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AYARR
Asian Young Adult Reproductive Risk Project

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The project presently involves investigators and national surveys in six Asian countries. The government of **Hong Kong** (now the Hong Kong Special Administrative Region) has supported area-wide youth surveys, both household-based and in-school, in 1981, 1986, 1991, and 1996. The 1994 **Philippines**' Young Adult Fertility and Sexuality Survey (YAFS-II) was conducted by the Population Institute, University of the Philippines, with support from the UNFPA. **Thailand**'s 1994 Family and Youth Survey (FAYS) was carried out by the Institute for Population and Social Research at Mahidol University, with support from the UNFPA. In **Indonesia**, the 1998 Reproduksi Remaja Sejahtera (RRS) baseline survey was funded by the World Bank and by USAID through Pathfinder International's FOCUS on Young Adults program. The RRS was carried out by the Lembaga Demografi at the University of Indonesia under the supervision of the National Family Planning Coordinating Board (BKKBN). The **Nepal** Adolescent and Young Adult (NAYA) project, which includes the 2000 NAYA youth survey, is being carried out by Family Health International and the Valley Research Group (VaRG) with support from USAID to Family Health International (FHI). The **Taiwan** Young Person Survey (TYPF) of 1994 was carried out by the Taiwan Provincial Institute of Family Planning (now the Bureau for Health Promotion, Department of Health, Taiwan) with support from the government of Taiwan.

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Early Marriage and Childbearing in Indonesia and Nepal

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Abstract

Using large-scale youth surveys conducted in Indonesia in 1999 and in Nepal in 2000, this paper examines age patterns of marriage for males and females, age patterns of motherhood (giving birth to first child), and factors associated with the pace of marriage and pace of motherhood in these two countries.

Early marriage before age 18 among females is common in rural Indonesia and in both urban and rural areas of Nepal. Majority of rural Nepalese females marry before age 18. Early marriage among males, defined as marriage before age 20, is rare in Indonesia in both urban and rural areas and in urban Nepal but common in rural Nepal. Child marriages (marriages before age 15) are common in Nepal especially for females but rare in Indonesia even among rural females. In Nepal, 17% of urban females and 26% of rural females marry before age 15 but in Indonesia, only 2% of urban females and 8% of rural females do so.

Majority of Indonesian and Nepalese youth who married early think that they married too early. Among the married youth who think that they married too early, substantial proportions in Indonesia and a large majority in Nepal report that they did so according to the wishes of their parents.

Early motherhood, defined as giving birth to a child before age 20, is common in both countries. In Indonesia, 19% of urban females and 40% of rural females have their first child before age 20. In Nepal, the proportions are higher: 31% among urban females and 41% among rural females.

In both countries, the pace of marriage has been slowing in recent years. Among the factors examined, education has the strongest effect on the pace of marriage for both males and females in both countries. Both countries also show large regional variations in the pace of marriage suggesting persisting effects of cultural tradition on marriage behavior. Father's education and mother's education have moderate levels of effects on the pace of marriage in Indonesia but only weak effects in Nepal. The background factors affect females' pace of marriage and pace of motherhood in similar manner in Indonesia.

In Nepal, the background factors affect females' pace of marriage and pace of motherhood somewhat differently. Females with primary level education are marrying at much slower pace than females with no education but these two groups of females have similar pace of motherhood. Junior high school education slows the pace of marriage much more than the pace of motherhood. The effects of ecological region (Terai vs. Hill) and development region (less developed vs. more developed) are much stronger on the pace of marriage than on the pace of motherhood. The differences in the effects on the pace of marriage and the effects on the pace of motherhood are likely due to delayed consummation of marriage among those who marry at very young ages and to lower fecundity among very young married females right after marriage than among women who marry at older ages.

It is not likely that the prevalence of early marriage and early motherhood will disappear quickly in these countries. In order to improve reproductive health there, health intervention programs focusing on young married females need to be developed and implemented. Innovative programs designed for encouraging newly married young couples to wait longer before having the first child should also be designed and implemented.

Many countries in East Asia and Southeast Asia have completed demographic transitions to replacement level fertility or below and have experienced remarkable changes toward late marriage and childbearing in the recent years. At the same time, early marriage and childbearing among women persist in most countries in South Asia and in some countries in Southeast Asia (Singh 1998; Singh and Samara 1996). Early marriages have been the norm in most of the traditional societies based on agricultural economies where social and economic ties between generations are strong. In such traditional societies, parents rather than the marrying couples typically make marriage decisions. Economic development and social changes tend to loosen intergenerational ties. In turn, nuclear families replace the extended or stem families and marriage decisions move from parents to young men and women themselves. These changes usually result in later age at marriage as young men and women wait until they become socially and economically ready for independent living (Caldwell et al. 1998; Dahal, Fricke, and Thornton 1993; Malhortra 1991; Taj 1989; Williams 1990; Wolf 1990).

This report takes a close look at patterns and covariates of early marriage and childbearing in two Asian countries: Indonesia and Nepal. In recent years, Indonesia has experienced remarkable economic and social development and rapid fertility decline. Yet, early marriage and childbearing remain quite prevalent, especially in rural areas (Central Bureau of Statistics et al. 1998). In Nepal, economic and social development, as well as demographic transition, are still in their early stages. Fertility level remains high, and early marriage and childbearing is very common (Pradhan et al. 1997).

Early marriage can have some profound and lasting effects on women's lives. Early marriages among men are not common in these countries. Therefore, a very young bride, under age 18 for example, is likely to marry a husband who is much older. After marriage, she is likely to have limited autonomy vis-à-vis her husband. Limited autonomy of the young bride is likely to last throughout her married life. She is also likely to be subject to decision-making by her parents-in-law in domestic matters (Amin and Cain 1997; Caldwell and Caldwell 1992). Lack of autonomy may result in abuses and violence against married women. Very early marriage is associated with early termination of formal education, limited opportunities for non-formal education, and limited access to mass media (Thapa and Mishra 2001). Women with less education and limited exposure to mass media, in turn, are likely to have limited knowledge on reproductive health and infant/child health care. Early marriage leads to early childbearing. Children born to very young mothers are likely to experience higher levels of morbidity and mortality during infancy and early childhood.

Most of the national level studies on marriage timing in these countries have relied mostly on census data and demographic surveys. Census data provide limited background information for the study of correlates of marriage behavior. Demographic surveys typically consist of samples of married women. They have serious limitations for examining timing of marriage of young women, a large proportion of whom are not yet married and therefore not included in the sample. The demographic surveys of women provide no information on men's marriage behavior except as spouses of married women. A number of small-scale ethnographic studies are available but the results from these studies cannot be generalized for the whole population.

This paper uses large-scale youth surveys conducted in Indonesia in 1999 and in Nepal in 2000. Samples for these surveys are limited only by age and include young men and women of all marital statuses. Using these surveys, we are able to examine marriage behavior in relation to the individual and family background of the young people. We examine age patterns of marriage for men and women, age patterns of motherhood (giving birth to first child), and factors associated with the pace of marriage and pace of motherhood in Indonesia and Nepal. The discussion of the results will include implications on reproductive health policies and programs.

Demographic Background

In order to understand the marriage and childbearing behavior in a larger demographic context, we examine the basic demographic conditions in Indonesia and Nepal based on reports of recent demographic surveys. In Indonesia, rapid economic development and social change and concurrent national family planning programs have resulted in remarkable fertility decline in recent years. The Demographic and Health Survey of 1997 report that total fertility rate during three years preceding the survey was 2.8, which is less than half the level in 1971. Fertility level declined at all ages of women, due to postponement of the initiation of childbearing among younger women, and to early termination of childbearing among older women. The peak of fertility changed from 20-24 age group to 25-29 age group since 1991 due to postponement of marriage and first birth among urban women. Yet, fertility among women under age 20 is still high, constituting 11% of the total fertility rate in the 1995-97 period (Central Bureau of Statistics et al. 1998: 36-37).

Marriages before age 20 is quite common among Indonesian women. The median age at first marriage among Indonesian women age 25-49 was 18.6 in 1997. Median age at first marriage was higher in urban areas than in rural areas by three and half years: 20.4 in urban areas and 17.9 in rural areas. Median age at marriage varied greatly by women's level of education, ranging from 16.9 among women with no education to 22.0 among women with some secondary or higher education (Central Bureau of Statistics et al. 1998: 115-116).

Infant mortality rate in Indonesia declined from 142 deaths per 1,000 live births in the 1965-70 period to 52 in the 1993-97 period. Infant mortality rate is much higher in rural areas than in urban areas. Infant mortality rate also varies greatly by region, mother's education, birth order, previous birth interval, and mother's age at birth. Infants born to mothers under age 20 are 32% more likely to die during the first year of life than infants born to mothers aged 20-29 (Central Bureau of Statistics et al. 1998: 132-135).

In Nepal the fertility rate declined about 20% during the 20-year period from mid-1970s to mid-1990s. The Nepal Fertility Survey of 1976 estimates the total fertility rate to be 6.33 and the 1996 Nepal Family Health Survey estimates the total fertility rate to be 4.60 for the 12-month periods preceding each survey.[1] Fertility is lower in urban areas than in rural areas and among more educated women than among less educated (Pradhan et al. 1997: 39). The peak of fertility has been in the 20-24 age group since 1986. Births to women under age 20 constituted 14% of total fertility in 1996.

Early marriage has been prevalent in Nepal. Census data show that 75% of women aged 15-19 were married in 1971. Very early marriages have become less common in recent years but still remains high. The 1991 census data show that 46% of women aged 15-19 were married. The median age at marriage among women age 20-49 in 1997 was 16.4. Median age at marriage is younger in rural areas than in urban areas, in the Terai region than in Hill and Mountain regions, and in Far-western and Mid-western regions than in Eastern, Central, Western, and Mid-western regions. The median age at marriage varies greatly with women's level of education: 16.0 among women with no education and 19.8 among women with secondary education (Pradhan et al. 1997: 81-83).

Infant mortality rate in Nepal declined from about 150 deaths per 1,000 births around 1970 to 79 in 1994. Although the decline is impressive, the infant mortality rate remains very high by international standard. Infant mortality is much higher in rural areas than in urban areas, in Mountain region than in Hill and Terai region, in Mid-western and Far-western regions than in Eastern, Central, and Western regions. Infant mortality varies greatly by mother's education: 61 for secondary or higher education and 149 for no education. It also varies by mother's age. Infants born to mothers under age 20 experience much higher mortality during the first year of life than for infants born to mothers age 20-29 (Luther and Thapa 1999; Pradhan et al. 1997: 102-105.).

Data and Method

We use the Baseline Survey of Young Adult Reproductive Welfare in Indonesia conducted in 1998-99 (RRS) and Nepal Adolescent andYoung Adult Survey (NAYA) conducted in 2000. RRS interviewed 4,106 men and 3,978 women age 15 to 24 in West, Central, and East Java and Lampung Province in southern Sumatra.[2] NAYA interviewed young men and women age 14-22. It employed different sampling strategies for urban and rural areas and over-sampled urban youths to allow separate analysis for urban and rural areas. The survey includes 1,445 women and 1,379 men from urban districts and 2,730 women and 2,423 men from rural districts.[3]

First we estimate the cumulative proportions of men and women who marry by selected ages using the life-table method. The cumulative proportions of women who give birth to the first child by selected ages are also estimated using the life-table method. We then examine factors associated with age at first marriage among young men and women in Indonesia and Nepal. Lastly, we examine factors associated with age at first birth among young women in the two countries.

We include the year of birth as a potential factor to estimate the trend in age at first marriage. Education has been identified as a strong factor associated with the timing of marriage in these countries (Williams 1990; Montgomery and Sulak 1989; Thapa 1989). Higher education is associated with later age at first marriage for many reasons. Typically, young men and women do not marry while they are in school, and the longer they stay in school, the later they marry. Men and women who have higher levels of education develop higher levels of autonomy vis-à-vis their parents both by having better knowledge and by having better opportunities for employment and economic independence, which usually result in later marriage (Taj 1989; Wolf 1990). We include

a set of dummy variables indicating the level of education as less than junior high, junior high, and more in Indonesia, and as none, primary, secondary, and more in Nepal. Different classifications of education are used for the two countries because the general level of education is much higher in Indonesia than in Nepal.

Both Indonesia and Nepal are culturally and ethnically diverse countries. Cultural and ethnic traditions are found to affect marriage behavior in these countries (Malhotra 1997; Thapa 1989, 1997). Differentials in cultural and ethnic traditions in marriage behavior are often evidenced by community and regional level differences (Thapa 1997). We try to capture the effect of cultural and ethnic differentials by including a number of variables indicating the communities the respondents live in. For Indonesia, we use a set of dummy variables indicating four provinces: West Java, Central Java, East Java, and Lampung.

For Nepal, we use a dummy variable indicating the ecological region (Terai or Hill), and a dummy variable indicating the development region (Mid-western and Far-western districts vs. others). Nepal consists of three ecological regions: Terai, Hill, and Mountains. Mountain region, which is sparsely populated, is not included in the NAYA survey. Because of the proximity to the Northern India, traditional Hindu cultures are practiced in Terai ecological region. The Hill ecological region consists of numerous valleys including the capital (Kathmandu) and other urban areas, which are economically more modernized than other areas in the country. A mixture of the Hindu and Buddhist cultures is practices in the Hill region. Mid-western and Far-western districts are considered much less developed than other districts (West, Central, and East) in terms of economy, education, and social development (Thapa 1995).

We also examine the effects of parents' level of education. In communities where early marriage has a high normative value, high level of parents' education is likely to be associated with early marriage of their children. The effect is likely to be stronger for daughters than for sons because early marriage ensures sexual chastity of daughters which is highly valued in these countries. In communities where early marriage does not have high normative value, high level of parents' education is likely to be associated with later marriage of their children because the more educated parents are likely to adopt modern values such as autonomy of children more easily than the less educated parents. In our analysis, we classify parents' education into three groups: none, primary, and more than primary, using two dummy variables.

Married respondents in our surveys were asked if they felt that they married too early. In both countries, the majority of women who married before age 18 and the majority of men who married before age 20 felt that they married too early. The proportion saying they married too early declines to less than 50 percent among women who married at age 18 or later, and among men who married at age 20 or later. We therefore define early marriage as marriage before age 18 for women and marriage before age 20 for men.

To estimate the effects of these potential factors on the pace of marriage, we use the proportional hazard model, a regression of life tables. For the factors that are found to

have statistically significant effects, the results are transformed to variations in adjusted proportion of marrying before age 18 for women and before age 20 for men, using multiple classification analysis technique (Retherford and Choe 1993: Chapter 8).

We examine the effects of the same set of variables on the timing of first birth among women in Indonesia and Nepal in a similar manner. In general, first birth follows first marriage without delay. Exception are found among women who marry very early (before age 15, for example). They tend to have longer first birth intervals than women who marry at older ages for several reasons. Most of child marriages are not consummated immediately and result in long interval between marriage and birth of first child. For most women who marry at very young ages, the marriages are arranged by parents or other adults. Young couples from arranged marriages are likely to have had little time to develop intimate feelings and may have less frequent sexual intercourses after marriage than the couples from love marriages. Very young married women under age 15 may be physiologically immature and have lower level of fecundity, resulting in longer first birth interval than older brides in late teens or early twenties. For these reasons, factors that are associated with early age at marriage will also be associated with early age at first birth but the latter effects may be somewhat smaller than the former.

Results

Pace of Marriage

Pace of marriage is estimated by the life-table method. Data allows us to estimate the cumulative proportions of men and women marrying by ages 15-21 for Nepal and 15-23 for Indonesia. Figures 1 and 2 show these proportions of men and women in urban and rural parts of Indonesia and Nepal. Table 1 shows the estimated proportions for selected ages. Not surprisingly, women marry much earlier than men and early marriages are more common in rural areas than in urban areas in both countries. It is notable that child marriages (marriages before age 15) are common in Nepal especially for women but rare in Indonesia even among rural women. In Nepal, 17% of urban women and 26% of rural women marry before age 15 but in Indonesia, only 2% of urban women and 8% of rural women do so. The low prevalence of child marriage in Indonesia is probably due to nearly universal availability of primary level education. Our data show that only 1 percent of Indonesian youths had no education compared to 38 percent of women and 11 percent of men in Nepal.

Early marriages (marriage before age 18) are common among women in both countries. More than one in ten urban Indonesian women and more than one third of rural Indonesian women marry before age 18. In Nepal, more than one third of urban women and more than half of rural women marry before age 18. Early marriage is rare among Indonesian men but common among Nepalese men especially in rural areas. Looking from a slightly different perspective, in rural areas of Indonesia women are marrying at much earlier ages than urban women, but among men the age patterns of first marriage do not vary much by urban-rural residence. As a consequence, rural women who marry early would be marrying husbands who are much older then themselves in Indonesia. In Nepal,

the urban-rural differences in the age patterns of marriage are similar for women and men.

Views on Early Marriage

Although early marriages do occur frequently especially among women, they are not viewed as desirable by most of the youth in our survey. In both countries, majority of women who married before age 18 report that they think they married too early. The proportion who think they married too early becomes less among women who married after age 18. Among men, in both countries, majority of those who married before age 20 report that they think they married too early.

The surveys asked why they married at ages they thought were too early. The most frequently cited reason was "because my parents wanted." Table 2 shows the percentages of women and men who report that they married early (before age 18 for women and before age 20 for men) because their parents wanted so. In urban Indonesia, about one in six women report that they married early because their parents wanted so. None of the urban Indonesian men reported so. In rural Indonesia, nearly one in four women and one in six men report so. In Nepal, among women who married before age 18 and men who married before age 20, proportion who report that they did so because the parents wanted constitute a large majority in urban areas and an overwhelming majority in rural areas.

In Indonesia, where early marriage is less prevalent than in Nepal, the proportion of early marriages that resulted from parents' decisions is smaller than in Nepal. These statistics indicate that parents in Nepal have large influences on when their children should marry. The statistics also indicate that parents' wishes often conflict with their children's preferences. Previous studies on marriage behavior have argued that age at marriage tends to be younger when marriage is primarily a union of two families and the marriage decisions are made by parents than when marriage is primarily a union of two individuals and decisions are made by the marrying individuals (Caldwell et al. 1998; Malhotra 1991; Taj 1989; Williams 1990; Wolf 1990). Statistics from our data supports these theories.

Early Motherhood

One of the major consequences of early marriage is early childbearing. In both Indonesia and Nepal, childbearing begins soon after marriage, typically within two years, except for the very young brides who do not begin to live with their husbands until some time after the marriage. The association between early marriage and early motherhood, therefore, remain strong: most women who marry before age 18 would begin to have children before they reach age 20.

Early childbearing, in turn, has serious adverse health consequences on their children as well as on women themselves. Studies on maternal and child health repeatedly have found that childbearing before age 20 is associated with increased risks of maternal and infant mortality and morbidity. The Indonesia Demographic and Health

Survey 1997 reports that the infants born to mothers under age 20 are (84.8 vs. 63.8) 33% more likely to die during the first year of life than the infants born to mothers age 20-29 (Central Bureau of Statistics et al. 1998: Table 9.3). The net effect of mother's age at childbirth on infant mortality is typically much larger. The in-depth analysis of the Nepal Family Health Survey 1996, for example, reports that the infants born to mothers under age 20 are 65% more likely to die during the first year of life than the infants born to mothers age 20-24 (Luther and Thapa 1999: 62) after controlling for the effects of birth order and background factors.[4]

Proportions of women who become mothers by selected ages are computed by life-table methods and shown in Table 3. Childbearing before age 20 is very common in Nepal as well as in rural Indonesia, and substantial in urban Indonesia. Most women who do not begin child bearing before age 20 do so shortly afterwards. Half of women have first child before age 21 in rural areas of Nepal and Indonesia, and before age 22 in urban Nepal.

Factors Associated with Early Marriage

The effects of year of birth, education, locality, and the level of education of father and mother on the age-specific probabilities of marriage are estimated using proportional hazard models. Table 4 shows the estimated effects for Indonesia in terms of relative risks. The relative risk of 1.0 indicates no effect at all. The relative risk of less than 1.0 indicates that the associated factor lowers the age-specific probability of marriage, resulting in slower pace of marriage and lower probability of marrying early. The relative risk of greater than 1.0 indicates that the associated factor increases the pace of marriage, resulting in higher probability of marrying early.

The relative risks associated with the "year of birth" are less than 1.0 and statistically significant for both sexes for both urban and rural areas. More recent birth cohorts are marrying at slower paces than the earlier birth cohorts. The effect is stronger among men than among women. The effects of birth cohort on the pace of marriage are similar for urban and rural youth. Education has large effect on the pace of marriage. The more education respondents have, the slower the pace of marriage. The effects of education on the pace of marriage are similar across gender in urban areas. In rural areas, the effects are much smaller among men than among women. The effects can be seen very clearly in Figure 3 where relative risks are converted to the percentages of women marrying before age 18 and of men marrying before age 20.

The pace of marriage varies by provinces in Indonesia, as shown in the third panel in Table 4 and Figure 4. Early marriage is most common in West Java for both male and female youth. Interestingly, out data show that West Java is most traditional among the four provinces included in the survey by at least one other indicator. In Indonesia, circumcision is nearly universal. Circumcisions are performed mostly by doctors, midwives, or traditional circumcision practitioners (Bong Supit) in Indonesia. The proportion of male respondents who were circumcised by Bong Supit is highest in West Java amounting to 62% whereas the proportions are about one third among male respondents in Central Java and East Java and only 15% in Lampung.

Father's education does not have strong impact on children's pace of marriage in Indonesia. Mother's education, on the other hand, affects their children's pace of marriage. Young men and women with mothers with high level of education are less likely to marry early than those with mothers with low level of education (the last panel of Table 4).

Table 5 shows the estimated effects of year of birth, education, locality, and the level of education of father and mother on the pace of marriage for Nepalese youth. The relative risks associated with the "year of birth" are less than 1.0 by substantial amount and statistically significant for both sexes for both urban and rural areas. More recent birth cohorts are marrying at much slower paces than the earlier birth cohorts. The effect is stronger among men than among women, and among urban residents than among rural residents.

Education has large effect on the pace of marriage. The more education respondents have, the slower the pace of marriage as shown in the second panel of Table 5 and Figure 5. Among men, junior high school or higher level of education slows the pace of marriage substantially but less education has only a small effect. Among women, on the other hand, even primary level of education slows the pace of marriage substantially compared to those with no formal education.

In Nepal, the pace of marriage is much faster among the residents in Terai region than among the residents in Hill region (the third panel in Table 5 and Figure 6). This finding is consistent with what is known about differences in family systems in the Terai and Hill regions in Nepal (Thapa 1997). The residents of the Terai region are known to follow the culture of north India which is characterized by strict patriarchal family system, strong intergenerational ties, and early marriage especially among women. The next panel of Table 6 shows that the pace of marriage is faster in the less developed rural areas than in the more developed rural areas, consistent with general findings in Asia that economic and social development result in slower pace of marriage.

The last two panes of Table 5 show that parents' education have some effects on children's marriage timing. In urban areas of Nepal, pace of marriage is fastest among young men and women whose fathers have intermediate level (primary school) of education, and slowest among those whose fathers have high level (more than primary school) of education. Among urban Nepalese youth, about 30% were born in rural areas. The urban Nepalese youth who were born in rural areas, are likely to follow rural customs and prefer to marry early if they can afford to do so. The families whose head has the intermediate level of socioeconomic conditions indicated by primary level education of fathers are likely to follow traditional norm of early marriage. Father's education has no effect on the pace of marriage among rural youth with one exception. In rural areas, male youth whose fathers have more than primary level education have slower pace of marriage than those whose fathers have less education. These fathers may have adopted modern attitude of later marriage for their sons.

Mothers of Nepalese youth have very low levels of education. Thirty-six percent of urban youth and 64% of rural youth have mothers who have no formal education. Our

analysis found that any formal education of mothers is associated with slow pace of marriage for both male and female youth in urban areas, but mother's education has no effect on children's pace of marriage in rural areas. In Nepal, transition toward lager marriage seems to have begun among the urban youth with high level of education.

Factors Associated with Early Motherhood

The effects of year of birth, education, locality, father's education, and mother's education on the age-specific probabilities of giving first birth are estimated using proportional hazard models. We have discussed earlier that the factors associated with the pace of marriage would also affect the pace of motherhood (first childbirth) but the effects on motherhood would be smaller than the effects on early marriage. Small differences are expected because women who marry very early, before age 15 for example, are likely to have longer interval between marriage and the first birth than women who marry in late teens or in early twenties for several reasons as discussed earlier. In summary, factors associated with fast pace of marriage are likely to be associated with slower pace of first birth after marriage. The age at first birth is the combination of the age at marriage and the interval between marriage and the first childbirth. Thus, factors associated with fast pace of marriage would have similar effects on the age at first birth, but the magnitudes of the effects on first birth would be smaller than the magnitudes of the effects on marriage.

Table 6 shows the estimated effects for Indonesian women in terms of relative risks. The columns 2 and 4 are repeats of the estimated effects on the pace of marriage shown in Table 4. These columns are repeated here so that we can compare these effects with the effects on the pace of first birth shown in columns 3 and 5 in Table 6. The table shows that the two sets of effects, one on the pace of marriage and one on the pace of first birth, are very similar to each other. So, in Indonesia, the factors associated with the pace of marriage have little effects on the pace of first childbirth after marriage. This finding is not so surprising when we recall that child marriage (marriage before age 15) is rare in Indonesia.

Table 7 shows the effects of year of birth, education, locality, father's education, and mother's education on the pace of marriage and pace of giving first birth among Nepalese women. The columns 2 and 4 are repeats of the estimated effects on the pace of marriage shown in Table 5. Columns 3 and 5 show the effects on the pace of first birth. We note that two factors, year of birth and father's education, have similar effects on the pace of marriage and the pace of giving the first birth. But the effects of women's education, ecological region, development region, and mother's education on the pace of giving first birth are quite different from their effects on the pace of marriage.

The differences in the effects of women's education on the pace of marriage and the pace of giving first birth are shown clearly in Figure 7. The figure shows that each additional level of education slows the pace of marriage substantially but the pace of giving first birth is virtually the same among women with no education and women with primary school education. Junior high school education slows the pace of giving first birth only slightly. These differences indicate that the interval between marriage and the

first birth (first birth interval) is longer among women with no education than among women with primary level education, and that the first birth interval is longer among women with more than junior high level of education than among women with less education.

The third panel of Table 7 and Figure 8 show that the differences in the pace of giving first birth among Terai women and Hill women are much smaller than the differences in the pace of marriage. Table 7 also shows that the differences in the pace of giving first birth among women in more developed regions and women in less developed regions are much smaller than the differences in the pace of marriage. Mother's education had some effects on the pace of marriage but their effects on the pace of giving first birth are not statistically significant.

Summary and Discussion

Early marriages, defined this analysis as marriages before age 18 for females and before age 20 for males, are common among women in both Indonesia and Nepal. In fact, early marriage seems to be the norm among rural Nepalese women. Early marriage is not common among Indonesian men and among urban Nepalese men, but quite common among rural Nepalese men. Although early marriages do occur frequently especially among women, they are not viewed as desirable by most of the young women in our survey. In both countries, majority of women who married before age 18 report that they think they married too early. The proportion who think they married too early becomes less among women who married after age 18. Among men, in both countries, majority of those who married before age 20 report that they think they married too early.

Child marriages (marriages before age 15) are common in Nepal especially for women but rare in Indonesia even among rural women. The low prevalence of child marriage in Indonesia is probably due to nearly universal availability of primary level education.

In both countries higher level of mother's education is associated with slower pace of marriage among male and female youth as well as slower pace of motherhood among female youth. In contrast, intermediate level of father's education is associated with faster pace of marriage in urban Nepal.

Researches on marriage pattern in Asia document that cultural factors continue to affect timing of marriage, and as a consequence, timing of childbearing. Our data show similar results. Both in Indonesia and Nepal regional variations in the pace of marriage and in the pace of motherhood by locality are statistically significant. Residents in the Terai region of Nepal are known to follow traditional Hindus customs. They marry and have first child earlier than the residents of the Hill region.

In Indonesia, the factors we examined have similar effects on the pace of marriage and the pace of motherhood marked by the birth of first child. In Nepal, however, the effects of some factors on the pace of motherhood are smaller than their effects on the pace of marriage. The effect of education on the pace of motherhood is smaller than their

effect on the pace of marriage, especially at the primary level education. The effects of ecological region and development region on the pace of motherhood are smaller than their effects on the pace of marriage as well. The differences in the effects on the pace of marriage and the pace of motherhood imply that women who are least educated, who live in Terai region, and who live in the less developed regions tend to marry very early but have long interval between marriage and birth of first child.

Being in school or being employed provide roles for young women alternative to being a wife and mother. Opportunities for education and employment for young women, therefore, are likely to contribute to delayed marriages and our results are consistent with this argument. The large urban-rural difference in the prevalence of early marriage is explained mostly by the differences in educational attainments among youth in urban and rural parts of the countries. Table 8 shows the distribution of educational attainment of women aged 18-22. In both countries women with no education or primary education constitute the majority in rural areas. In urban areas, in contrast, women with more than junior high education constitute the majority.

Our data show that, opportunities for employment are rare for Nepalese young women whereas some employment opportunities exist for Indonesian young women. Among single women under age 20 in Nepal, only 8 percent in urban areas and 6 percent in rural areas are employed. In Indonesia, the proportions are 21 percent for urban women and 18 percent for rural women. It is likely that better employment opportunities for young women in Indonesia, in addition to better opportunities for education, partly explain lower prevalence of early marriage there compared to Nepal.

The analysis in this report identifies education as one of the key factors associated with prevalence of early marriage and childbearing. Making primary school level education to all young women is likely to reduce the prevalence of very early marriages in countries like Nepal where currently nearly a quarter of women are marrying before age 15. Additional levels of education are likely to decrease marriages and childbearing before age 20. Obviously, it is very difficult to increase educational opportunities to a large segment of population in a short time. Alternative programs for girls and young women that provide learning opportunities that can lead to employment opportunities are likely to reduce prevalence of early marriage. In Nepal where parents continue to make most decisions regarding their children's marriage, educational programs for parents that teach risks associated with early marriage and childbearing can complement the programs for young women.

It is likely that the prevalence of early marriage and childbearing will decrease slowly in these countries, especially in Nepal where economic and social development has been slow. In order to improve reproductive health there, health intervention programs focusing on young married women need to be developed and implemented. Innovative programs designed for encouraging newly married couples to wait longer before having the first child should also be considered seriously. Females with no education or very low level of education, residents in Terai region and in less developed regions who tend to marry very early are priority groups for such programs. Such

programs should carry strong messages about the high risks of infant mortality among children born to females under age 20.

Endnotes

1. More detailed analysis of data from the 1996 and earlier surveys have shown, however, that the fertility levels to be even higher (Retherford and Thapa 1999).

2. The Demographic Institute (Lembaga Demografi) of the University of Indonesia conducted the survey under the National Family Planning Coordinating Board (BKKBN). The East-West Center provided technical support, and the Focus on Young Adults/Pathfinder International, USAID, and the World Bank provided funding. Because the survey was designed to provide baseline information for BKKBN/World Bank projects in rural, poorly developed districts, metropolitan Jakarta and the three provincial capitols (Bandung, Semarang, and Surabaya) were excluded.

3. Family Health International conducted the survey with funding from USAID. The East-West Center helped with questionnaire design, and the Valley Research Group of Kathmandu, Nepal conducted the field work (Thapa, Dhital, and Neupane 2001).

4. This report does not examine the mortality of children because large proportions of women in the survey have not had their first child yet and therefore we have a non-representative sample of infants.

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Table 1. Percentages of women and men who are married by selected ages by urban-rural residence, Indonesia 1999 and Nepal 2000

		Women		Men	
	Age	Rural	Urban	Rural	Urban
Indonesia	15	8	2	0	0
	18	38	11	2	1
	20	59	28	7	5
	24	84	55	31	19
Nepal	15	26	17	9	2
	18	56	36	27	8
	20	71	49	44	17
	21	74	56	53	24

Note: The percentages are estimated by the life table method.

Table 2. Among youth who married early (before age 18 for women and before age 20 for men), percentages who report that they married early because their parents wished by gender and urban-rural residence, Indonesia 1999 and Nepal 2000

	Women	Men
Indonesia		
Urban areas	17	0
Rural areas	22	17
Nepal		
Urban areas	63	58
Rural areas	82	83

Table 3. Estimated percentages of women who have their first child by selected ages by urban-rural residence in Indonesia 1999 and Nepal 2000

	Indonesia		Nepal	
Age	Urban	Rural	Urban	Rural
15	0	2	0	0
18	5	16	14	17
20	19	40	31	41

Note: The percentages are estimated by the life table method.

Table 4. Effects (relative risks) of background variables on the pace of marriage estimated by proportional hazard models, Indonesia 1999

	Urban areas		Rural areas	
Independent variables	Men	Women	Men	Women
Year of birth	0.79*	0.90*	0.77*	0.95*
Education: Less than Junior High	1.00	1.00	1.00	1.00
Junior High	0.38*	0.43*	0.74*	0.57*
More than Junior High	0.11*	0.12*	0.29*	0.17*
Province: West Java	1.00	1.00	1.00	1.00
Central Java	0.21*	0.75	0.37*	0.64*
East Java	0.61	0.50*	0.36*	0.72*
Lampung	0.19*	0.47*	0.30*	0.76*
Father's education: None	1.00	1.00	1.00	1.00
Primary	0.73	0.72	0.75	0.80*
More	0.64	0.63	0.42	0.64
Mother's education: None	1.00	1.00	1.00	1.00
Primary	0.50*	0.65*	0.62*	0.58*
More	(a)	0.13*	(a)	0.35*

Notes: * Indicates $p<0.05$.
(a) This variable is not included in the models for men because among men whose mothers had more than primary level education only one (urban man) was married at the time of interview.

Table 5. Estimated effects (relative risks) of background variables on the pace of marriage estimated by proportional hazard models, Nepal 2000

	Urban areas		Rural areas	
Independent variables	Men	Women	Men	Women
Year of birth	0.70*	0.88*	0.88*	0.93*
Education: None	1.00	1.00	1.00	1.00
Primary	0.86	0.76*	0.96	0.63
Junior high	0.42*	0.48*	0.78	0.38*
More	0.18*	0.11*	0.39*	0.24*
Ecological region: Hill	1.00	1.00	1.00	1.00
Terai	2.02*	2.30*	2.73*	2.61*
Development region:				
More developed	1.00	1.00	1.00	1.00
Less developed	(a)	(a)	1.74*	1.50*
Father's education: None	1.00	1.00	1.00	1.00
Primary	1.97*	1.26	0.74	1.00
More	0.91	0.74*	0.50*	0.95
Mother's education: None	1.00	1.00	1.00	1.00
Primary	0.21*	1.14	0.54	0.82
More	0.26*	0.69*	0.23	0.86

Notes: * Indicates $p<0.05$.

(a) This variable is not included in the models for urban residents because all urban areas are considered developed areas.

Table 6. Estimated effects (relative risks) of background variables on the pace of marriage and on the pace of giving first birth estimated by proportional hazard models, Indonesian women 1999

	Urban areas		Rural areas	
Independent variables	Marriage	First birth	Marriage	First birth
Year of birth	0.90*	1.03	0.95*	0.97
Education: Less than Junior High	1.00	1.00	1.00	1.00
Junior High	0.43*	0.59*	0.57*	0.65*
More	0.12*	0.15*	0.17*	0.16*
Province: West Java	1.00	1.00	1.00	1.00
Central Java	0.75	0.73	0.64*	0.61*
East Java	0.50*	0.48*	0.72*	0.66*
Lampung	0.47*	0.56*	0.76*	0.72*
Father's education: None	1.00	1.00	1.00	1.00
Primary	0.72	0.77	0.80*	0.75*
More	0.63	0.41	0.64	0.78
Mother's education: None	1.00	1.00	1.00	1.00
Primary	0.65*	0.43*	0.58*	0.60*
More	0.13*	0.13*	0.35*	0.31*

Notes: * Indicates $p<0.05$.

Table 7. Estimated effects (relative risks) of background variables on the pace of marriage and on the pace of giving first birth estimated by proportional hazard models, Nepalese women 2000

	Urban areas		Rural areas	
Independent variables	Marriage	First birth	Marriage	First birth
Year of birth	0.88*	0.87*	0.93*	0.93*
Education: None	1.00	1.00	1.00	1.00
Primary	0.76*	1.05	0.63	0.99
Junior high	0.48*	0.71*	0.38*	0.65*
More	0.11*	0.15*	0.24*	0.30*
Ecological region: Hill	1.00	1.00	1.00	1.00
Terai	2.30*	1.78*	2.61*	2.13*
Development region:				
More developed	1.00	1.00	1.00	1.00
Less developed	(a)	(a)	1.50*	1.31*
Father's education: None	1.00	1.00	1.00	1.00
Primary	1.26	1.36	1.00	1.06
More	0.74*	0.60*	0.95	1.04
Mother's education: None	1.00	1.00	1.00	1.00
Primary	1.14	1.19	0.82	0.78
More	0.69*	1.21	0.86	1.33

Notes: * Indicates $p<0.05$.

(a) This variable is not included in the models for urban residents because all urban areas are considered developed areas.

Table 8. Distribution of educational attainment of women age 18-22 in Indonesia (1999) and Nepal (2000) by residence

		None	Primary	Junior High	More
Indonesia	Urban	1	24	22	53
	Rural	2	61	20	17
Nepal	Urban	15	8	10	67
	Rural	45	15	13	26

Figure 1. Life-table estimates of percentages who are married by ages 12–23 by sex and urban-rural residence, Indonesia 1999

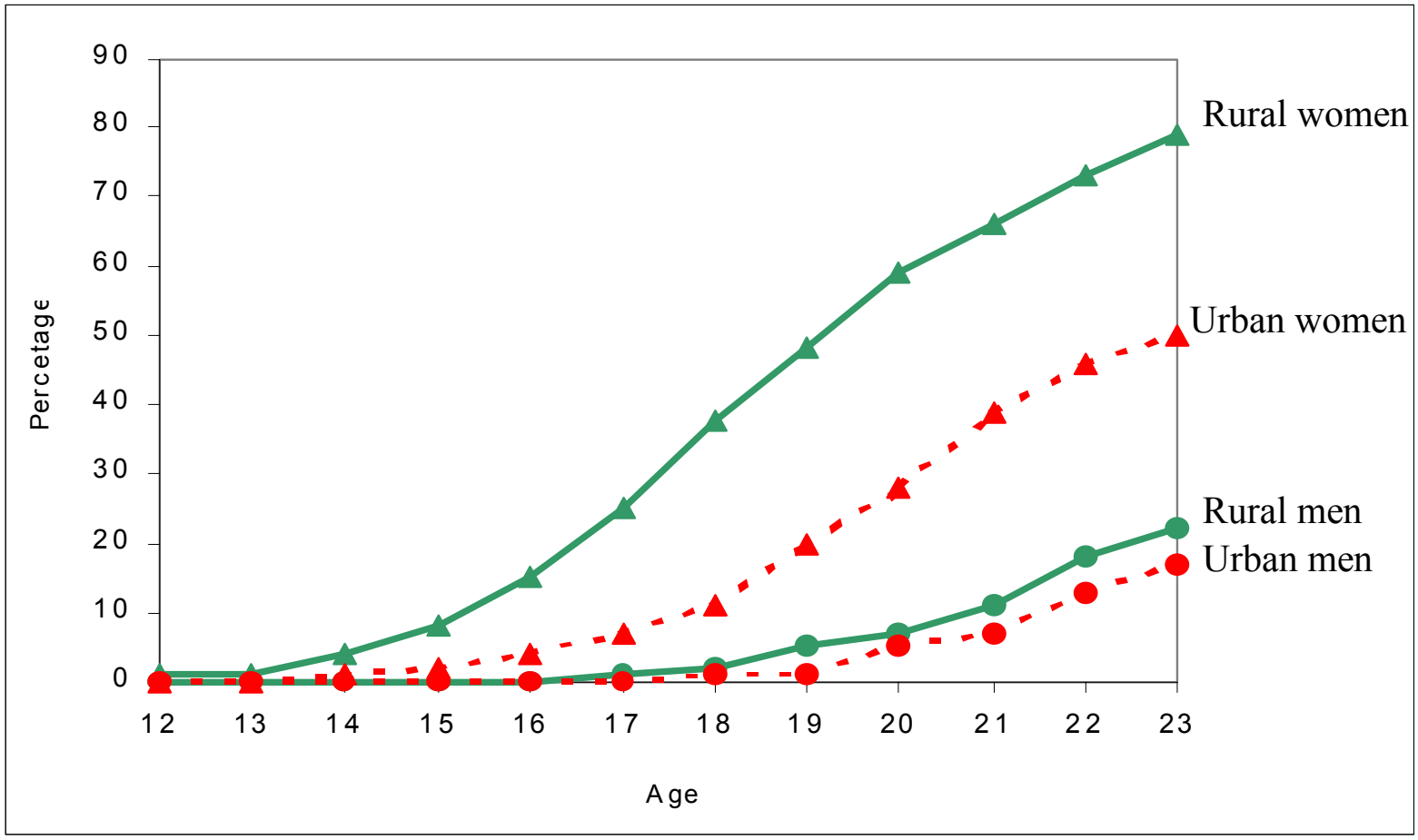

Figure 2. Life-table estimates of percentages who are married by ages 12–21 by sex and urban-rural residence, Nepal 2000

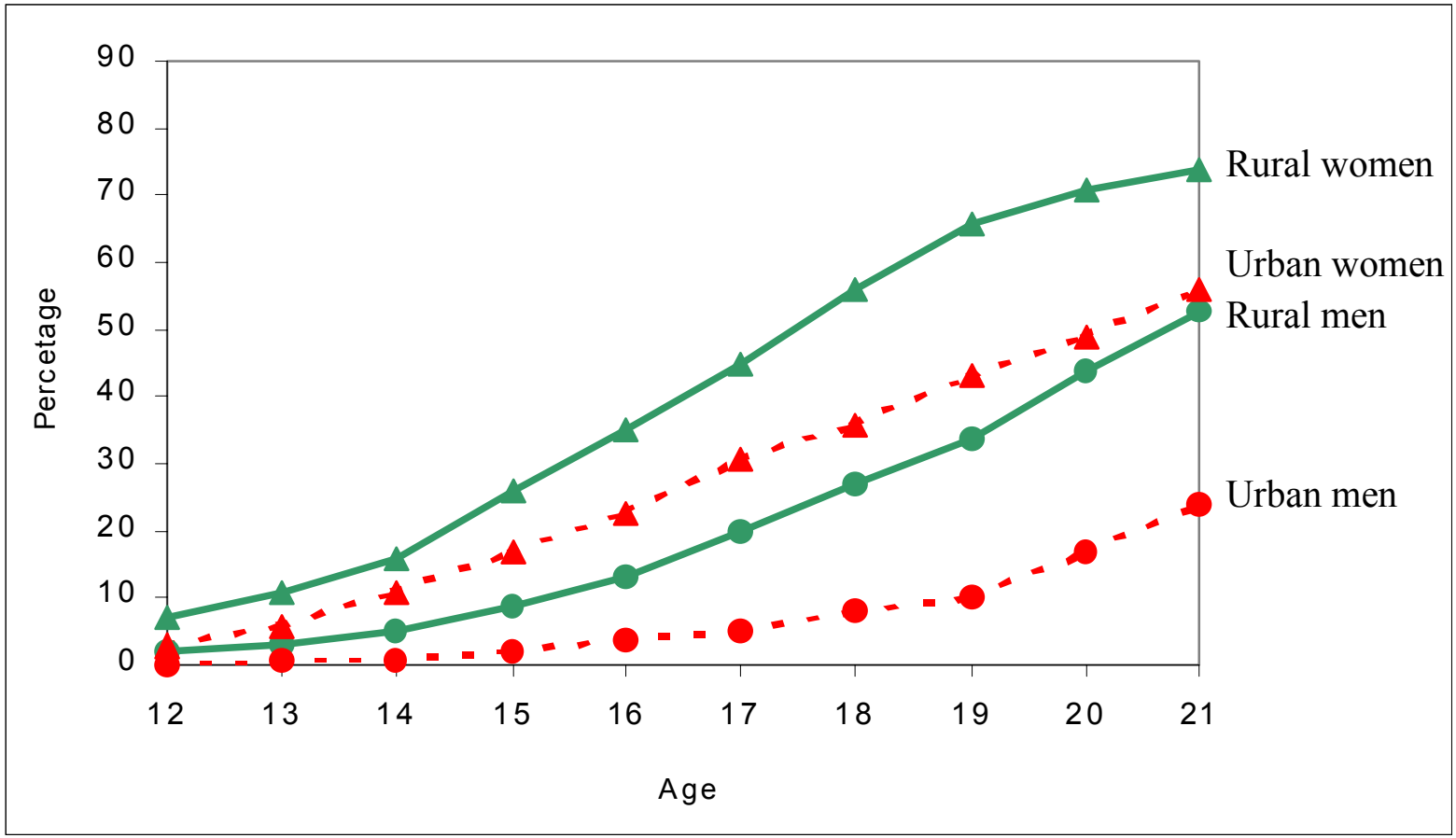

Figure 3. Estimated adjusted percentages of men who marry by age 20 and of women who marry by age 18, by level of education and urban-rural residence, Indonesia 1999

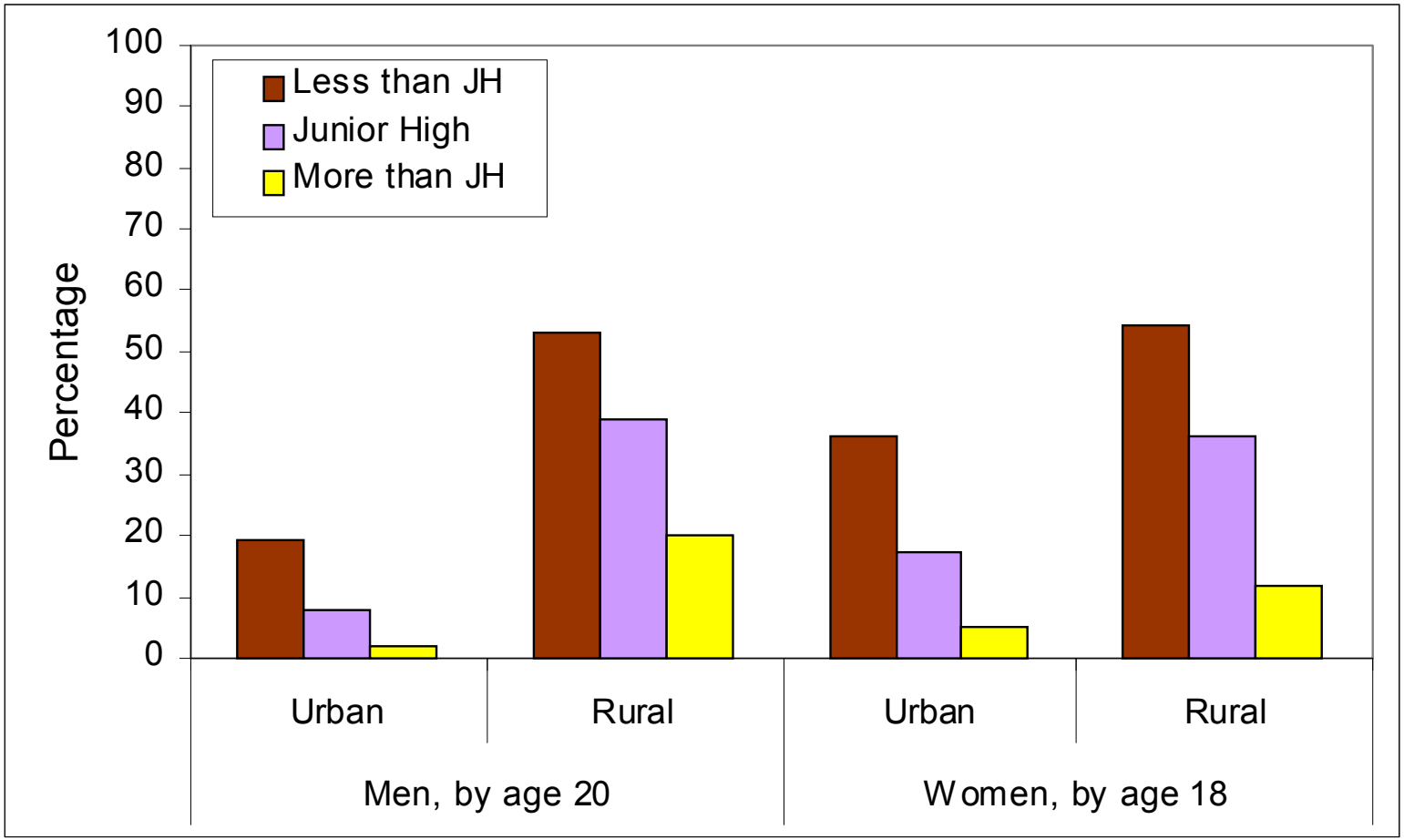

Figure 4. Estimated adjusted percentages of men who marry by age 20 and of women who marry by age 18, by province and urban-rural residence, Indonesia 1999

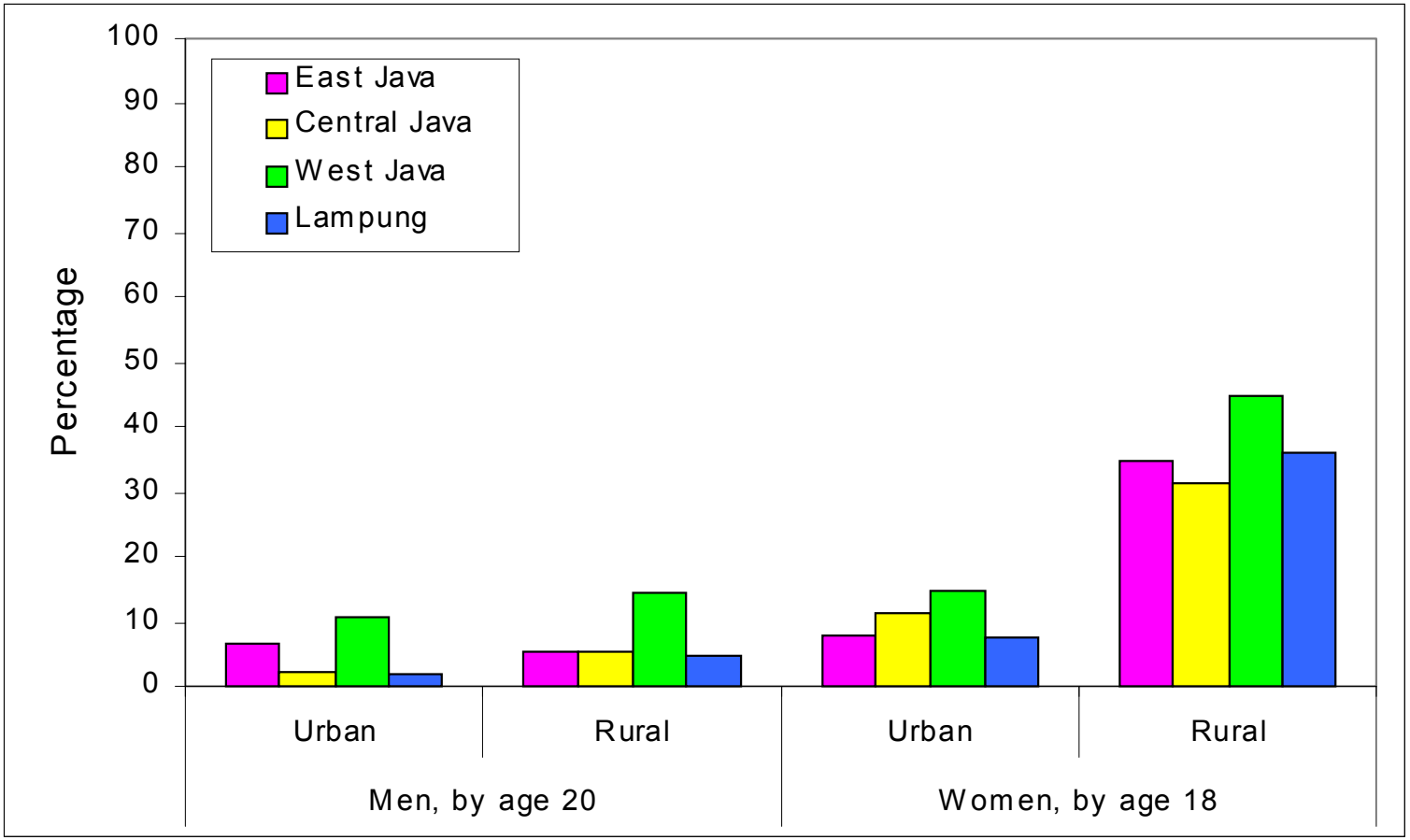

Figure 5. Estimated adjusted percentages of men who marry by age 20 and of women who marry by age 18, by level of education and urban-rural residence, Nepal 2000

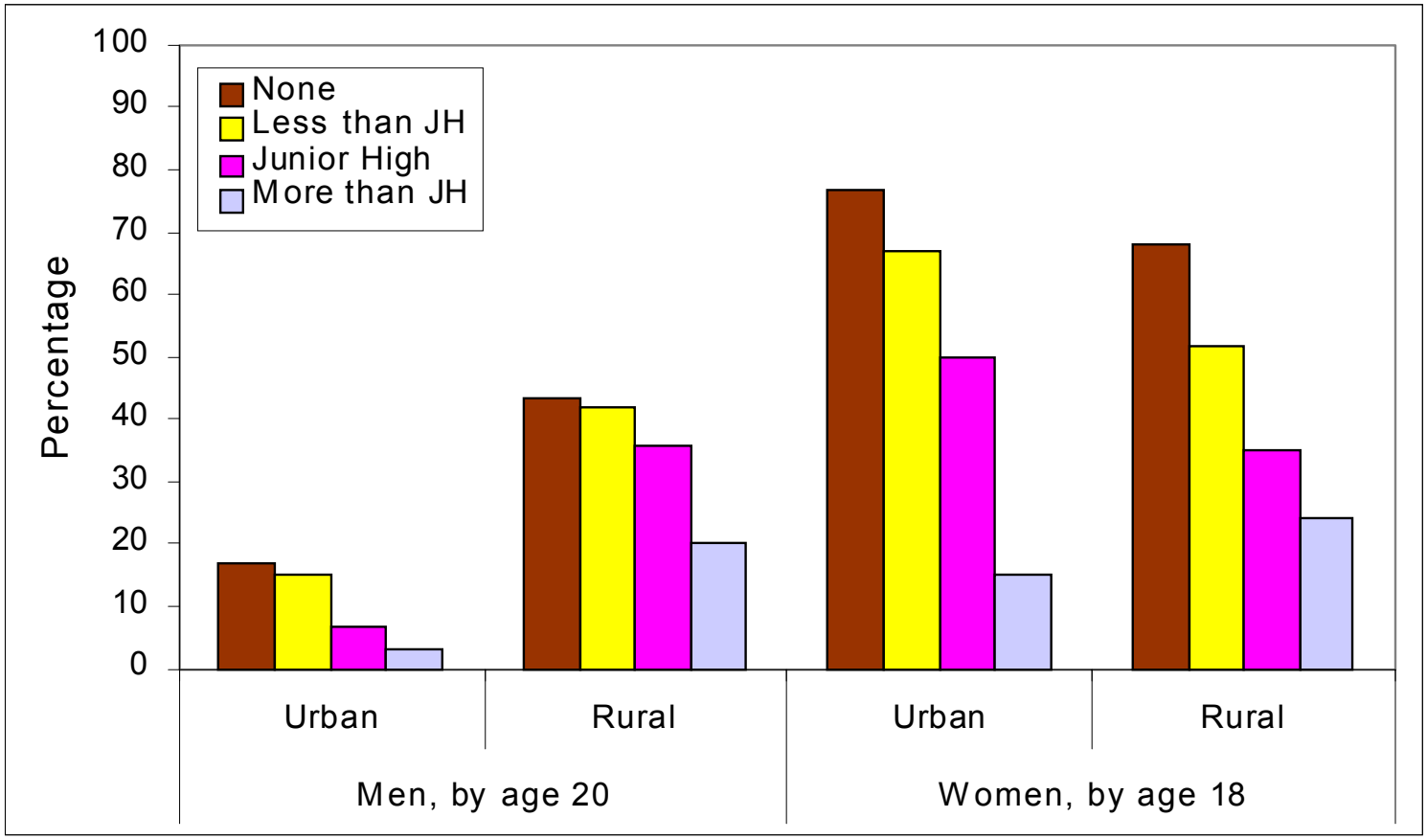

Figure 6. Estimated adjusted percentages of men who marry by age 20 and of women who marry by age 18, by ecological region and urban-rural residence, Nepal 2000

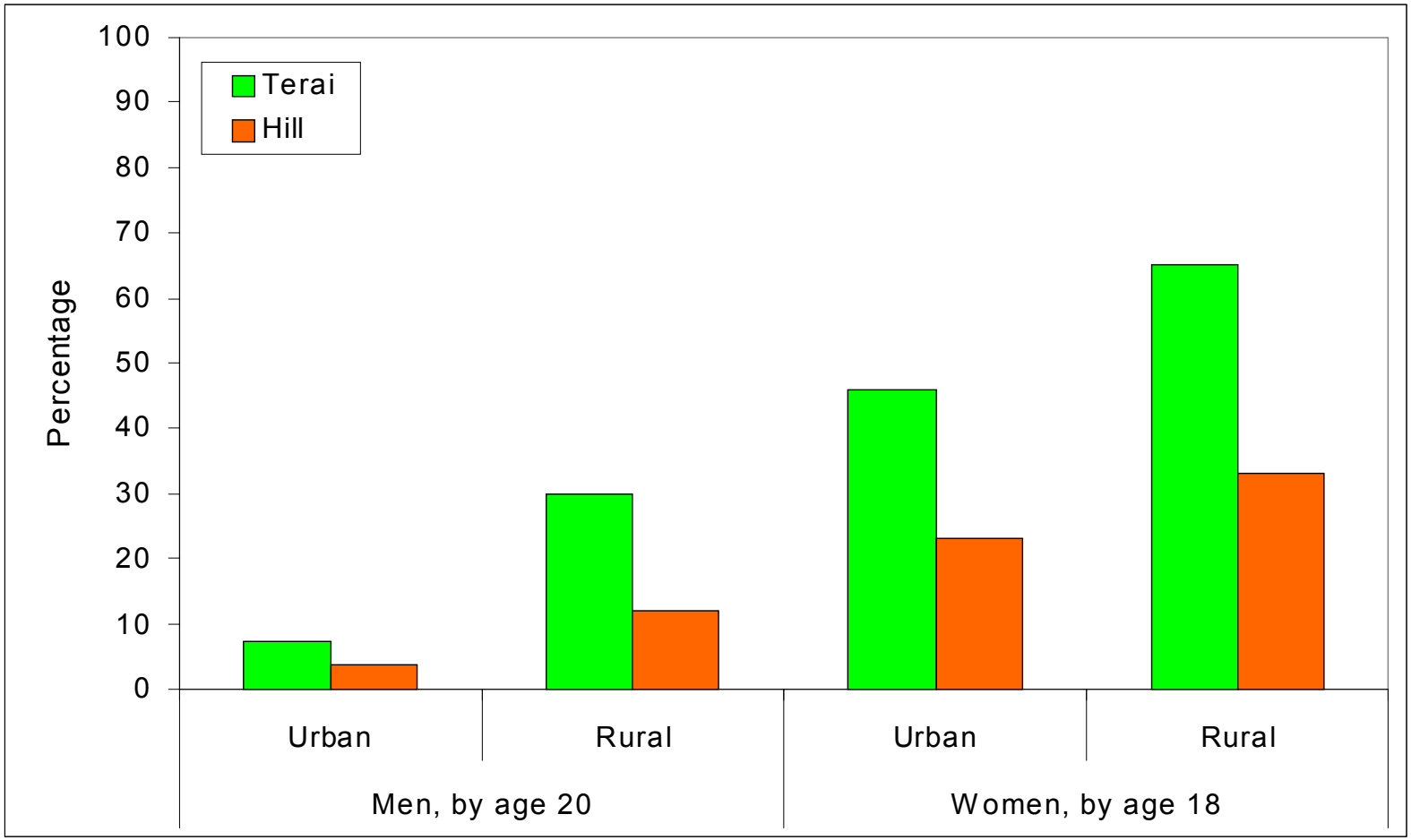

Figure 7. Estimated adjusted percentages of women who marry by age 18 and who give first birth by age 20, by level of education and urban-rural residence, Nepal 2000

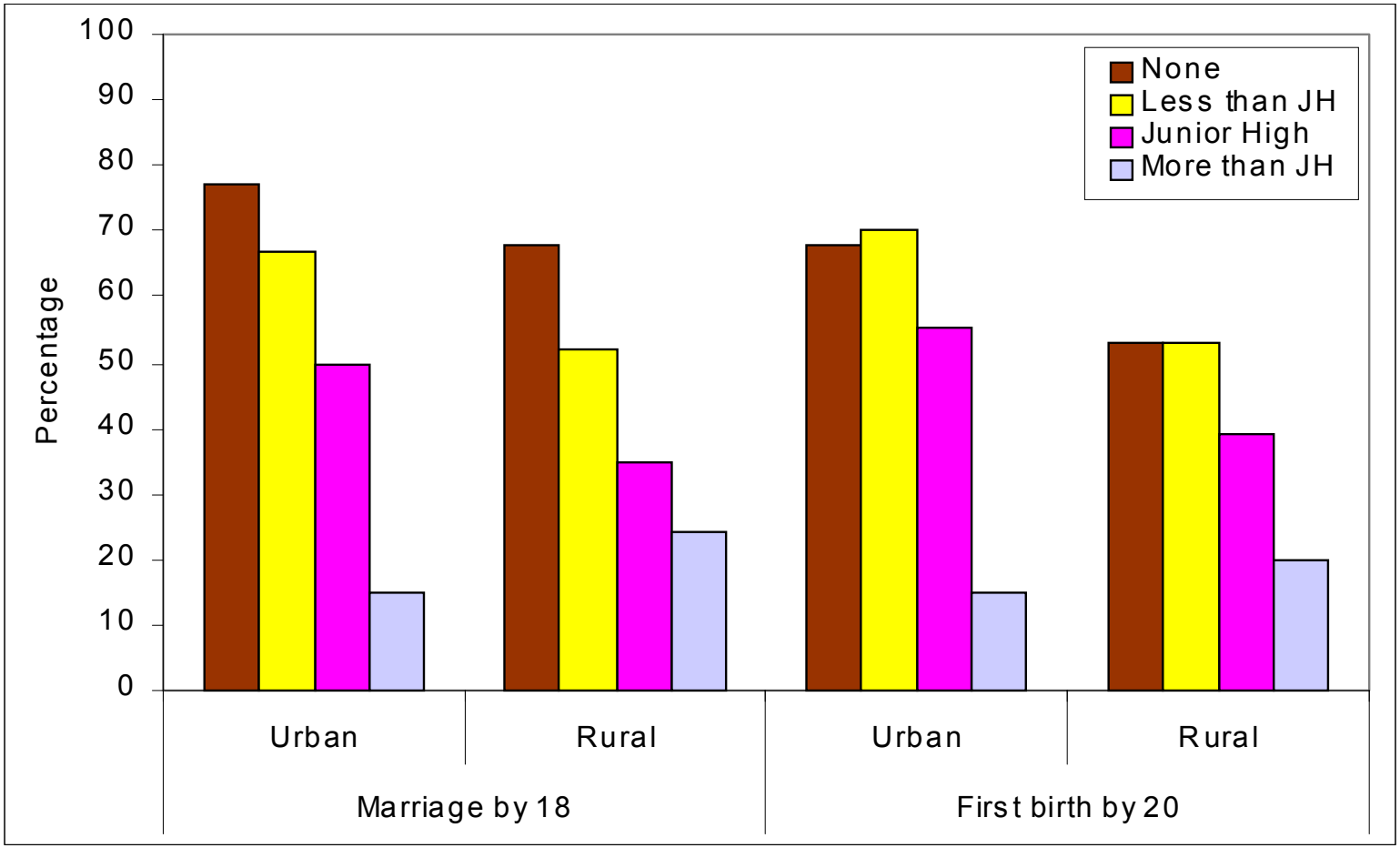

Figure 8. Estimated adjusted percentages of women who marry by age 18 and who give first birth by age 20, by ecological region and urban-rural residence, Nepal 2000