ** | 1.11 | 2.04 *** | 1.82 *** | 1.94 *** | 2.24 *** | 1.22 | 2.00 ** |
| richest | 3.74 * | 0.61 | 1.42 ** | 2.45 *** | 1.37 | 2.13 *** | 2.19 *** | 1.41 | 1.97 * |
| Education (ref: no education) | | | | | | | | | |
| primary | 3.99 *** | 1.30 | 1.56 ** | 1.13 | 1.17 | 1.23 *** | 2.18 *** | 0.96 | 1.81 ** |
| secondary | 6.66 *** | 2.13 ** | 1.75 *** | 1.49 * | 1.55 * | 1.19 *** | 3.3 *** | 1.71 *** | 2.13 *** |
| higher | 13.42 *** | 2.48 ** | 1.80 *** | 1.75 * | 1.74 * | 1.26 *** | 2.96 *** | 1.83 * | 2.15 ** |
| Employment status | | | | | | | | | |
| currently working | 0.61 | 0.92 | | 0.96 | 0.89 | 1.33 ** | 0.90 | 1.30 | 1.64 |
| Occupation (ref: none) | | | | | | | | | |
| prof, techn, manag, clerical | 1.60 | 1.19 | | 1.37 | 2.52 * | 0.93 | 0.89 | 1.12 | 0.96 |
| agriculture | 3.97 | 1.19 | | 1.33 | 1.32 | 1.06 | 1.06 | 1.03 | 0.44 |
| services & sales | 6.55 | 0.62 | | 1.40 | 1.5 | 1.05 | 1.26 | 0.96 | 0.63 |
| manual | 3.13 | 1.27 | | 1.86 | 1.92 | 0.99 | 0.78 | 1.09 | 0.67 |
| Residence (ref: urban) | | | | | | | | | |
| rural | 1.40 | 0.6 * | 1.32 ** | 0.55 | 1.21 | 1.07 | 0.91 | 0.87 | 1.21 |

*p<=0.05, **p<=0.01, ***p<=0.001

While one might be inclined to surmise that the positive association between men's early marriage and current use of contraception is restricted to South Asia, it should be noted that an earlier analysis using 2007 DHS data from the Dominican Republic also found a strong positive association (OR = 1.28, $p \leq 0.01$). This association is not evident in the 2013 data. Additionally, that five of the seven surveys with no statistical significance nonetheless have odds in the same direction is tentatively suggestive that the relationship between men's early marriage and current contraceptive use, wherever it is statistically detectable, is likely to be a positive one.

Factors that are more universally (and positively) associated with current use of contraception are household wealth and education. Current age is associated with current use of contraception in six of nine study countries. Employment status and occupation are seldom associated with contraceptive use in any of the surveys.

Number of children ever born

Data on the number of children is not available for the Dominican Republic, which is omitted for this analysis. The results of the linear regression models for the remaining eight countries—Chad, Comoros, Ethiopia, Honduras, India, Madagascar, Nepal, and Sierra Leone—are presented in Table 4.

Table 4. Factors associated with the number of children ever born among ever-married men age 20-59: Coefficients from linear regressions

| | Chad 2004 n=1,214 | Comoros 2012 n=1,171 | Ethiopia 2011 n=8,363 | Honduras 2011-12 n=4,728 | India 2005-06 n=48,549 | Madagascar 2008-09 n=6,006 | Nepal 2011 n=2,614 | Sierra Leone 2008 n=4,330 |
|--|-----------------------------|-----------------------------------|------------------------------------|---------------------------------------|----------------------------------|---|------------------------------|--|
| Married before age 18 | 4.60 *** | 5.23 *** | 3.56 *** | 2.45 *** | 2.64 *** | 3.47 *** | 2.66 *** | 3.03 *** |
| Current age (ref 20-24) | | | | | | | | |
| 25-29 | 3.79 *** | 1.98 | 3.35 *** | 2.09 *** | 2.73 *** | 2.98 *** | 2.16 *** | 2.42 *** |
| 30-34 | 17.02 *** | 7.10 *** | 14.31 *** | 4.14 *** | 6.70 *** | 10.12 *** | 4.58 *** | 8.06 *** |
| 35-39 | 90.14 *** | 16.71 *** | 50.35 *** | 9.43 *** | 12.29 *** | 28.51 *** | 11.19 *** | 34.02 *** |
| 40-44 | 744.04 *** | 52.37 *** | 227.82 *** | 20.75 *** | 19.83 *** | 69.60 *** | 20.09 *** | 107.01 *** |
| 45-49 | 3044.7 *** | 119.46 *** | 669.44 *** | 44.03 *** | 27.88 *** | 124.15 *** | 26.90 *** | 382.47 *** |
| 50-54 | 4024 *** | 256.89 *** | 1460.2 *** | 107.8 *** | 33.36 *** | 346.60 *** | | 792.29 *** |
| 55-59 | 7823 *** | 215.44 *** | 2418.9 *** | 229.02 *** | | 511.11 *** | | 1613.4 *** |
| Household wealth quintile (ref: poorest) | | | | | | | | |
| poorer | 2.35 | 0.23 *** | 0.70 ** | 0.61 *** | 0.82 *** | 0.62 *** | 0.62 *** | 1.20 |
| middle | 3.91 ** | 0.2 | 0.83 | 0.46 *** | 0.61 *** | 0.56 *** | 0.56 *** | 1.72 ** |
| richer | 3.97 ** | 0.12 *** | 0.87 | 0.36 *** | 0.50 *** | 0.48 *** | 0.41 *** | 1.72 ** |
| richest | 6.02 ** | 0.08 *** | 0.86 | 0.30 *** | 0.33 *** | 0.22 *** | 0.3 *** | 1.24 |
| Education (ref: no education) | | | | | | | | |
| primary | 0.78 | 0.26 *** | 1.17 | 0.72 | 0.79 *** | 1.22 | 0.74 * | 0.64 * |
| secondary | 0.64 | 0.26 *** | 0.80 | 0.72 | 0.67 | 0.96 | 0.58 *** | 0.61 ** |
| higher | 0.10 *** | 0.14 *** | 0.50 * | 0.40 *** | 0.48 *** | 0.54 ** | 0.4 *** | 0.39 ** |
| Employment status | | | | | | | | |
| currently working | 1.08 | 1.34 | 1.10 | 1.18 | 0.87 | 0.74 | 1.05 | 0.53 |
| Occupation (ref: none) | | | | | | | | |
| prof, techn, manag, clerical | 2.60 | 1.23 | 0.50 | 0.90 | 1.12 | 1.34 | 1.39 | 3.21 |
| agriculture | 3.15 | 1.12 | 1.00 | 0.93 | 1.28 | 1.68 | 1.52 | 5.45 ** |
| services & sales | 6.19 | 1.80 | 0.63 | 0.76 | 1.36 * | 1.24 | 1.64 * | 2.33 |
| manual | 1.27 | 1.33 | 0.40 * | 0.99 | 1.37 * | 1.39 | 1.55 | 3.21 |
| Residence (ref: urban) | | | | | | | | |
| rural | 2.24 | 0.97 | 2.87 *** | 1.14 | 1.08 * | 1.13 | 1.07 | 2.24 *** |

*p<=0.05, **p<=0.01, ***p<=0.001

Men's early marriage is positively and strongly associated with the total number of children ever born in all eight countries. The effect is smallest in Honduras, India, and Nepal where the number of children born to men who marry early is 2.45 to 2.66 greater than among men who marry after age 18 ($p \leq 0.001$), controlling for other factors. In Chad and the Comoros, men who marry before age 18 have 4.6 and 5.23 more children, respectively, than men who marry at or above age 18 ($p \leq 0.001$).

Among other factors, men's age is consistently and positively associated with the number of children ever born. Household wealth is negatively associated with the number of children ever born in six surveys and shows a positive association in two surveys (Chad and Sierra Leone). The number of children ever born decreases with each level of education attained in the Comoros, India, Nepal, and Sierra Leone. Elsewhere, the number of children ever born is significantly lower only among men achieving higher education. Rural residence is associated with more children born in Ethiopia, India, and Sierra Leone. Employment status and occupation do not show a consistent pattern of association with men's number of children ever born.

Early Marriage and Life Options Outcomes

Employment status

Table 5 presents the results of a logistic regression model for eight countries estimating the influence of men's early marriage and other factors on men's current employment status (coded as '1' for men who report that they are currently working and '0' if they are not currently working). The Dominican Republic is again omitted due to lack of data on employment status.

Table 5. Factors associated with current employment status among ever-married men age 20-59: Odds ratios from logistic regressions

| | Chad 2004 n=1,229 | Comoros 2012 n=1,265 | Ethiopia 2011 n=8,431 | Honduras 2011-12 n=4,730 | India 2005-06 n=48,593 | Madagascar 2008-09 n=6,021 | Nepal 2011 n=2,619 | Sierra Leone 2008 n=4,390 |
|--|------------------------------------|---|--|---|---|---|---|--|
| Married before age 18 | 1.95 | 0.61 | 1.11 | 0.82 | 0.89 | 0.78 | 1.08 | 1.11 |
| Current age (ref 20-24) | | | | | | | | |
| 25-29 | 2.74 * | 1.19 | 1.31 | 2.38 * | 1.92 *** | 8.28 *** | 1.65 | 1.89 |
| 30-34 | 3.56 * | 2.57 * | 1.31 | 2.04 | 2.06 *** | 10.35 *** | 1.28 | 2.95 ** |
| 35-39 | 3.9 * | 2.56 * | 1.47 * | 1.72 | 2.19 *** | 30.91 *** | 1.49 | 3.49 *** |
| 40-44 | 13.27 *** | 2.02 | 1.40 | 3.23 ** | 2.17 *** | 23.80 *** | 1.69 | 3.67 ** |
| 45-49 | 8.63 *** | 3.45 ** | 1.33 | 1.46 | 1.64 *** | 24.73 *** | 1.70 | 3.26 ** |
| 50-54 | 3.27 | 1.69 | 1.34 | 0.66 | 0.99 | 7.97 *** | | 3.03 * |
| 55-59 | 9.98 ** | 1.64 | 1.78 * | 0.75 | | 2.82 | | 1.38 |
| Household wealth quintile (ref: poorest) | | | | | | | | |
| poorer | 1.09 | 1.56 | 0.87 | 1.07 | 1.61 *** | 1.02 | 1.48 | 1.85 * |
| middle | 13.68 * | 1.83 | 0.79 | 1.15 | 1.9 *** | 0.46 | 1.19 | 1.84 |
| richer | 4.33 | 1.52 | 0.85 | 0.80 | 1.86 *** | 0.35 | 1.12 | 1.24 |
| richest | 0.61 | 1.43 | 0.93 | 1.52 | 2.15 *** | 0.14 * | 1.11 | 0.83 |
| Education (ref: no education) | | | | | | | | |
| primary | 1.91 | 1.15 | 1.35 * | 1.45 | 0.79 | 1.39 | 1.51 | 0.93 |
| secondary | 0.75 | 0.72 | 1.64 | 0.93 | 0.71 ** | 0.61 | 0.79 | 0.50 ** |
| higher | 0.43 | 0.80 | 2.15 ** | 1.07 | 0.60 ** | 0.31 | 0.69 | 0.59 |
| Residence (ref: urban) | | | | | | | | |
| rural | 3.07 | 0.84 | 0.88 | 2.26 ** | 0.75 ** | 2.41 | 0.62 * | 1.91 * |

*p<=0.05, **p<=0.01, ***p<=0.001

This model indicates that men's early marriage is not associated with whether men are currently working or not currently working in any of the eight countries. Current age is generally positively associated with currently working in all surveys but Nepal. Household wealth is positively associated with employment status in India and for selected wealth quintiles in two other countries. Educational attainment and rural residence are inconsistently associated with current employment status in each of the three countries where each of these variables are statistically significant.

Educational attainment

The results of the model estimating completed secondary or higher education for all study countries but Dominican Republic are presented in Table 6. Men's early marriage is statistically significantly associated with educational attainment in six of the eight countries for which this analysis was conducted. In all cases, this association is a negative one. The odds of completing secondary or higher education range from 24% lower among men who married before age 18 compared to men who married later in India ($p \leq 0.001$) to 55% lower ($p \leq 0.001$) in Honduras.

Table 6. Factors associated with completion of secondary or higher education among ever-married men age 20-59: Odds ratios from logistic regressions

| | Chad 2004 n=1,214 | Comoros 2012 n=1,171 | Dominican Republic 2013 n=6,587 | Ethiopia 2011 n=8,363 | Honduras 2011-12 n=4,728 | India 2005- 06 n=48,549 | Madagascar 2008-09 n=6,006 | Nepal 2011 n=2,614 | Sierra Leone 2008 n=4,330 |
|--|----------------------|----------------------------|--|-----------------------------|--------------------------------|-------------------------------|----------------------------------|-----------------------|------------------------------------|
| Married before age 18 | 0.71 | 0.76 | 0.59 *** | 0.58 * | 0.45 *** | 0.76 *** | 0.61 ** | 0.61 ** | 0.7 * |
| Current age (ref 20-24) | | | | | | | | | |
| 25-29 | 0.51 | 0.50 * | 0.97 | 0.59 | 0.46 *** | 0.95 | 0.79 | 0.55 ** | 0.46 ** |
| 30-34 | 0.46 | 0.29 *** | 0.69 ** | 0.61 * | 0.28 *** | 0.85 * | 0.93 | 0.32 *** | 0.26 *** |
| 35-39 | 0.49 | 0.30 *** | 0.42 *** | 0.65 | 0.28 *** | 0.57 *** | 1.57 * | 0.42 *** | 0.23 *** |
| 40-44 | 0.27 ** | 0.21 *** | 0.27 *** | 0.58 | 0.29 *** | 0.44 *** | 2.36 *** | 0.27 *** | 0.22 *** |
| 45-49 | 0.21 *** | 0.25 *** | 0.28 *** | 0.51 * | 0.22 *** | 0.39 *** | 1.47 | 0.16 *** | 0.22 *** |
| 50-54 | 0.22 ** | 0.22 *** | 0.21 *** | 0.34 *** | 0.14 *** | 0.37 *** | 0.85 | | 0.13 *** |
| 55-59 | 0.31 * | 0.11 *** | 0.15 *** | 0.1 *** | 0.10 *** | | 0.76 | | 0.14 *** |
| Household wealth quintile (ref: poorest) | | | | | | | | | |
| poorer | 22.62 ** | 4.41 *** | 2.13 *** | 0.85 | 2.22 *** | 2.28 *** | 1.13 | 1.57 * | 1.66 ** |
| middle | 23.70 ** | 3.91 *** | 3.10 *** | 1.27 | 4.11 *** | 4.18 *** | 2.62 *** | 2.93 *** | 2.02 *** |
| richer | 33.14 ** | 6.18 *** | 5.97 *** | 4.64 *** | 7.49 *** | 9.54 *** | 5.25 *** | 6.49 *** | 2.62 *** |
| richest | 27.58 ** | 9.84 *** | 14.76 *** | 11.17* *** | 37.34 *** | 34.35 *** | 16.63 *** | 17.92 *** | 5.97 *** |
| Employment status | | | | | | | | | |
| currently working | 0.57 | 0.94 | | 1.51 | 0.61 * | 0.79 * | 0.75 | 0.66 * | 0.73 |
| Occupation (ref: none) | | | | | | | | | |
| prof, techn, manag, clerical | 2.02 | 2.54 | | 9.12 *** | 4.37 *** | 7.37 *** | 3.64 | 0.81 | 4.33 *** |
| agriculture | 0.41 | 0.15 *** | | 0.19 ** | 0.52 | 0.79 | 0.21 * | 0.36 | 0.21 *** |
| services & sales | 0.80 | 13.73 ** | | 0.4 | 0.99 | 1.21 | 0.44 | 0.61 | 0.67 |
| manual | 0.86 | 0.31 ** | | 0.26 * | 0.78 | 0.68 * | 0.32 | 0.20 * | 0.33 *** |
| Residence (ref: urban) | | | | | | | | | |
| rural | 0.47 | 0.73 | 0.77 ** | 0.58 * | 0.82 | 1.39 *** | 0.74 * | 1.92 *** | 0.67 * |

*p<=0.05, **p<=0.01, ***p<=0.001

Age is generally negatively associated with educational attainment and household wealth is usually positively associated with completing secondary or higher education. Rural residence and selected educational categories are also frequently significantly associated with educational attainment, though the direction of the association is not consistent. Where current employment status is significantly associated with completing secondary or higher education (Honduras, India, and Nepal), it is negatively so.

Discussion and Conclusions

These results provide some of the first insights into the extent of early marriage among boys at the global level and the degree to which this phenomena is related to a range of factors that have been investigated in relation to child marriage among girls. The results of the bivariate analyses suggest that many of the same factors are related to very early marriage for both boys and girls. However, there are a number of important differences that emerge between the two. As is the case for women, men who married as boys are more likely to live in rural areas, be poorer than their peers who married later, and to not have completed more than primary school. However, the strength of these relationships across the range of countries examined here is less strong than is typically the case when examining early marriage among girls, with early marriage among boys not significantly related to these factors in a number of countries.

Furthermore, in contrast to the global patterns of child marriage among girls, which have generally seen declines in rates of early marriage over time, we find some evidence that early marriage rates are higher for younger cohorts of men, suggesting at least a partial reversal of broader trends towards older age at marriage. There are a number of potential reasons for this, including a greater convergence between the sexes in ages at marriage that lowers the age at marriage among boys while simultaneously increasing it among girls. Potential selection effects in which men are included in older age cohorts, possibly due to differential mortality rates between those who marry early and those who do not; disproportionate degree

of misreporting of age and age at marriage at older ages; changes in the types of relationships that are classified as ‘married or living together as if married’; or the disproportionate underreporting of informal unions among older cohorts may misleadingly present as a trend toward increasing rates of early marriage when no such trend exists. Alternatively, these data may be capturing a secular trend towards earlier cohabiting unions, possibly as the result of greater economic uncertainty, increased migration, changing social norms governing unions and romantic partnerships, or other macro processes influencing family formation processes for boys and men.

The multivariate analyses find strong associations between early marriage and both total number of children and educational attainment but a middling relationship with use of contraception and employment status. In part this may be the result of life cycle effects – those marrying at earlier ages are likely to have, at the time of the survey, been married longer and more completed families – which are not fully controlled for in the models but likely influence contraceptive use and total number of children in particular. Nonetheless, these results, in combination with the bivariate associations, do suggest that the factors driving early marriage at the cross-national level among boys differ somewhat from those that drive marriage among girls.

In conclusion, these results demonstrate that while much less common than among girls, significant proportions of men are married as boys, with potentially significant implications for a range of development, health and social outcomes. However, the analyses presented here also suggest significant differences between both the associations and consequences of child marriage for boys and girls, presenting challenges to both researchers and policy-makers interested in understanding and preventing child marriage for both boys and girls. Further research is needed to fully understand both the degree to which early marriage among boys shares common social or economic determinants and consequences with that among girls, particularly in terms of understanding the role of gender norms in shaping family formation patterns and expectations for both groups, the ‘process’ of marriage (particularly the degree of agency involved), and the implications of these patterns for a broader range of outcomes.

References

- Cooper, L. G., N.L. Leland, and G. Alexander. (1995) "Effect of maternal age on birth outcomes among young adolescents." *Biodemography and Social Biology* 42(1-2): 22-35.
- Ezeh A.C., Mberu B. U., Emina O. J. (2009). "Analysis of Patterns, Determinants and Implications of the Stall in Fertility Decline in Eastern African Countries: regional", *Phil. Trans. R. Soc. B*, 364, doi: 10.1098/rstb.2009.0166.
- Fall, S. and P. Ngom (2001). "Baisse de la fécondité en Afrique francophone : Tendances récentes et futures". *Communication présentée au séminaire organisé par la Division Population, Nations unies sur les Perspectives de déclin de la fécondité dans les pays à forte fécondité*, New-York, 9-11 juillet 2001, 18 p.
- Gage, Anastasia. 2000. "Female Empowerment and Adolescent Demographic Behaviour." Pp. 186-203 in *Women's Empowerment and Demographic Processes: Moving Beyond Cairo*, edited by Harriet Presser and Gita Sen. Oxford: Oxford UP.
- Goonewardene, I. M., and R.P. Deeyagaha Waduge. (2005) "Adverse effects of teenage pregnancy." *Ceylon Med J* 50(3): 116-120.
- Haldre, K., K. Rahu, H. Karro, and M. Rahu. (2007) "Is a poor pregnancy outcome related to young maternal age? A study of teenagers in Estonia during the period of major socio-economic changes (from 1992 to 2002)." *European Journal of Obstetrics & Gynecology and Reproductive Biology* 131(1): 45-51.
- Hirschman, C. (1985). "Premarital Socioeconomic Roles and the Timing of Family Formation: A Comparative Study of Five Asian Societies." *Demography* 22(1): 35-59.
- Hirschman, C. and R. Rindfuss (1980). "Social, Cultural and Economic Determinants of Age at Birth of First Child in Peninsular Malaysia." *Population Studies* 34: 507-518.
- MacQuarrie, Kerry L.D. (2009) "The Unfolding of Women's Empowerment over the Life Course in Madhya Pradesh, India: The Influence of Family Formation and Early Empowerment Resources." Paper for the XXVI IUSSP International Population Conference, September 2009, Marrakech, Morocco.
- Rutstein, Shea O. 2008. *The DHS Wealth Index: Approaches for Rural and Urban Areas*. DHS Working Papers No. 60. Calverton, MD: Macro International.
- Rutstein, Shea O. and Kiersten Johnson. 2004. *The DHS Wealth Index*. DHS Comparative Reports No. 6. Calverton, MD: ORC Macro.
- Timaeus, I. M. and T. A. Moultrie (2008). "On Postponement and Birth Intervals." *Population and Development Review* 34(3): 483-510.
- Tsui, A. O. (1982). "The Family Formation Process Among U.S. Marriage Cohorts." *Demography* 19(1): 1-27.

de Vienne, C. M., Creveuil, C., & Dreyfus, M. (2009). "Does young maternal age increase the risk of adverse obstetric, fetal and neonatal outcomes: a cohort study." *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 147(2): 151-156.

Appendix Tables

Prevalence of marriage before age 18 among ever-married men age 20-59 by religious affiliation

| | Confidence Interval | | | Weighted n | | Confidence Interval | | | Weighted n |
|--------------------------------|---------------------|----------------|----------------|---------------|---------------------------|---------------------|----------------|----------------|---------------|
| | Percent | Lower Bound | Upper Bound | | | Percent | Lower Bound | Upper Bound | |
| Chad 2004 | | | | | India 2005-06 | | | | |
| $\chi^2 = 15.4741$ | | | | | $\chi^2 = 101.2851$ | | | | |
| $p = 0.288$ | | | | | $p = 0.000$ | | | | |
| Catholic | 15.2 | 10.1 | 22.1 | 292 | Hindu | 14.3 | 13.7 | 14.9 | 40,264 |
| Protestant | 11.3 | 6.4 | 19.2 | 208 | Muslim | 11.4 | 10.0 | 12.9 | 5,743 |
| Muslim | 17.5 | 13.7 | 22.0 | 664 | Christian | 7.9 | 6.1 | 10.3 | 1,080 |
| No religion | 6.3 | 0.7 | 39.0 | 28 | Sikh | 9.9 | 7.5 | 12.9 | 836 |
| Total | 15.4 | 12.5 | 18.7 | 1,230 | Buddhist | 9.2 | 6.5 | 12.9 | 366 |
| Comoros 2012 | | | | | Madagascar 2008-09 | | | | |
| $\chi^2 = 3.0764$ | | | | | $\chi^2 = 49.7754$ | | | | |
| $p = 0.246$ | | | | | $p = 0.000$ | | | | |
| Muslim | 14.1 | 11.5 | 17.1 | 1,256 | Catholic | 11.5 | 9.8 | 13.4 | 2,009 |
| Total | 14.2 | 11.6 | 17.2 | 1,267 | Protestant | 10.2 | 8.6 | 11.9 | 2,035 |
| Dominican Republic 2013 | | | | | Nepal 2011 | | | | |
| $\chi^2 = 31.4707$ | | | | | $\chi^2 = 12.0717$ | | | | |
| $p = 0.001$ | | | | | $p = 0.099$ | | | | |
| Catholic | 9.9 | 8.5 | 11.4 | 3,118 | Hindu | 21.4 | 19.1 | 23.9 | 2,213 |
| Evangelical | 9.4 | 7.5 | 11.8 | 1,180 | Buddhist | 22.2 | 16.5 | 29.2 | 225 |
| Adventist | 11.4 | 5.5 | 22.2 | 118 | Muslim | 14.3 | 7.7 | 25.0 | 80 |
| No religion | 14.4 | 12.6 | 16.6 | 2,104 | Kirat | 4.2 | 0.7 | 21.8 | 48 |
| Other | 8.2 | 3.0 | 20.6 | 61 | Christian | 15.4 | 8.0 | 27.6 | 51 |
| Total | 11.3 | 10.2 | 12.4 | 6,587 | Total | 20.8 | 18.7 | 23.0 | 2,619 |
| Ethiopia 2011 | | | | | Sierra Leone 2008 | | | | |
| $\chi^2 = 27.0713$ | | | | | $\chi^2 = 1.4536$ | | | | |
| $p = 0.125$ | | | | | $p = 0.896$ | | | | |
| Orthodox | 16.3 | 13.6 | 19.5 | 3,988 | Christian | 10.1 | 7.9 | 12.8 | 795 |
| Catholic | 18.4 | 9.3 | 33.1 | 73 | Muslim | 10.3 | 9.0 | 11.8 | 3,577 |
| Protestant | 15.1 | 12.7 | 17.8 | 1,600 | Total | 10.3 | 9.1 | 11.6 | 4,391 |
| Muslim | 14.3 | 11.8 | 17.2 | 2,534 | | | | | |
| Traditional | 28.5 | 13.2 | 51.0 | 77 | | | | | |
| Other | 13.5 | 7.6 | 22.8 | 159 | | | | | |
| Total | 15.6 | 13.9 | 17.4 | 8,433 | | | | | |
| Honduras 2011-12 | | | | | | | | | |
| $\chi^2 = 21.0956$ | | | | | | | | | |
| $p = 0.016$ | | | | | | | | | |
| No religion | 20.5 | 17.2 | 24.3 | 892 | | | | | |
| Catholic | 14.3 | 12.5 | 16.2 | 2,078 | | | | | |
| Evangelical/Protestant | 16.5 | 14.4 | 18.8 | 1,742 | | | | | |
| Total | 16.237 | 14.934 | 17.629 | 4,730 | | | | | |

Note: Categories with fewer than 25 unweighted cases are not reported. Total cases may not sum due to omitted categories/missing values.

Prevalence of marriage before age 18 among ever-married men age 20-59 by ethnicity

| | Confidence Interval | | | Weighted n | | Confidence Interval | | | Weighted n |
|--------------------------|---------------------|----------------|----------------|---------------|----------------------------|---------------------|----------------|----------------|---------------|
| | Percent | Lower Bound | Upper Bound | | | Percent | Lower Bound | Upper Bound | |
| Ethiopia 2011 | | | | | India 2005-06 | | | | |
| $\chi^2 = 171.1835$ | | | | | $\chi^2 = 590.1158$ | | | | |
| $p = 0.000$ | | | | | $p = 0.000$ | | | | |
| Affar | 18.9 | 14.7 | 24.0 | 49 | Scheduled caste | 17.0 | 15.8 | 18.4 | 9,255 |
| Agew-awi | 35.2 | 17.8 | 57.7 | 118 | Scheduled tribe | 21.2 | 19.1 | 23.5 | 4,363 |
| Agew hamyra | 14.0 | 7.6 | 24.2 | 50 | Other backward class (OBC) | 14.4 | 13.5 | 15.3 | 19,199 |
| Amhara | 19.8 | 16.4 | 23.7 | 2,718 | Other | 8.6 | 7.9 | 9.4 | 14,295 |
| Ari | 11.3 | 4.3 | 26.6 | 27 | Don't know/none reported | 2.5 | 0.9 | 6.4 | 126 |
| Bench | 8.2 | 2.8 | 21.9 | 51 | Total | 13.6 | 13.1 | 14.2 | 48,614 |
| Dawuro | 12.0 | 5.7 | 23.8 | 38 | Nepal 2011 | | | | |
| Derashe | 11.8 | 11.8 | 11.8 | 25 | $\chi^2 = 95.7093$ | | | | |
| Gamo | 8.5 | 5.2 | 13.6 | 121 | $p = 0.000$ | | | | |
| Gedeo | 19.6 | 13.4 | 27.9 | 166 | Hill brahmin | 7.9 | 5.3 | 11.7 | 371 |
| Goffa | 19.6 | 11.4 | 31.5 | 46 | Hill chhetri | 20.0 | 16.3 | 24.2 | 504 |
| Guragie | 8.5 | 5.3 | 13.2 | 193 | Terai brahmin/chhetri | 16.8 | 5.7 | 40.6 | 26 |
| Hadiya | 4.3 | 1.4 | 12.1 | 100 | Other terai caste | 27.4 | 19.1 | 37.8 | 244 |
| Kefficho | 11.0 | 5.6 | 20.6 | 88 | Hill dalit | 30.5 | 24.3 | 37.6 | 237 |
| Kembata | 23.3 | 12.8 | 38.6 | 77 | Terai dalit | 39.2 | 28.3 | 51.4 | 107 |
| Murle | 7.3 | 1.0 | 37.2 | 25 | Newar | 12.5 | 6.8 | 22.0 | 113 |
| Oromo | 14.3 | 11.8 | 17.3 | 2,954 | Hill janajati | 19.6 | 15.9 | 23.8 | 615 |
| Sidama | 14.2 | 8.7 | 22.2 | 326 | Terai janajati | 26.6 | 21.7 | 32.2 | 311 |
| Silte | 15.4 | 8.6 | 26.2 | 93 | Muslim | 14.6 | 8.0 | 25.2 | 80 |
| Somalie | 13.4 | 10.2 | 17.3 | 155 | Total | 20.8 | 18.7 | 23.0 | 2,619 |
| Tigrie | 5.5 | 3.9 | 7.5 | 515 | Sierra Leone 2008 | | | | |
| Welaita | 10.8 | 6.0 | 18.6 | 230 | $\chi^2 = 29.0688$ | | | | |
| Yem | 6.2 | 5.2 | 7.4 | 41 | $p = 0.082$ | | | | |
| Total | 15.6 | 13.9 | 17.4 | 8,433 | Creole | 11.7 | 3.9 | 30.3 | 41 |
| Honduras 2011-12 | | | | | Fullah | 7.0 | 3.8 | 12.5 | 155 |
| $\chi^2 = 31.6881$ | | | | | Kono | 14.2 | 9.1 | 21.6 | 176 |
| $p = 0.025$ | | | | | Limba | 6.2 | 3.5 | 10.7 | 263 |
| Garifuna | 16.7 | 9.9 | 26.9 | 116 | Loko | 9.1 | 3.2 | 23.3 | 105 |
| Negro inglés | 21.2 | 9.0 | 42.3 | 24 | Mandingo | 3.3 | 1.2 | 8.6 | 92 |
| Misquito | 18.5 | 12.0 | 27.5 | 55 | Mende | 12.4 | 10.1 | 15.1 | 1,506 |
| Lenca | 10.3 | 7.5 | 14.0 | 412 | Sherbro | 10.9 | 6.1 | 18.6 | 140 |
| Maya chorti | 13.6 | 8.5 | 21.1 | 200 | Temne | 8.9 | 7.3 | 11.0 | 1,533 |
| Other | 10.7 | 7.4 | 15.2 | 397 | Koranko | 9.5 | 4.9 | 17.7 | 131 |
| Don't know/none declared | 17.7 | 16.1 | 19.3 | 3,486 | Other Sierra Leone | 13.3 | 9.6 | 18.2 | 219 |
| Total | 16.2 | 14.9 | 17.6 | 4,730 | Total | 10.3 | 9.1 | 11.6 | 4,391 |

Note: Ethnicity data are not collected in Chad, Comoros, Dominican Republic, and Madagascar. Categories with fewer than 25 unweighted cases are not reported. Total cases may not sum due to omitted categories/missing values.

