



## Adolescent Marriage and Childbearing in India: Current Situation and Recent Trends

Ann M. Moore, Susheela Singh, Usha Ram, Lisa Remez and Suzette Audam

### HIGHLIGHTS

- Nearly half—45%—of young women in India marry (begin cohabiting with their husband) before age 18, the legal age at marriage for women. A majority, 63%, marry before age 20.
- Reflecting the country's diversity, few women (12%) marry before age 18 in Goa and Himachal Pradesh, while nearly three-fifths (57–61%) do so in Rajasthan, Jharkhand and Bihar. Differences by area of residence are also stark: 28% in urban areas vs. 53% in rural areas.
- Yet, there has been a slow trend toward delaying marriage: Nationally, the proportion of women marrying before their 18th birthday declined by five percentage points from 1993 to 2006, from 50% to 45%.
- Similar trends emerged in the timing of first births. The proportion giving birth before age 18 declined by six percentage points during the same period (from 28% to 22%), and the proportion giving birth before age 20 fell by seven points (from 49% to 42%).
- Contraceptive use remains very low: Just 7% of married 15–19-year-old women use a modern method, and 6%, a traditional method. Current use of modern methods ranges from a high of 18% in Delhi to a low of 2% in Bihar.
- Forty-three percent of married 15–19-year-old women have an unmet need for modern contraception, down considerably from 52% in 1993, but still a very high proportion.
- Unplanned childbearing among adolescents is not uncommon: 14% of all adolescents' recent births were unplanned in 2006, a proportion that remained basically unchanged from that in 1993.
- Adolescent-specific reproductive health services continue to be scarce and inadequate, and targeted toward married adolescents. However, the government's recent enactment of policies to address the information and service needs of adolescents is encouraging.
- Programs to keep girls in school hold promise for decreasing early marriages; since childbearing outside marriage is rare, delays in marriage will go a long way toward reducing adolescent childbearing.



April 2009

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### ACKNOWLEDGMENTS

This report was written by Ann Moore, Susheela Singh and Suzette Audam, all of the Guttmacher Institute; Usha Ram of the International Institute for Population Sciences; and Lisa Remez, independent consultant. The authors thank the following individuals for their insightful comments on an earlier draft: Indu Capoor, Centre for Health Education, Training and Nutrition Awareness (CHETNA); Sunayana Walia and Priya Nanda, International Center for Research on Women (ICRW), New Delhi; Leela Visaria, Gujarat Institute of Development Research; K.G. Santhya and Shireen Jejeebhoy, Population Council, New Delhi; and Kalpana Apte, Family Planning Association of India. For their invaluable input during in-person meetings in 2008, the authors also thank Prakash Doke, Ministry of Health, Maharashtra; staff at the Family Planning Association of India; staff at the Center for Enquiry into Health and Allied Themes (CEHAT); Indu Capoor, CHETNA; ICRW New Delhi staff; S.K. Das, Ministry of Health and Family Welfare; Population Council New Delhi staff; Lester Coutinho, the David and Lucile Packard Foundation, New Delhi; staff at the Ministry of Health and Family Welfare; and Dipa Nag Chowdhury and Poonam Muttreja, The John D. and Catherine T. MacArthur Foundation, New Delhi. We also greatly appreciate the contributions of the other members of the project team—Akinrinola Bankole, Gilda Sedgh and Rubina Hussain (of the Guttmacher Institute) and Fatima Juarez (El Colegio de México)—to the development of this report. We acknowledge Alison Gemmill, Guttmacher Institute, for research assistance.

The research on which this report is based was carried out by the Guttmacher Institute and Usha Ram of the International Institute for Population Sciences with support from The John D. and Catherine T. MacArthur Foundation.

The Guttmacher Institute gratefully acknowledges the general support it receives from individuals and foundations, including major grants from the William and Flora Hewlett Foundation, the David and Lucile Packard Foundation and the Ford Foundation, which undergirds all the Institute's work.

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Suggested citation: Moore AM et al., *Adolescent Marriage and Childbearing in India: Current Situation and Recent Trends*, New York: Guttmacher Institute, 2009.

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# Background

India's population of 1.3 billion people accounts for roughly one-sixth of all people on the planet. The inhabitants of the world's largest democracy speak myriad languages, have many different cultures and observe a variety of religions. Many of India's 29 states and six Union Territories are modernizing more rapidly than was ever thought possible, even as vast parts of the country remain deeply impoverished. Despite the fast-paced economic transformation brought on by globalization, four-fifths of Indians still live on less than US\$2 a day (including one-third who live in extreme poverty, on US\$1 a day).<sup>1</sup> Moreover, even though the caste system has been officially abolished, it continues to play a defining role in the society.

The status of the country's reproductive health reflects the socioeconomic diversity of its states. For example, the average number of children women have over their lifetime, one of the primary indicators of their reproductive health, is comfortably below the level of fertility needed to replace the population, at 1.8–1.9 lifetime births, in several states (Andhra Pradesh, Kerala and Tamil Nadu in the South; Goa in the West; and Himachal Pradesh in the North).<sup>2</sup> (The states comprising each of the country's six geographic regions are shown in the table on page 4.) Yet the fertility rate remains at nearly four children per woman in the first and third most populous states, Uttar Pradesh and Bihar, respectively.

When today's young women begin having children, how many they have and the extent to which they are

able to act on their reproductive preferences will have an important influence on the direction and pace of the country's development. Social norms governing how young people start their sexual and married lives are currently in flux in many areas of the country. If young women in India are to play a more active role in their country's social and economic development, they need greater autonomy along with education and training. These needs often go unmet, however, if teenage women assume the adult responsibilities of being a wife and mother.

In this report, we present a broad descriptive overview of the current status and recent changes in indicators of early marriage and childbearing in India. We do so with an eye toward helping policymakers and program planners by assessing the needs of adolescents for information and services, and the extent to which those needs are being met. (In this report, we use the term *adolescents* to refer to 15–19-year-olds.) We analyze trends using data from the three most recent National Family Health Surveys (NFHS), which were conducted in 1992–1993, 1998–1999 and 2005–2006, as described in “Data Sources.” When needed, we supplement these data with projections from the census and published studies. We present differences by state because such information is relevant and useful for planning purposes; when appropriate, we also comment on similarities and differences within and across the six major regions of the country.

**Selected demographic and reproductive health variables among women of childbearing age, by region, India, 2005–2006**

Region (and states)	Among women 15–49					Among women 20–24, % who marry before	
	Total fertility rate (lifetime births per woman)	% with ≥6 yrs. education	% living in rural areas	% using a modern method*	% of women whose most recent birth† was attended by a professional	Age 18	Age 20
<b>North</b> (Delhi, Haryana, Himachal Pradesh, Jammu/Kashmir, Punjab, Rajasthan and Uttarakhand)	2.64	53.0	63.0	54.9	54.0	26.8	44.9
<b>Central</b> (Chhattisgarh, Madhya Pradesh and Uttar Pradesh)	3.53	33.5	73.9	39.5	32.9	52.9	72.5
<b>East</b> (Bihar, Jharkhand, Orissa and West Bengal)	2.99	36.9	76.3	40.9	37.2	51.8	70.1
<b>Northeast</b> (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura)	2.61	57.3	71.5	32.1	43.2	26.6	41.9
<b>West</b> (Goa, Gujarat and Maharashtra)	2.21	63.5	49.8	57.7	74.2	32.4	50.9
<b>South</b> (Andhra Pradesh, Karnataka, Kerala and Tamil Nadu)	1.88	54.9	60.3	62.7	81.2	37.1	54.0
*Among married women; modern methods include the pill, IUD, injectables, condoms (male and female), sterilization (male and female), the diaphragm, foam and jelly. †Among births in the past three years. <i>Source:</i> reference 2.							

# Data Sources

This report is largely based on special tabulations of data from three NFHS—those conducted in 1992–1993 (NFHS-1),<sup>3</sup> 1998–1999 (NFHS-2)<sup>4</sup> and 2005–2006 (NFHS-3)<sup>2</sup>; for brevity, we refer to these surveys as having been conducted in the single year wherein the bulk of the fieldwork occurred (1993, 1999 and 2006, respectively). The surveys were designed to collect quality data on population and health through indicators of fertility, family planning, maternal and child health, nutrition, HIV/AIDS and socioeconomic conditions. Unless specified otherwise, all data mentioned in the text are special tabulations of data from these surveys and are presented in detailed form in the appendix tables.

The nationally representative samples used in each of the three surveys permit estimates at the national and state levels. In analyses, we organized the states according to the six standard geographic regions used in the NFHS: North, Central, East, Northeast, West and South (see the table for the states comprising each region). We calculated regional averages for a few key indicators of women’s reproductive health to assess the extent to which these averages yielded “expected” outcomes based on a region’s average level of socioeconomic development. The results were mixed, reflecting the diversity across the individual states within regions, especially in the North and Northeast. We comment in the text when regional patterns (or lack thereof) are especially noteworthy.

For example, for several indicators—namely, total fertility rate, rural residence, current use of modern methods of contraception and having a professional attendant at delivery—the regional averages followed “expected” patterns, with the more developed South and West consistently having the most favorable outcomes and the less developed Central, East and Northeast, the least favorable ones. Education and early marriage (i.e., the onset of cohabitation) deviated from this pattern, however: Women in the Northeast attained basically the same level of education as those in the more developed South (57% and 55%, respectively, had had at least six years). And women in the Northeast and the North, a more mixed region, unexpectedly, were the least likely to have married early (before the legal age of 18) and at any time during adolescence. In sum, the regional designations provide

some useful information to situate states geographically and contextually, but state-level analyses remain essential, given the substantial variation among states within each region.

Our analyses focus primarily on adolescents, that is, 15–19-year-olds. Although the first of the three surveys included 13- and 14-year-old women, for comparability, these youngest women are excluded from the analyses presented here. When needed, we base our data on 20–24-year-olds or, in a few cases, 30–34-year-olds to ensure that women would have finished their years of exposure to the behavior being studied. The first two surveys included ever-married women only, whereas the third interviewed women of all marital statuses. The numbers of ever-married 15–19-year-olds who were interviewed were 7,815 in 1993, 7,041 in 1999 and 4,911 in 2006. In addition, 19,044 never-married adolescent women were also included in the 2006 sample. Because many young women marry before they start living with their husbands, we define *marriage* as the onset of cohabitation to more precisely capture women’s exposure to sexual and reproductive risks; therefore, in this report, *married women* refers to women who are currently cohabiting with their husband.

All data presented in the text, tables and figures are weighted, using adjusted weights to account for unmarried women from the 1993 and 1999 surveys, where relevant. Because of space constraints, the figures illustrating time trends show just a handful of states that were selected to represent the three possible outcomes—increases, decreases and no change over time. The exception is education, the only indicator for which no state showed a decrease over time.

In general, the questionnaires were comparable across the three surveys. There were some differences in where the surveys were administered, however. Between the 1999 and 2006 surveys, three new states—Jharkhand, Chhattisgarh and Uttarakhand—were formed from Bihar, Madhya Pradesh and Uttar Pradesh, respectively. The 1999 NFHS contains sufficiently detailed geographic information to allow mapping of its data to the 2006 state definitions, which enables direct state comparisons. However, the 1993 NFHS lacks the same level of geo-

graphic specificity and therefore cannot be mapped similarly. Thus, to ensure comparability, we calculate trends in these six states—the original states of Bihar, Madhya Pradesh and Uttar Pradesh, together with their split-off parts of Jharkhand, Chhattisgarh and Uttarakhand—from a later start point than for other states, namely from 1999 through 2006, rather than from 1993 through 2006.

Furthermore, the first NFHS sampled only the Jammu region of the state of Jammu/Kashmir, whereas the later two represented the entire state. The state thus lacks comparable data between the first and later two surveys so, as for the six states affected by changes in definition just mentioned, we assess trends for Jammu/Kashmir based on the later two surveys only. It should be kept in mind that time trends for these seven states cover roughly half the period used to assess trends for all other states.

Because of small sample sizes, six small northeastern states—Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura—have been combined in our analysis. As the small state of Sikkim was not included in the 1993 NFHS, there is a small degree of noncomparability across the three surveys in this group of states. Moreover, because the NFHS does not survey the Union Territories, those are also omitted from our analysis.

Other sources of data include population projections from the National Commission on Population and census data. We also consulted several published reports and official policy documents. For the most part, the policy and program sections of this report derive largely from these sources. When feasible, we add some impressions on how well policies and programs may be working gleaned from 12 interviews with 22 key informants from governmental and nongovernmental agencies in India. The informal interviews were conducted in India from February 25 through March 3, 2008.

# A Snapshot of Adolescent Women

Adolescent women comprise a sizable proportion of India's total population. Although these young women have much in common, the characteristics that influence the likelihood of becoming a wife and mother at a young age—their family's values and socioeconomic status and their own goals and expectations, which are shaped by their educational attainment and the extent of their exposure to the mass media—vary substantially according to whether they live in urban or rural areas and where in the country they live.

There are more adolescents in India today than ever before. Near the beginning of this report's study period, 1992, India had 38 million adolescent women; by 2005, that number had grown by nearly half, to 50.5 million (Appendix Table 1). The three states with the largest female adolescent populations—Andhra Pradesh, Maharashtra and Uttar Pradesh—together account for one-third of all adolescent women in the country, with nearly 16% of the total living in Uttar Pradesh alone.

Within most states, 15–19-year-old women now make up at least 10% of the state's population.<sup>5</sup> An earlier start to a general decline in fertility is evident in the three low-fertility states of Goa, Kerala and Tamil Nadu, as adolescent women account for a smaller proportion of the total state population in those three states (8–9%) than they do elsewhere (10–13%).

Young women's marital and reproductive behaviors are conditioned by where they live, and most adolescents still live in rural areas. Fewer than three in 10 women aged 15–19 currently reside in urban areas (Appendix Table 1). That proportion has increased, on average for the country as a whole, by an annual rate of about 1% (i.e., the percentage residing in urban areas rose from 25% in 1992 to 28% in 2005). However, the pace of urbanization has varied from state to state. It was most rapid in the northeastern state of Arunachal Pradesh, where the proportion of adolescent women residing in urban areas increased by 6% each year.

As expected, urban adolescent women are generally better off economically than their rural counterparts: Only 27% of the former group live in households in the lowest three wealth quintiles, compared with 79% of the latter group (Appendix Table 1). As of 2006, 28% of all 15–19-year-old women were members of scheduled

tribes or castes, groups that have historically been socioeconomically disadvantaged; the proportion was higher in rural areas than in urban areas (31% vs. 22%). However, such membership no longer necessarily correlates with socioeconomic disadvantage, since affirmative action policies designed to address caste-based discrimination appear to have had a measure of success in many areas.<sup>6</sup> In addition, because the complex caste designations and definitions vary across states, and some states have reclassified segments of their population, the proportions belonging to a scheduled tribe or caste should be interpreted with caution.

As India continues to experience record economic growth, television is replacing radio as the mass medium with the more extensive reach. Nationally, the proportion of ever-married\* adolescent women who watch television weekly nearly doubled from 1993 to 2006 (from 23% to 40%; Appendix Table 1). Although far greater proportionate increases occurred in rural areas, urban adolescent women are currently more than twice as likely as their rural peers to watch television at least once a week (73% vs. 33%). Radio listening, on the other hand, declined from 41% to 28% overall, but rural women's exposure to radio fell much less steeply than urban women's. Taken together, these patterns indicate that both radio and television are still important vehicles for reaching rural adolescent women. Moreover, regardless of content, exposure to cable television per se, as opposed to only broadcast television, has been significantly associated with factors that enhance women's status, such as lower fertility, reduced preference for sons and increased autonomy.<sup>7</sup> Although the mechanisms of these relationships are difficult to identify and measure, there is enormous potential to convey reproductive health messages through entertainment vehicles, especially through soap operas, as has been demonstrated by the family planning content in the recent radio serial *Taru* and in earlier television serials, such as *Hum Raahi* and *Hum Log*.<sup>8</sup>

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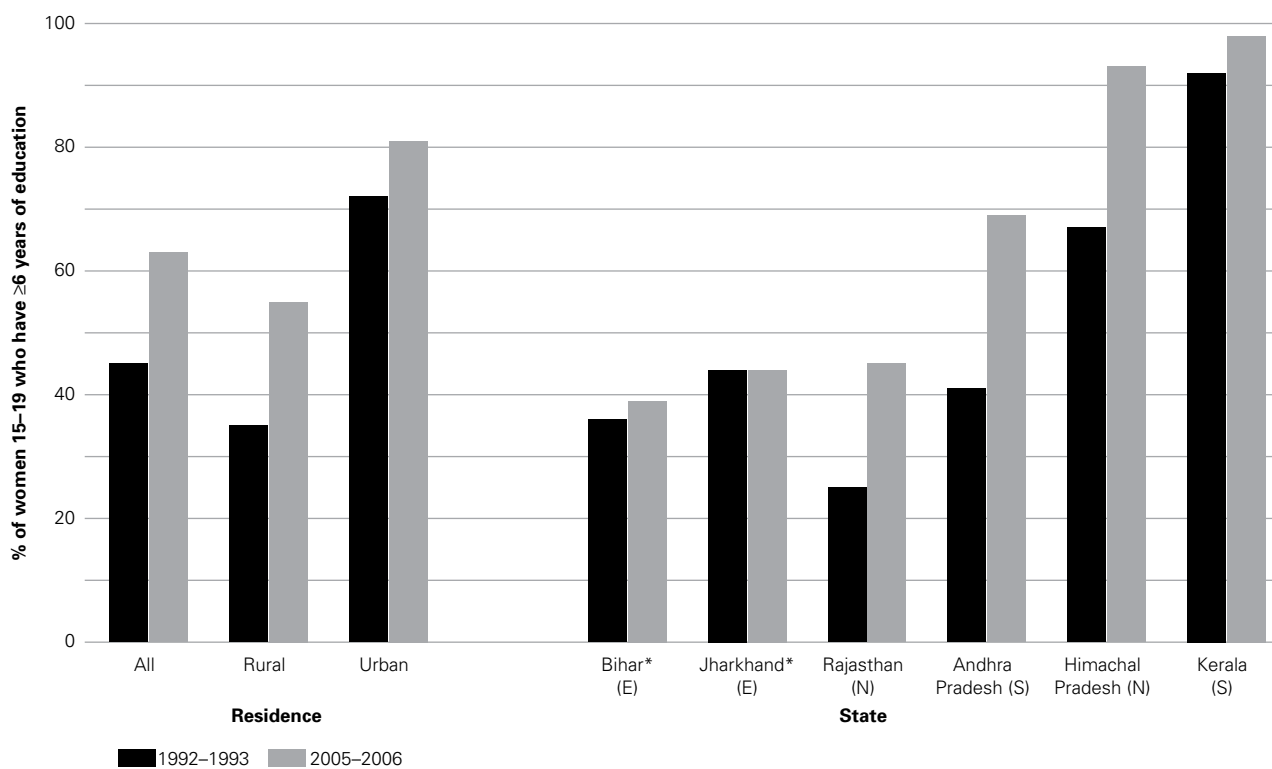
\*To ensure comparability on these mass media data, we restrict the denominator here to ever-married adolescent women, which was the only sample group that all three surveys had in common; never-married adolescent women were interviewed only in the 2005–2006 survey (NFHS-3).

Education enhances women’s ability to interpret and act on those messages. Throughout the world, higher levels of educational attainment are consistently associated with higher status for women, related delays in marriage and desire for and achievement of smaller families.<sup>9</sup> Over the past decade and a half, Indian women have achieved substantial educational gains: Nationally, 63% of 15–19-year-old women had at least six years of education in 2006, compared with just 45% in 1993 (Figure 1). The increase was proportionately even greater in rural areas, where the starting point was far lower; the proportion of women aged 15–19 having at least six years of schooling rose from 35% to 55% in rural areas, compared with an increase from 72% to 81% in urban areas.

Much remains to be done, however, to enable India and its individual states to meet the second Millennium Development Goal of universal primary school education.<sup>10</sup> Currently, fewer than half of adolescent women in Bihar and Jharkhand in the East, and in Rajasthan in the North, have been to school for at least six years (Appendix Table

1). On the other end of the spectrum, Goa in the West, Himachal Pradesh in the North and Kerala in the South had already virtually met the primary school completion goal for 2015 as of 2006, with 92–98% of 15–19-year-old women receiving this much schooling.

**FIGURE 1. Change over time in adolescent women’s education, India overall and by area of residence, and for selected states to show range in trends**



*Note:* Letters after states indicate regions—E=East, N=North and S=South. \*Because of a change in state definition, trend is measured from 1998–1999 to 2005–2006. *Sources:* references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.



# Key Marital and Reproductive Findings

Adolescence in many parts of the world is a time of gradual transition from childhood to adulthood, but for a high proportion of Indian girls, this stage of their lives is very short, since many go directly from child to wife and mother. Because the status of women and their ability to realize their full potential is intricately linked with their marital and reproductive behavior, understanding how and when girls marry and begin their families is essential to laying the groundwork for change.

## Early Marriage

In India, the persistence of early marriage reinforces women's low status and social isolation, and such marriages almost always force girls to prematurely end their education to assume household responsibilities. Consequently, early marriage reduces women's employment prospects as well. Marriage also usually leads directly to childbearing, given pressure, largely exerted by mothers-in-law through their sons, for a young bride to have a baby relatively quickly.<sup>11</sup> Adolescents have an especially difficult time countering these pressures because of their low position in the family, regardless of their education level. In addition, marriage in and of itself offers little protection to adolescent women who lack the autonomy to decide on sex and contraceptive use with older partners (grooms are six years older than brides on average<sup>2</sup> and age differences are significantly greater for child brides<sup>12</sup>). Marriage also puts adolescents at heightened risk of unwanted pregnancies and sexually transmitted infections (STIs).<sup>13,14</sup>

In accordance with prevailing practices in many areas (especially in poorer, more traditional states) where child marriages are a mark of prestige,<sup>3</sup> girls are promised in marriage yet may not live with their husbands until they have reached puberty and the marriage is consecrated through the ceremony of *gauna*.<sup>2</sup> The practice is closely tied to widespread norms aimed at preserving female chastity and preventing premarital sex, and young women typically have little say in their parents' decision on when and whom they marry.<sup>15</sup> One consequence of this tradition is the relative rarity of premarital sex. Even when we define the timing of marriage as the onset of cohabitation, marriage preceded first sex by a few months in 2006: Among 25–29-year-olds, the median age at first cohabita-

tion was 17.8 years, whereas the median age at first sex was 18.0.<sup>2</sup>

Very few reliable data are available on the sensitive topic of early premarital sex in India. Obtaining valid information about such a highly taboo subject is especially difficult in the Indian context, where data from face-to-face interviews have been shown to seriously underestimate young unmarried people's full sexual experiences.<sup>16</sup> However, this absence of good data does not necessarily mean that premarital sex is nonexistent. In fact, one recent, large-scale study conducted in six states\* found levels of sexual experience ranging from 1% to 8% among unmarried 15–24-year-old women.<sup>17–22</sup> Yet not all first experiences are consensual: According to a small-scale study of premarital, romantic relationships conducted in Pune district, Maharashtra, 9% of young adult women had been forced at first sex with any partner and an additional 30% were persuaded after initially refusing first sex with any partner (which can be interpreted as pressure or coercion).<sup>23</sup>

Much more is known about early marriage than about early sex. Nearly half—45%—of Indian women aged 20–24† marry‡ before their 18th birthday (Figure 2), in clear

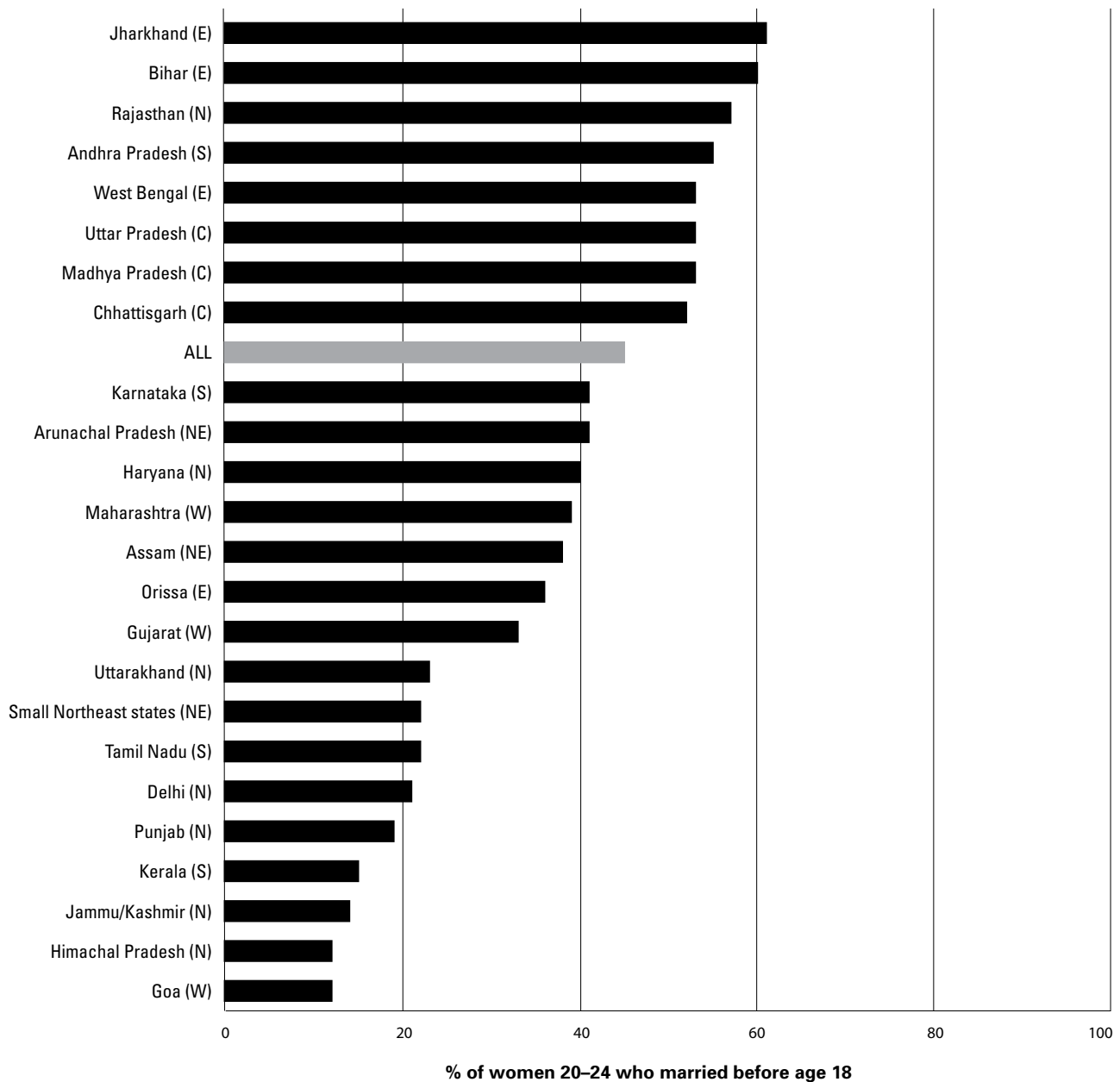
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\*Andhra Pradesh, Bihar, Jharkhand, Maharashtra, Rajasthan and Tamil Nadu.

†To capture the current demographic trend among adolescents, we base the proportion who marry during adolescence on 20–24-year-olds, the youngest age-group to have completed their exposure to the "risk" of marriage before age 20. By contrast, to ensure that at least 50% of the sample (the definition of a median) had been exposed to the event being measured and obtain estimates for all states, including those where women marry much later, we calculate the median age at marriage among 25–29-year-olds (except in Goa, where the median ages at first marriage and first birth are based on 30–34-year-olds because fewer than half of Goan women in most study years had experienced the events measured before reaching the beginning of the 25–29 age-group).

‡Throughout this report, we define marriage as the time when a couple starts living together, as opposed to the time when the relationship is traditionally formalized, which can occur well before puberty. The onset of cohabitation, or *gauna*, more appropriately assesses when women are first exposed to sexual and reproductive risks. As marriage traditionally precedes cohabitation in many states, the percentage of women who officially marry before age 18 is slightly higher than the percentage who cohabit before that age (47% vs. 45%; source: reference 2). The interval separating the two events appears to be decreasing over time.

**FIGURE 2. Proportion of 20–24-year-old women who married before age 18, India overall and all states, 2006**



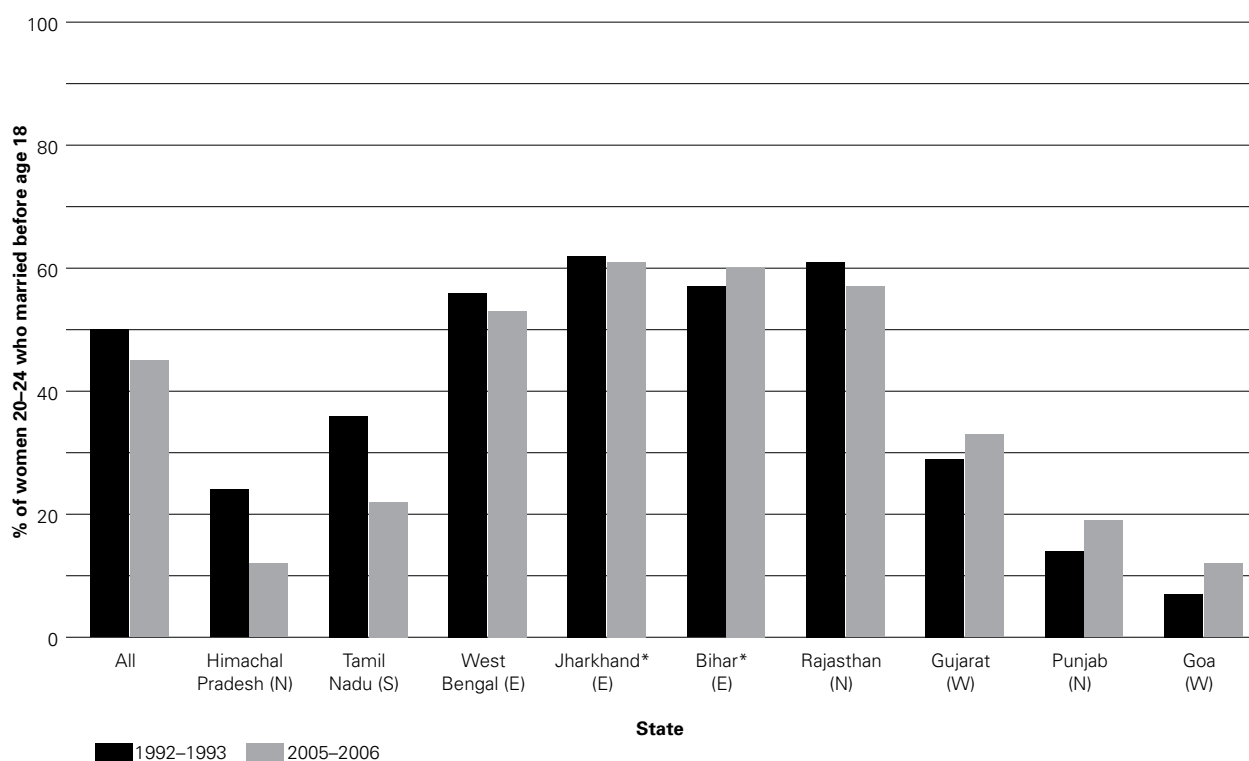
*Note:* Letters after states indicate regions—C=Central, E=East, N=North, NE=Northeast, S=South and W=West. *Source:* reference 2 and special tabulations of the 2005–2006 National Family Health Survey.

violation of the nation’s official legal age at marriage for women of 18.<sup>24</sup> The proportion marrying that early is as high as 60–61% in the states of Bihar and Jharkhand, but as low as 12% in the states of Himachal Pradesh and Goa. These are the same states noted earlier as having the lowest and highest educational levels, respectively, which suggests an inverse relationship between education and early marriage. Although all three states in the Central re-

gion have consistently higher-than-average proportions of women marrying as minors (52–53%), the pattern within most other regions varies widely by state (e.g., in the South, the proportion ranges from 15% in Kerala to 55% in Andhra Pradesh).

Among today’s 20–24-year-olds, marrying as a minor (as opposed to as an adult) has been shown to be significantly associated with higher odds of having at

**FIGURE 3. Change over time in the proportion who marry before age 18, all India and selected states to show range in trends**



*Note:* Letters after states indicate regions—C=Central, E=East, N=North, S=South and W=West. \*Because of a change in state definition, trend is measured from 1998–1999 to 2005–2006. *Sources:* references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

least three children, of having poorly spaced births and of relying on sterilization as a means of contraception.<sup>25</sup> Considering the further evidence that marriage before age 18 constrains adolescent women’s opportunities to obtain higher education and employment, and severely restricts their autonomy,<sup>12,26</sup> the proportion marrying before that age declined much too slowly over the past 13 years: Among 20–24-year-olds, marriage as a minor fell by just five percentage points, or about 11% over this period, going from 50% of all Indian women in 1993 to 45% in 2006 (Figure 3).

Several individual state trends are notable. In Himachal Pradesh, for example, the proportion of women marrying by their 18th birthday fell by half during that period, dropping from an already low level of 24% to 12%; the decline was also large in Tamil Nadu, from 36% to 22%. However, a few states saw increases in early marriage including Punjab (from 14% to 19%), Goa (from 7% to 12%) and Gujarat (from 29% to 33%). The proportion marrying before age 18 remained basically unchanged in several large states where those proportions were already among

the highest in the country, at roughly three-fifths, at their individual starting points (1999 in Bihar and Jharkhand and 1993 in Rajasthan, respectively).

The state patterns are basically the same when we look at change over time in marriage during the whole of adolescence (i.e., before age 20), which fell slightly in the country overall (from 70% to 63%, a drop of seven percentage points; Appendix Table 2). Trends in women’s median age at first marriage confirm these findings: At the national level, it rose from 17.2 years to 17.8 years, only a seven-month increase, between 1993 and 2006. On the state end of the spectrum, women in Goa now marry at a median age of 25.2 years. Encouragingly, the median age at marriage rose by nearly two years in the short time between 1999 and 2006 in Chhattisgarh (where it started at a very young age of 15.5); it also rose two years over the full 13-year time period in Himachal Pradesh. Unfortunately, there was little to no recent change in the age at which adolescent women marry in such large states as Bihar, Jharkhand and Rajasthan, where the median remains below age 17.

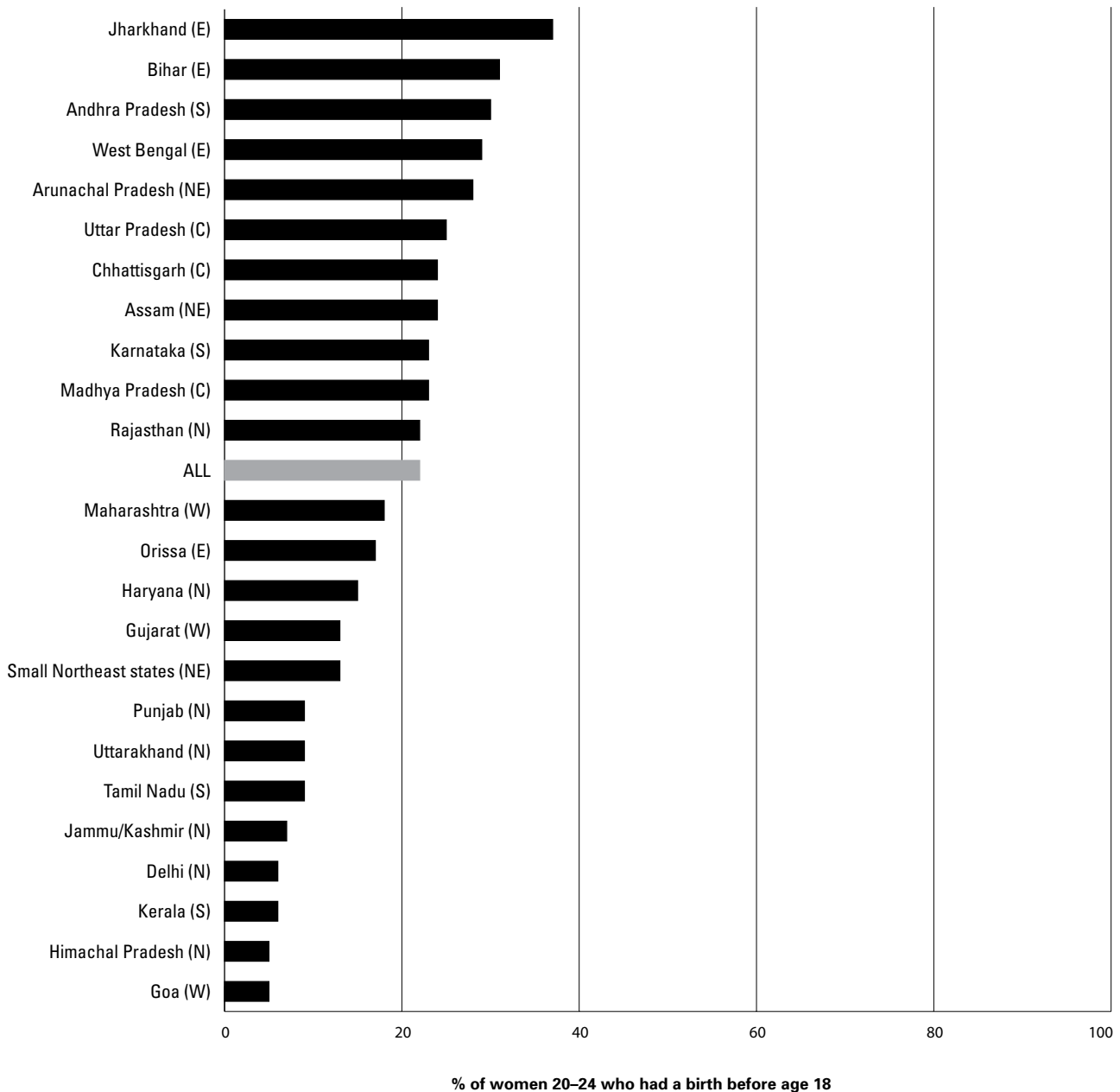
## Early Childbearing

In India, the transition from wife to mother usually occurs about two years after marriage, as young couples are expected to have their first child soon after starting their life together. Even if some of the potential social consequences of early childbearing can be mitigated by strong familial and cultural support, the physical and nutritional demands of pregnancy on still-maturing and inadequately nourished bodies can endanger adolescents' health and increase

the risk that their children will be sick or die in infancy.<sup>9,27</sup> To make matters worse, Indian adolescents aged 18 or younger are significantly less likely than older women to receive any skilled prenatal or delivery care.<sup>28</sup>

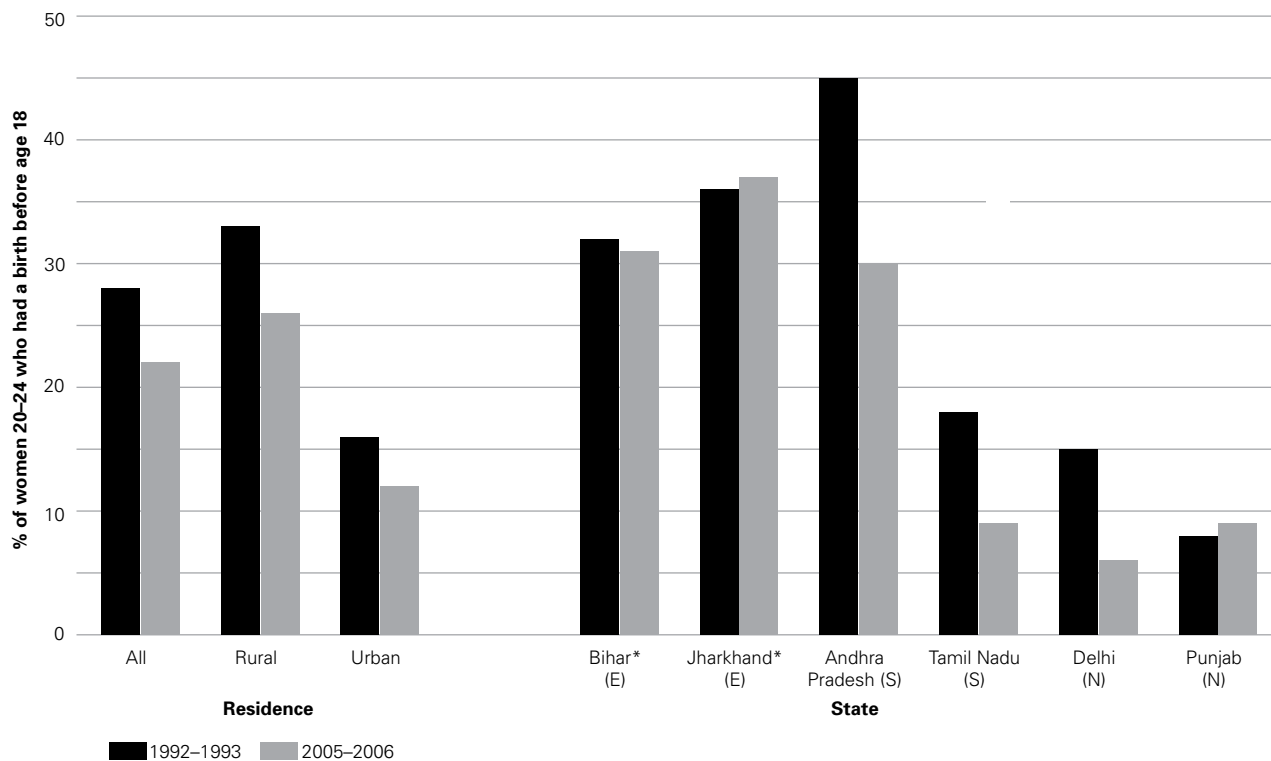
As of 2006, roughly 8% of all Indian women 20–24 years old became mothers before age 16, when the health impact is even greater (Appendix Table 2). This proportion was somewhat higher (at 11–12%) in Andhra Pradesh, Arunachal Pradesh, Bihar, Karnataka and West

**FIGURE 4. Proportion of women aged 20–24 who gave birth before age 18, all India and all states, 2006**



*Note:* Letters after states indicate regions—C=Central, E=East, N=North, NE=Northeast, S=South and W=West. *Source:* reference 2 and special tabulations of the 2005–2006 National Family Health Survey.

**FIGURE 5. Change over time in births before age 18, India overall and by area of residence, and for selected states to show range in trends**



*Note:* Letters after states indicate regions—E= East, N=North, NE=Northeast and S=South. \*Because of a change in state definition, trend is measured from 1998–1999 to 2005–2006. *Sources:* references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

Bengal, and reached 15% in Jharkhand. Nationally, the proportion giving birth before age 16 dropped by three percentage points (or roughly one-quarter) from 1993 to 2006 (from 11% to 8%), but much larger declines from more substantial levels occurred in Maharashtra (from 16% to 5%) and in Andhra Pradesh (from 23% to 12%); a large decline occurred over an even shorter period in Madhya Pradesh and its split-off part, Chhattisgarh (from 17–20% in 1999 to 7–8% in 2006). Disconcertingly, that proportion actually increased very slightly in Arunachal Pradesh (from 10% to 12%) and Jharkhand (from 13% to 15%, but over a shorter period, only seven years).

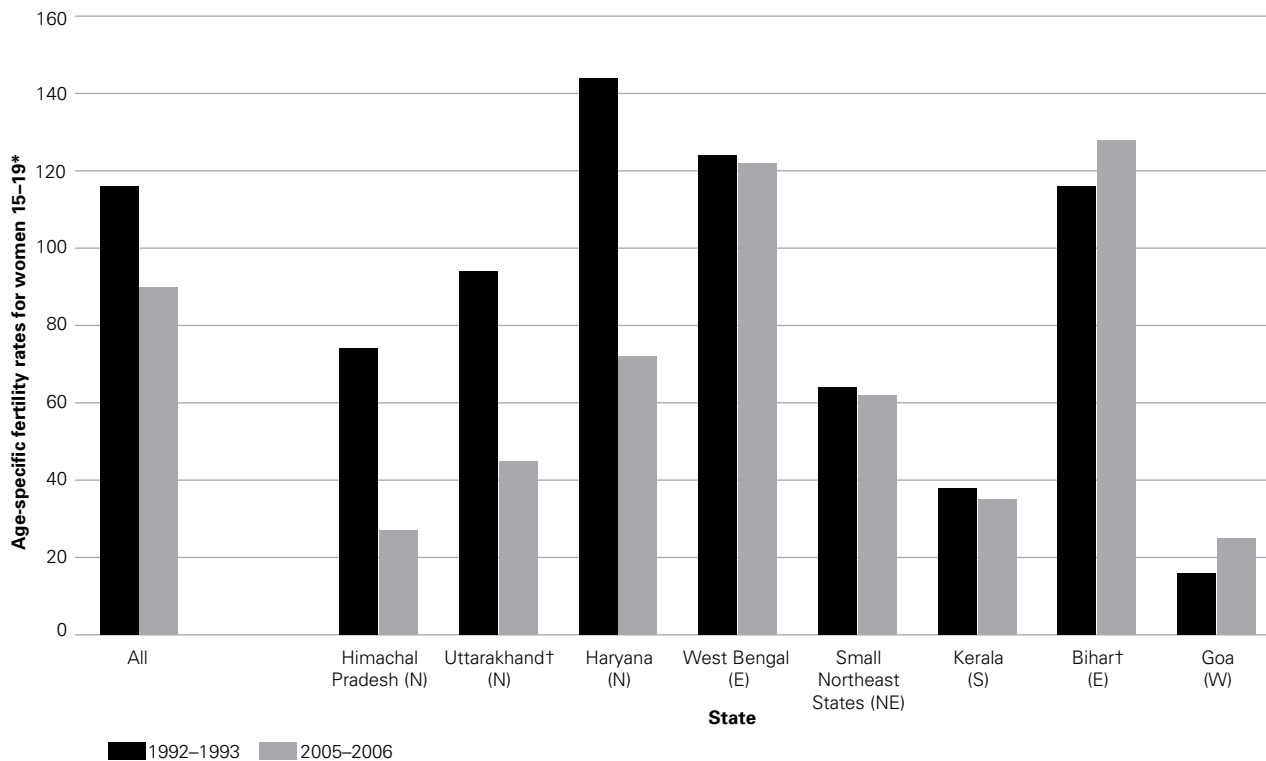
Data on childbearing by an adolescent’s 18th birthday—before she is legally old enough even to marry—show that 22% of all Indian young women have already given birth by that age (Figure 4). The level is 12% in urban areas, but double that, 26%, in rural areas. Unsurprisingly, the six states that already stood out for having higher-than-average levels of childbearing before age 16 are also among the eight with the highest levels of childbearing before age 18, ranging from 23% in Karnataka to 37% in Jharkhand (Appendix Table 2). This last state, together with another eastern state, Bihar (at

31%), also stand out for having experienced essentially no change in this measure over the past seven years (Figure 5). On the other hand, Himachal Pradesh, Tamil Nadu and Delhi are notable for declines of at least 50% in the proportion giving birth before 18 (from already below-average levels of 12–18% to 5–9%) over the full 13-year period.

In 2006, roughly 42% of all Indian women aged 20–24 reported giving birth before age 20, down seven percentage points from 1993 (Appendix Table 2). Women in urban areas experienced far greater declines in overall adolescent childbearing than those in rural areas, so the level in the former is now only a little over half that in the latter (28% vs. 48%). Young women are most likely to give birth as teenagers in much of the East (Bihar, Jharkhand and West Bengal, with the proportion doing so at 54–58%), followed by the three Central states (46–49%), and two states that are outliers within their regions, Andhra Pradesh in the South (49%) and Rajasthan in the North (45%). The states where women are least likely to give birth during adolescence are Goa (11%), Himachal Pradesh (15%) and Kerala (16%).

Consistent with these decreases over time in the proportions having a child during adolescence and the

**FIGURE 6. Change over time in adolescent fertility rates, all India and selected states to show range in trends**



*Note:* Letters after states indicate regions—E=East, N=North, NE=Northeast, S=South and W=West. \*Annual number of births per 1,000 women aged 15–19; rates are for the three years preceding the survey. †Because of a change in state definition, trend is measured from 1998–1999 to 2005–2006. *Sources:* references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

somewhat later start to childbearing during these years, the rate at which 15–19-year-olds give birth is now lower than it was a decade and a half ago. Overall, the adolescent birthrate fell from 116 births per 1,000 15–19-year-olds in 1993 to 90 per 1,000 in 2006 (Figure 6).<sup>\*</sup> The decline during this period was slightly larger in urban areas (24%) than in rural areas (20%), going from 75 to 57 births per 1,000 adolescent women in the former, and from 131 to 105 births per 1,000 in the latter. The states with the largest declines—50% or more—are all in the North (Himachal Pradesh, Haryana and Uttarakhand, with this last state’s substantial decline occurring in half the time of the others). The trend within other regions did not fit any single pattern, although the eastern states of Bihar and Jharkhand (Appendix Table 2) stand out for undergoing

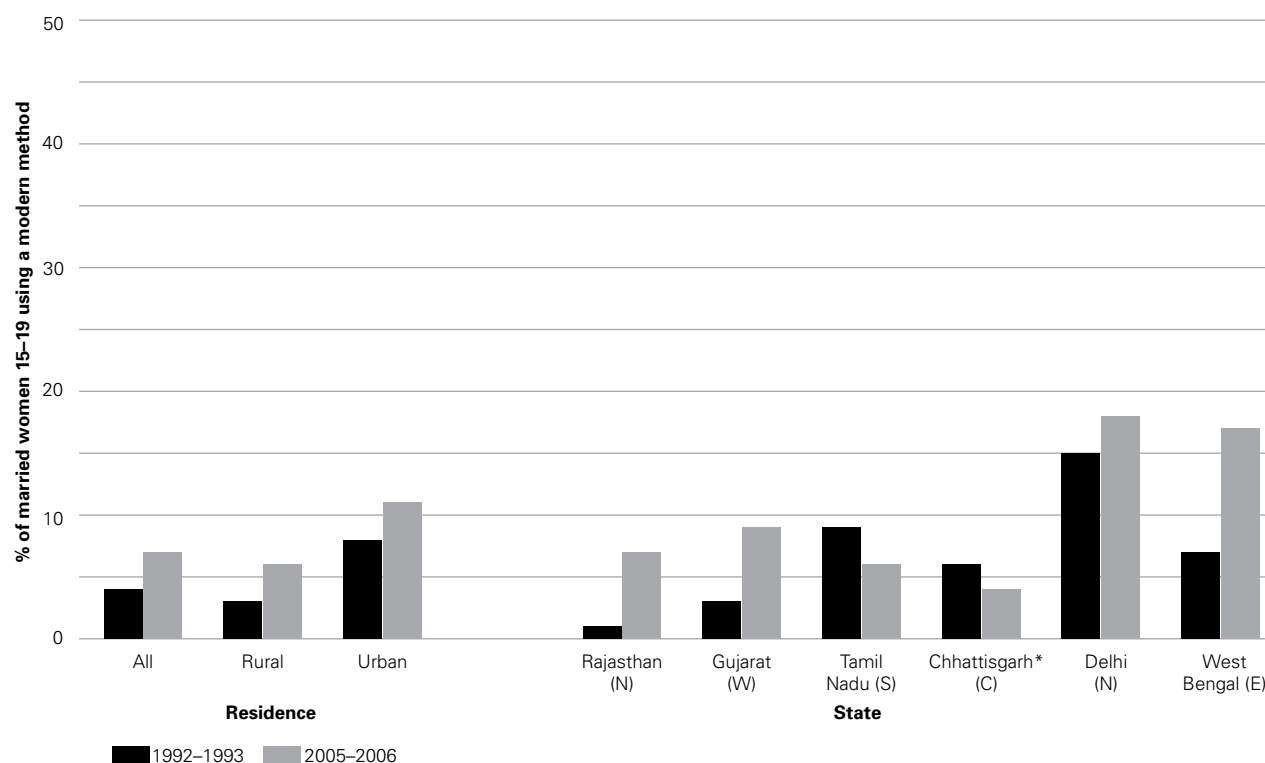
*increases* in adolescent fertility rates in the shorter period between the 1999 and 2006 surveys.

Trends in the proportions with a birth before each specific age during adolescence are reflected in changes in the age at first birth, as women started their childbearing in 2006 a bit later than they did in 1993 (at a median age of 19.9 vs. 19.5; Appendix Table 2). Young women in Goa and Himachal Pradesh experienced the greatest change over time—increases of about 2–3 years, despite starting from somewhat above-average ages in 1993. Unfortunately, women in the country’s third largest state, Bihar, gave birth for the first time at an even younger age in 2006 than in 1999 (at 18.4 instead of at 19.1, perhaps because of better overall health, which can lead to younger age at first menstruation and improved fertility, as has been shown in other countries<sup>29</sup>). Goa’s median age at first birth, at 27.3 among 30–34-year-olds, is by far the highest in the country and is more than seven years older than the national average.

Trends in how long women wait after marriage before having their first birth are a good indicator of whether pressure to have a child quickly or access to spacing methods is changing over time. Overall, between 1993

<sup>\*</sup>Whether young women become mothers during adolescence—a reflection of the timing of their *first* birth—appears to have not changed as much as whether they go on to have second and third births during adolescence. That is, the adolescent fertility rate, which includes not just first but also subsequent births to adolescents, fell by 22%, but the proportion of women who became mothers at all during adolescence (i.e., had any birth before age 20) fell less over time, by only 14%.

**FIGURE 7. Change over time in proportion of married 15–19-year-olds currently using a modern method, India overall and by area of residence, and for selected states to show range in trends**



*Note:* Letters after states indicate regions—C=Central, E=East, N=North, S=South and W=West. \*Because of a change in state definition, trend is measured from 1998–1999 to 2005–2006. *Sources:* references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

and 2006, there was no major difference in the interval separating marriage and first birth, which remained at 2.1–2.3 years, with a few notable exceptions (Appendix Table 2). In 1993 in Punjab, for example, women had their first birth just 1.2 years after marrying, but that interval had lengthened to almost reach the national average by 2006. In West Bengal, however, the interval between marriage and birth shortened over time, by about half a year.

### Contraceptive Use

The huge variation by state in current levels of adolescent childbearing is explained in part by differences among states in socioeconomic development, cultural norms and values, but also by variations in access to and use of modern contraceptive methods,\* and perhaps a differential reliance on abortion, too. Despite the high level of acceptance of family planning in general and a good

level of knowledge of modern methods (i.e., adolescent women know of four methods, on average), their actual use is exceptionally low: As of 2006, just 7% of married 15–19-year-old women used a modern method, and nearly the same proportion, 6%, used a traditional method† (Appendix Table 3). By individual states, use of modern methods ranged from a high of 17–18% in West Bengal and Delhi to a low of 2% in Bihar, whereas use of traditional methods ranged from less than 1% in Tamil Nadu to 21–22% in Assam and West Bengal.

Married adolescent women living in urban areas are far more likely than those in rural areas to be using a modern method (11% vs. 6%), although both areas saw important improvements between 1993 and 2006 (Figure 7). Important increases in the proportion—albeit still quite low—using a modern method were exceptionally large in such disparate states as Rajasthan, Orissa and Gujarat. Surprisingly, modern method use dropped in the relatively prosperous state of Tamil Nadu. Despite the fluctuations over time, however, current use of any modern method is notably limited among married Indian adolescents, especially in relation to that among their counterparts in

\*We define modern methods as the pill, the IUD, the condom (male and female), sterilization (male and female), the diaphragm, foam and jelly.

†By traditional methods, we mean rhythm, withdrawal and folk methods.

neighboring South Asian countries such as Bangladesh, Nepal and Sri Lanka.<sup>30</sup>

West Bengal in the East stands out for having, by far, the highest prevalence of use of any method among married adolescent women, at 39% (17% use modern methods and 22% use traditional ones). That modern contraceptive use is just one of the many factors influencing fertility is evident in the discrepancy between Delhi and West Bengal. Even though the two states share the highest national level of use (17–18%), Delhi's adolescent fertility rate is just 41 births per 1,000 women aged 15–19, whereas West Bengal's is one of India's highest, at 122 births per 1,000 (Appendix Table 2). Divergent trends in early marriage offer a much better explanation for the observed difference in fertility, since just 35% of women marry in their teenage years in Delhi, but fully 73% do so in West Bengal.

According to one small-scale study, two-thirds of young married Indian women want to postpone their first birth, but only one-quarter have ever used a method to do so.<sup>31</sup> What might be the reason for this disconnect? Certainly, issues of access to services and adolescents' lack of autonomy constrain use. So do traditional norms that urge young wives to solidify their standing in their husband's family by producing a child soon after marriage. Another factor is likely the predominance of a single method—sterilization—which accounts for nearly 80% of modern method use among all women of reproductive age. For more than three-quarters of sterilized women, tubal ligation is the first (and only) method they ever used.<sup>2</sup>(Table 5.13) In light of this pattern, very low use of reversible methods among 15–19-year-olds who are just starting to have children is less confounding.

Overall, the most commonly used method among married 15–19-year-olds is the rhythm method (used by 4%), followed by the male condom (3%), withdrawal (2%) and the pill (2%).<sup>2</sup> The next most frequently used method is female sterilization (1%). That female sterilization should be used at all by adolescents speaks to a glaring need for spacing methods. It also exposes a violation of government guidelines stipulating that a woman must be at least 22 years old to be sterilized.<sup>32</sup>

## Fertility Preferences

The small family ideal is now widespread in India. Today's adolescents, in both urban and rural areas, want a family of 2.3 children, a solid decline from the already relatively low average of 2.7 desired in 1993 (Appendix Table 3). Adolescents with the largest ideal family size in 2006 (2.6–2.7 children) lived in the states of Bihar and Jharkhand in the East, and all Northeast states, except for Assam.

The extent to which young women have unplanned births is an important indicator of their lack of access to

information and services, and of how effectively they use their contraceptive method. At the national level, 14% of recent births to adolescents in 2006 were unplanned (i.e., they occurred too soon or were not wanted at all), a proportion that was little changed since 1993 (Appendix Table 3). The good news is that, consistent with their proportionately greater rise in modern contraceptive use, urban adolescents' ability to prevent unplanned births seems to have improved: The proportion of unplanned births declined by two-fifths, from 21% to 13% between 1993 and 2006. Rural women saw no such improvement, however, as unplanned births remained stable at 14–15%. Still, it is important to note that the overall current national level of 13–14% is quite low, which likely reflects the strength of the social norm supporting childbearing among young married women. In a few states, namely, West Bengal, Arunachal Pradesh and the group of small Northeast states, the proportions of unplanned births are currently above one-quarter—a finding consistent with these states' especially high levels of unmet need for modern contraception (discussed below).

Of course, these data are on unplanned births, not pregnancies, and the missing piece of the fertility puzzle is the prevalence of abortion. Comparatively little is known about how many of India's estimated 6.4–6.7 million annual abortions<sup>33,34</sup> are obtained by adolescents, with estimates ranging widely.<sup>34</sup> What is known is that, since the vast majority of sexually active adolescents are married, most adolescents who obtain abortions are also married.<sup>35</sup> Yet because of the stigma regarding sexual activity before marriage, unmarried adolescents are especially likely to seek a clandestine—and quite possibly unsafe—abortion,<sup>36</sup> and adolescents likely make up a disproportionately large percentage (at least half) of the unmarried women who seek an abortion.<sup>34</sup>

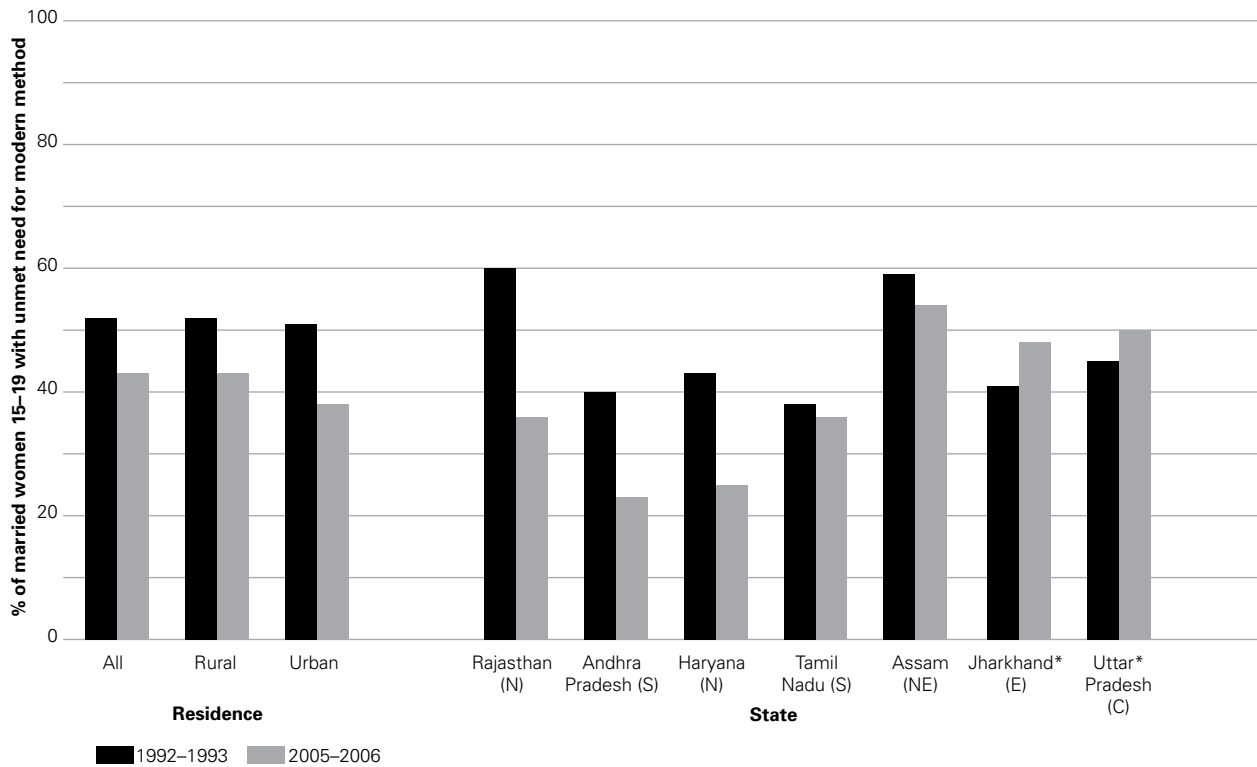
Adolescent women are also highly likely not to know that the procedure is legal under broad grounds,<sup>17–22,34</sup> which affects their likelihood of seeking a safe abortion. In addition, they share with older women, albeit at lower frequencies, a disconcerting reason for seeking an abortion—to avoid giving birth to a daughter.<sup>35,36</sup> Sex-selective abortions stem from deep-rooted traditions\* coexisting with increasing desires for fewer children, especially in

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\*The common refrain “better to invest 500 rupees now than 50,000 later” refers to the economic advantage of paying for a sex-selective abortion now rather than paying the far higher future costs incurred by having a daughter. With the spreading consumer culture and increasing age at marriage, families are paying larger dowries to the family of their son-in-law when girls leave their natal homes to join their husbands'. Daughters are also devalued because they are disqualified from performing last funeral rites for their parents and because the increasing mechanization of agriculture has reduced their utility as field laborers.



**FIGURE 8. Change over time in unmet need for a modern method among married 15–19-year-old women, India overall and by area of residence, and for selected states to show range of trends**



*Notes:* Letters after states indicate regions—C=Central, E=East, N=North, NE=Northeast and S=South. \*Because of a change in state definition, trend is measured from 1998–1999 to 2005–2006. *Sources:* references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

wealthier states with greater accessibility to technology to determine the sex of the fetus.<sup>37</sup>

### Unmet Need for Modern Contraception

Adolescents’ ability to prevent unplanned pregnancy can be assessed by examining the extent to which they can act on their reproductive desires. A majority (52–74%) of married adolescent women in every state except Punjab and Andhra Pradesh do not want a child in the next two years (Appendix Table 3). Yet, as shown above, the proportion using a modern method to achieve that goal is always far lower.

Unmet need for modern contraception—the proportion who are fecund and who do not want a child in the next two years but are not using an effective method—is notably high among married Indian adolescents. Unmet need can increase when women begin to want smaller families, but their adoption of modern contraception does not keep pace with increased demand for fewer children. At the national level, more than four in 10 married adolescents have an unmet need for a modern method (Figure 8). Although that need decreased from 52% to 43% between 1993

and 1999, it has remained at that level since (Appendix Table 3). Over the period from 1993 through 2006, unmet need declined by more than twice the average—or by at least 40%—in Haryana and Andhra Pradesh.

These states are not alone in undergoing increases in contraceptive use, however, so we must look for other explanations for their large decline in unmet need. One possibility is the uniformly large drops in the proportion of adolescent women wanting to postpone a birth for at least two years (i.e., of 10–19 percentage points vs. the three–percentage point decline in the national average; Appendix Table 3); this would, by definition, lower their likelihood of having unmet need. (Another possibility is that as these states also experienced large declines in early marriage, the remaining women marrying early may have been selectively poorer and more disadvantaged, and thus more likely to want children, which also leads to a decline in unmet need.) Rajasthan also experienced a notable decrease in unmet need (24 percentage points, or 40%), but with less change in adolescent women’s desire to postpone a birth. This progress in meeting women’s contraceptive needs might help explain, in part, how Rajasthan, a

state with the third-highest rate of early marriage (57% of 20–24-year-olds marry before age 18, compared with a national average of 45%) is still close to the national average in the proportion giving birth before age 20 (45% compared with 42% nationally).

The state with the highest unmet need for a modern method in 2006—Assam, at 54%—had a persistently high need over the past decade and a half; much of that need reflects the high prevalence of traditional method use there, evidence that women are seeking to prevent pregnancy even though they are not using effective methods. Need increased from 1993 to 2006 in the relatively small northeastern state of Arunachal Pradesh (from 44% to 50%); it also rose by a similar amount—but in only half the time, from 1999 to 2006—in the country’s most populous state, Uttar Pradesh, and in Jharkhand.

# Recent Relevant Policies, Acts and Programs

What is the national government doing to empower Indian adolescent women to delay marriage and child-bearing? Adolescents' inclusion in India's formal health policy is relatively new. In fact, national-level recognition of the importance of adolescents' reproductive health and well-being in their own right, rather than simply to ensure delivery of healthier babies, is still recent. Efforts to address the special needs of adolescents were spurred by advocacy among local nongovernmental organizations (NGOs) and the watershed International Conference on Population and Development held in Cairo in 1994. With a few notable exceptions, however, the recent attention is conservatively focused on married adolescents; unmarried adolescents' sexual and reproductive health needs are still too controversial to be addressed in national-level policy.<sup>38</sup>

The adolescent unit in the Ministry of Health and Family Welfare was created only within the past decade. Other ministries that deal with various aspects of young peoples' lives are the Ministry of Youth Affairs and Sports, and the Ministry of Women and Child Development. Many states also have their own policies, which vary widely in content and funding levels. The majority of adolescent-oriented policies address the needs of this age-group only piecemeal in separate areas, such as education, health, HIV and sports, despite the emphasis since the conference in Cairo on the need for "an integrated approach to the special health, education and social needs of girls and young women."<sup>39</sup>

Whereas existing policies acknowledge that gender discrimination is prevalent, most fail to clearly articulate the rights of female adolescents in a wider perspective. Over the past decade, the government launched the following major policies with specific references to improving the reproductive health of adolescents, and several show promise of an incipient progressive trend.

## Policies to Promote Adolescents' Reproductive Health

The government of India has adopted several policies in the past decade that have the potential to advance the reproductive health of adolescents, both directly and indirectly.

- The 2000 National Population Policy<sup>40</sup> specifies the goals of educating adolescents about the risks of unprotected

sex and mentions (but does not define) the "special requirements" for accessible and affordable contraceptive services in rural areas where adolescent marriage and pregnancy are widely prevalent. To delay early marriage, the policy calls for stricter enforcement of the minimum age at marriage and also recommends financial incentives to induce both postponing first births and having fewer births.

- The 2001 National Policy for the Empowerment of Women<sup>41</sup> explicitly defines child marriage as a form of "discrimination against the girl child" and calls for compulsory registration of marriages (and of births, since many girls lack birth certificates and thus are unable to assert their right to refuse to marry when they are younger than the legal minimum age). It optimistically predicts that "by 2010 child marriages are [to be] eliminated" through consistent improvements in education, better marriage registration and increased use of incentives that make payments to keep girls in school contingent on their staying unmarried.
- The 2003 National Youth Policy<sup>42</sup> identifies adolescents, defined as 13–19-year-olds, and females in particular, as a priority target group and acknowledges their needs for separate general health clinics. Although it includes text on sensitizing adolescents on the "correct" age to marry and begin a family (and on birthspacing and limiting family size), it concedes that, despite government initiatives, the social climate still encourages young couples to produce their first child soon after marriage. It acknowledges that "this scenario is unlikely to change in the near or medium term."
- The country's National Plan of Action for Children of 2005<sup>43</sup> contains language about preventing and progressively eliminating child marriage (by 2010) and underage childbearing. It asserts that all adolescents (defined as young people aged 10–18)—with no mention of marital status—receive sexual and reproductive health information, including information on HIV/AIDS, in school curricula. It identifies stopping sex-selective abortions as paramount to promoting the rights of girls.
- The Adolescent Health Section of the National Program Implementation Plan<sup>44</sup> lays the policy framework for adolescent services in Phase II (2005–2010) of the country's Reproductive and Child Health program. It

acknowledges the heterogeneity of adolescents (here defined as 10–19-year-olds) and the needs of both married and unmarried adolescents to receive confidential and nonjudgmental contraceptive services. The plan is unique in advocating that providers be trained in working with adolescents, that they refer adolescents for early and safe abortion, and that they provide adolescents with spacing methods in particular.

- Similarly, the country's Eleventh Five Year Plan, for the years 2007–2012,<sup>45</sup> moved adolescents to the foreground, calling for their issues to be “incorporated in all reproductive and child health training”; for providers to be given knowledge and skills to cater to their needs; and for separate, adolescent-friendly services. To combat adolescent marriages, the plan also insists on the compulsory registration of marriages and on verification of age at the time of marriage.

### **Legislation That Affects Adolescents' Reproductive Health**

In addition to policies, the Indian government has enacted several laws that likewise hold promise for improving the reproductive well-being of all women, including adolescents.

- The negative impact of unsafe abortion on women's health led to the passage of the Medical Termination of Pregnancy Act in 1971, which made induced abortion legal on what are interpreted to be broad social and economic grounds.<sup>46</sup> (The law specifies that the procedure is legally permitted when pregnancy results from contraceptive failure among married women, when it results from rape, when it poses a threat to the pregnant woman's physical or mental health, and when the fetus has severe abnormalities.)
- With the Pre-Conception and Pre-Natal Diagnostic Techniques Act of 1994,<sup>47</sup> the government placed strict limits on the use of technology to determine the sex of the fetus. The act is meant to counter the increasingly skewed sex ratio caused by sex-selective abortion.<sup>33–35</sup>
- The recent Prohibition of Child Marriage Act of 2006<sup>48</sup> was spurred by human rights activists.<sup>49</sup> The act imposes harsh new penalties on underage marriages, but retains the gender imbalance in the minimum age at marriage, which is three years lower for women than it is for men. It allows married adolescents younger than 18 to nullify their marriage, but retains legitimacy for any children born in the union. The law adds some teeth to earlier efforts by directing states to have district magistrates act as prohibition officers to ensure compliance with the law.

### **Funding for Adolescents' Reproductive Health Information and Services**

Public-sector reproductive health services envisioned in government policy, including adolescent services, are largely funded by the national government but administered by the states. Less than 1% of the country's gross domestic product is dedicated to public spending on *all* aspects of health, a level that has remained unchanged for the past decade and a half.<sup>50</sup> That amount works out to a meager 214 Rs (rupees) per person (roughly equivalent to US\$5) annually. As a result, the public relies heavily on the private sector for health care: Roughly three-quarters of health services are provided by the private sector.<sup>51</sup> In fact, the amount that Indians themselves pay out of pocket for health care is three times higher than the government's expenditure on health.<sup>52</sup>

Specific levels of funding for adolescent reproductive health are basically unknown, since adolescents are usually not broken out as a separate target population for services. Funds spent on unmarried adolescents largely support information, education and communication strategies rather than services per se. The first time a national plan included a line item for adolescent health care was with the Tenth Five Year Plan (2002–2007),<sup>27</sup> but the approved outlay was just 50 *crores* Rs (the Indian English term *crore* is equivalent to 10 million), or US\$10.3 million, and what that money paid for is unspecified.

### **Obstacles to Improving Adolescents' Reproductive Health**

Despite their laudable intentions, the specifics set out in national-level policies—for example, the envisioned adolescent-friendly services—have yet to be realized in large-scale programs, and few rigorous evaluations of existing programs have been conducted. The relatively recent initiation of adolescent programs means that meaningful information on what works is still lacking. This short report is unable to detail the large number of small-scale initiatives and programs that have been undertaken by a wide range of actors, including individual states and local and international NGOs. Suffice it to say that when youth services do exist, they tend to be located next to adult clinics, which can inhibit adolescents from using them, and centers often fail to ensure clients confidential, youth-friendly care.<sup>38</sup>

Very few unmarried adolescents likely seek services, as Indian society severely disapproves of sexual activity outside of marriage. When newly married adolescents are the intended target of formal programs, many are unable to receive services because they lack freedom of movement, autonomy and access to resources. Even more

important, decisions about care are often out of young women's hands, and are instead made for them by husbands and mothers-in-law.<sup>26</sup>

The use of cash incentives to induce behavior change is common in India, and adolescents are often the intended recipients (sometimes through their parents) of such conditional cash transfer programs to delay marriage and childbearing. The following are just two of many examples. Although not specifically designed to discourage early childbearing per se, the national scheme *Janani Suraksha Yojana*<sup>53</sup> may encourage adolescents to postpone childbearing, since in some states, direct payments to the mother for making each of three prenatal visits and a post-partum care visit are contingent on her being at least 19 years old. The national scheme *Balika Samridhi Yojana*<sup>54</sup> aims to improve the status of girls through multiple, inter-related steps. First, to help balance the sex ratio, it pays couples on the birth of a girl. It then promotes girls' education by paying into an interest-bearing account for each year that a girl remains in school. The money is released to families only when the young woman reaches age 18 and then only if she is unmarried.\* These cash incentive schemes, which are targeted squarely on the poor, remain controversial since they do not address the norms behind the behaviors they seek to modify. The use of such incentives thus begs the question of what happens once the payments end.

Although several policies mention the need to educate adolescents about reproductive health, no national sex education curriculum has, as yet, been accepted. Out-of-school adolescents are especially difficult to reach. There are no data on the content of the sex education that is currently being provided. However, a recent, representative study in five states† found that 3–26% of 15–24-year-old women, with the proportions always far higher among unmarried than married women, have received any formal family life and sex education.<sup>55</sup> A culturally inappropriate curriculum recently rolled out created a great deal of mistrust and suspicion regarding what sex education is. After this debacle, some states have gone so far as to consider banning sex education in schools altogether.<sup>56</sup> Many Indian

teachers feel both unprepared and uncomfortable giving instruction in this sensitive area. One national NGO, the Family Planning Association of India, is providing teacher sensitization training and counseling to help teachers master the sex education material. There is hope that giving young people broader access to an appropriate curriculum can increase their knowledge and use of family planning, and thus improve their sexual and reproductive health.

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\*In an example of a district-level initiative to postpone marriage, called the Second Honeymoon Package, government health workers register the marriage and counsel the newlyweds on family planning. Couples who delay having their first child for two years are rewarded with 5,000 Rs, and those who postpone their first birth for three years get an even greater sum, 7,500 Rs. Source: Health Department of Satara District, PowerPoint presentation, Honeymoon Package, undated, <<http://www.hiissatara.com/News/HONEY%20MOON%20PACKAGE.ppt>>, accessed Sept. 24, 2008.

†Andhra Pradesh, Bihar, Jharkhand, Maharashtra and Tamil Nadu.

# Conclusions and Recommendations

Adolescence, defined as the period between childhood and adulthood, often does not last very long for girls in India. Despite the fact that 18 is the legal age for marriage, almost half (45%) of young women are already married before their 18th birthday. Such early marriages are directly linked to the low status of women in Indian society and a clear violation of an adolescent's legal rights.<sup>57</sup> Moreover, given the significant, independent association between early marriages and domestic violence, marrying as a minor poses a real threat to a young woman's safety.<sup>12</sup> Although the proportion who marry before age 18 has started to fall, the pace of that decline is painfully slow—a drop of only five percentage points from 1993 to 2006. The recent small *increase* in early marriage in the relatively prosperous states of Goa, Punjab and Gujarat is troubling and warrants further research into the possible explanations behind it.

More than two-fifths (42%) of Indian women still become mothers during adolescence, despite a decline in this behavior of seven percentage points over the past decade and a half. Giving birth during adolescence is relatively uncommon in several states, such as Goa, Himachal Pradesh and Kerala (11–16%), even as more than half of young women have a child during their teenage years in the states of Bihar, Jharkhand and West Bengal (54–58%). Unfortunately, these very states are also the ones where the likelihood of becoming an adolescent mother barely changed in the recent past.

Because almost all childbearing occurs in the context of marriage, delays in marriage alone will also cause delays in first births. But improving young women's contraceptive use is also essential to enable them to control the timing of their pregnancies and births. As of 2006, only 7% of married 15–19-year-olds used a modern method. And a telling 43% had an unmet need for modern contraception. This high level of unmet need—the proportion wanting to postpone a birth but not practicing modern contraception—is partly caused by problems of cost and access, but also by many adolescents' social isolation and lack of control over their own reproductive decisions. The overwhelming predominance of sterilization in the country's method mix likely also comes into play, since it suggests that few contraceptive options are available to those who wish to delay their first birth or space later births.

Contraceptive use is undoubtedly low among married young women because many want to start families right after marrying in accordance with cultural expectations and norms. Since many are under pressure from mothers-in-law and husbands, these influential family members need to be enlisted in any efforts to convey the message about the benefits of delaying first births and adequately spacing subsequent ones. Young women who wish to postpone a first birth clearly need better access to a broader range of temporary contraceptive methods.

To be successful, promising health-service delivery interventions need to specifically address married adolescents' lack of power and social isolation. To accelerate the decline in child marriages and early childbearing, the recent progress in girls' schooling needs to be solidified and extended to enhance young women's ability to pursue alternatives other than early marriage and motherhood. Formal education is the single most important determinant of the timing of marriage in the country, yet few programs to raise the age at marriage focus on keeping girls in school.<sup>15</sup> Because programs to improve adolescents' reproductive health have seldom been evaluated, we lack definitive data on which interventions work best and why. More comprehensive evaluations are needed to identify programs that deserve to be scaled up. Foremost among these should be programs to impart family life and sex education to Indian youth who remain dangerously underinformed.<sup>17–22</sup>

We need to improve our measurement and understanding of premarital sexual activity and help adolescents who are sexually active outside of marriage to better protect their health. Premarital sexual activity remains highly stigmatized in India, and the extremely low reported prevalence of such activity likely reflects considerable underreporting. The persistence of stigma deters sexually active unmarried adolescents from getting contraceptive services, which, in turn, raises their risk of STIs and unwanted pregnancy. Indeed, unmarried adolescent women who obtain abortions are especially likely to resort to illegal—and quite possibly unsafe—abortion. To make abortions both safer and more accessible, cumbersome registration requirements need to be modified to increase the number of facilities that are certified to provide the procedure. Also, women in general need to be better

informed about the legality of abortion so they are more likely to seek out safe procedures in certified facilities.

Despite the increase in women's education and the incipient rise in age at first marriage and birth over the last 13 years, the pace of progress has been too slow to bring about adequate improvement in adolescent women's health and position in society. To speed up that progress, existing laws to improve women's status through delaying age at marriage need to be more strictly enforced and supported. In addition, the country needs to pursue other types of interventions that address women's status more broadly, including within marriage, such as programs to keep girls in school and prepare them for meaningful work and economic independence. Indian society overall needs to be sensitized to the lifelong disadvantage that early marriage and childbearing can incur. As more widespread action and societal support for gender equity spurs the acceptance of adolescents' need for and rights to reproductive information and services, adolescent women will be better able to develop their potential before becoming wives and mothers, to the benefit of their children and families as well.

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**APPENDIX TABLE 1. Selected demographic and socioeconomic characteristics among adolescent women in India, overall and by area of residence and state, 1992–2006**

Region and state	Total population (in 000s)			% distribution by state	% living in urban areas			% living in households in the top 2 quintiles of wealth index
	1992	1999	2005		2005	1992	1999	
	<b>1</b>			<b>2</b>	<b>3</b>			<b>4</b>
All	38,020	44,300	50,533	100.0	25	27	28	36
Rural	27,343	31,143	34,803	na	na	na	na	21
Urban	10,677	13,157	15,730	na	na	na	na	73
<b>North</b>								
Delhi	414	561	727	1.4	91	93	95	90
Haryana	740	924	1,118	2.2	26	29	32	55
Himachal Pradesh	277	297	314	0.6	8	9	9	58
Jammu/Kashmir**	414	520	632	u	24	24	24	47
Punjab	986	1,121	1,251	2.5	28	33	37	68
Rajasthan	1,913	2,358	2,820	5.6	25	26	26	35
Uttarakhand**	300	407	487	1.0	na	u	u	54
<b>Central</b>								
Chhattisgarh**	748	881	1,136	2.2	na	u	u	17
Madhya Pradesh**	1,994	2,403	2,698	5.3	26	28	30	28
Uttar Pradesh**	5,492	6,683	7,946	15.7	23	25	26	31
<b>East</b>								
Bihar**	2,463	2,981	3,287	6.5	15	16	17	22
Jharkhand**	916	1,092	1,515	3.0	na	u	u	22
Orissa	1,556	1,721	1,876	3.7	14	15	17	20
West Bengal	3,038	3,440	3,827	7.6	29	29	29	24
<b>Northeast</b>								
Arunachal Pradesh	37	49	62	0.1	14	21	28	36
Assam	1,104	1,210	1,309	2.6	11	13	14	24
Small Northeast states††	456	573	704	1.4	22	23	23	45
<b>West</b>								
Goa	64	61	58	0.1	40	46	51	75
Gujarat	1,978	2,319	2,659	5.3	35	37	39	59
Maharashtra	3,392	4,085	4,790	9.5	42	43	44	53
<b>South</b>								
Andhra Pradesh	3,109	3,504	3,882	7.7	31	31	32	40
Karnataka	2,142	2,447	2,742	5.4	34	35	37	39
Kerala	1,547	1,510	1,480	2.9	26	25	25	79
Tamil Nadu	2,831	2,999	3,150	6.2	37	42	48	38

\*For comparability with the 2006 survey sample, which included women of all marital statuses, the 1993 and 1999 data are based on 15–19-year-old women from the household sample. †Results are for ever-married women aged 15–19 in order to ensure comparability across survey years. ‡Unweighted N=50–74. §Unweighted N=25–49. \*\*Seven states for which certain trends can only be assessed starting with the 1999 values because of noncomparability in the areas sampled over time. For Jammu/Kashmir, the region of Jammu only was sampled in 1993 (denoted by bold italics), whereas the entire state was represented in 1999 and 2006, so trends are measured for the period between the later two surveys. Similarly, three large states—Bihar, Madhya Pradesh and Uttar Pradesh—changed definitions since the 1993 survey (denoted by bold italics): The 1999 survey contains sufficiently detailed geographic information to permit mapping to the 2006 state definitions, which allows trends to be measured from 1999 to 2006 for these three original states plus their split-off parts of Chhattisgarh (from Madhya Pradesh), Jharkhand (from Bihar) and Uttarakhand (formerly known as Uttaranchal, from Uttar Pradesh).

	% who belong to a scheduled tribe or caste	% with ≥6 years of education			% who listen to/view radio/TV at least once a week†					
					Radio			TV		
	2005–2006	1992–1993*	1998–1999*	2005–2006	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006
	<b>5</b>	<b>6</b>			<b>7</b>			<b>8</b>		
	28	45	54	63	41	33	28	23	38	40
	31	35	46	55	38	33	27	17	32	33
	22	72	76	81	60	38	29	55	74	73
	21	80	82	82	61	50‡	41‡	76	93‡	78‡
	22	51	70	77	46	36	19	48	64	65
	24	67	84	93	57	55‡	22§	36	67‡	67§
	21	<b>60</b>	58	74	<b>64</b>	65	48§	<b>32</b>	48	50§
	38	67	75	77	37	35	20‡	55	72	78‡
	32	25	36	45	27	19	16	15	30	30
	29	na	73	76	na	40‡	20‡	na	42‡	63‡
	41	na	46	55	na	43	20	na	44	37
	40	<b>34</b>	41	58	<b>33</b>	23	29	<b>22</b>	42	35
	23	<b>34</b>	40	55	<b>31</b>	29	36	<b>12</b>	27	36
	19	<b>31</b>	36	39	<b>27</b>	21	31	<b>7</b>	13	16
	39	na	44	44	na	16	10	na	17	15
	43	41	53	59	29	29	22	7	20	35
	34	44	46	58	44	41	35	23	33	39
	72	47	63	54	50	50	18	38	50	54
	23	48	57	64	31	36	25	7	22	27
	63	68	66	72	45	46	32	23	49	58
	9	81	89	92	50§	‡‡	31§	50§	‡‡	68§
	24	57	61	74	42	28	22	29	48	52
	28	64	73	83	46	29	26	32	50	55
	26	41	48	69	60	40	21	34	57	69
	24	49	62	77	62	57	22	28	51	59
	12	92	96	98	75	78	46‡	33	54	63‡
	26	56	71	88	66	58	46	53	70	83

††For the later two surveys, this group included Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura; for the first survey, Sikkim was not included because it was not sampled in 1993. ‡‡No data presented because unweighted N<25. Notes: na=not applicable. u=unavailable.

Sources: **Columns 1–3**—Populations for 1992 and 1999: interpolated from the Registrar General, India, *Census of India 1991, Population Projections for India and States 1996-2016, Report of the Technical Group on Population Projections Constituted by the Planning Commission*, New Delhi: Government of India, 1996. Population for 2005: reference 5. The national figures include the six Union Territories, which is why the state totals do not sum to the national total. **Columns 4–8**—references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

**APPENDIX TABLE 2. Selected marriage and fertility indicators among young women in India, overall and by area of residence and state, 1992–2006**

Region and state	% of women 15–19 ever married*			Among women 25–29, † median age at first						% of women 20–24 who married* before		
				Marriage			Birth			Age 18		
	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006
All	39	34	28	17.2	17.5	17.8	19.5	19.6	19.9	50	46	45
Rural	46	40	33	16.7	16.9	17.2	19.0	19.0	19.4	58	54	53
Urban	22	19	15	18.9	19.3	19.4	20.9	21.3	21.5	31	26	28
<b>North</b>												
Delhi	19	9	9	18.9	19.9	19.9	21.2	21.5	22.0	26	18	21
Haryana	45	25	23	17.5	18.2	17.9	19.7	20.2	20.0	52	36	40
Himachal Pradesh	20	8	6	18.7	19.9	20.8	20.6	21.3	22.6	24	10	12
Jammu/Kashmir††	<b>18</b>	11	7	<b>19.2</b>	20.2	21.3	<b>21.1</b>	21.9	23.0	<b>20</b>	21	14
Punjab	14	12	12	19.8	20.3	20.1	21.0	21.5	22.0	14	11	19
Rajasthan	39	38	32	16.4	16.7	16.7	19.1	19.5	19.5	61	60	57
Uttarakhand††	na	45	11	na	18.2	19.0	na	20.3	21.2	na	29	23
<b>Central</b>												
Chhattisgarh††	na	50	26	na	15.5	17.4	na	17.7	19.4	na	62	52
Madhya Pradesh††	<b>64</b>	47	28	<b>16.1</b>	16.2	17.1	<b>19.0</b>	18.7	19.6	<b>66</b>	61	53
Uttar Pradesh††	<b>40</b>	39	26	<b>17.0</b>	16.6	17.3	<b>19.5</b>	18.9	19.4	<b>54</b>	57	53
<b>East</b>												
Bihar††	<b>51</b>	44	46	<b>16.6</b>	16.7	16.5	<b>19.1</b>	18.9	18.4	<b>61</b>	57	60
Jharkhand††	na	42	45	na	16.6	16.9	na	18.9	19.2	na	62	61
Orissa	28	25	23	17.5	18.2	18.6	19.8	20.0	20.8	45	37	36
West Bengal	41	37	39	16.7	17.6	17.4	19.0	19.5	19.2	56	45	53
<b>Northeast</b>												
Arunachal Pradesh	29	19	24	17.9	18.8	18.3	20.0	20.7	20.2	44	27	41
Assam	32	31	27	17.8	18.8	19.0	19.1	20.5	20.9	44	39	38
Small Northeast states‡‡	17	16	14	20.0	20.5	21.0	21.1	21.7	22.6	25	24	22
<b>West</b>												
Goa	3	6	6	22.6	24.1	25.2	24.4	26.3	27.3	7	10	12
Gujarat	22	24	20	18.6	18.5	18.7	20.4	20.4	20.7	29	36	33
Maharashtra	37	35	22	16.8	17.1	18.3	19.0	19.2	20.4	53	46	39
<b>South</b>												
Andhra Pradesh	53	46	31	15.6	15.9	16.4	17.9	18.3	19.0	68	64	55
Karnataka	38	33	27	17.0	17.7	18.3	18.9	19.3	20.2	51	44	41
Kerala	14	13	11	20.7	20.9	21.3	22.3	22.4	23.0	19	16	15
Tamil Nadu	25	24	13	18.8	19.6	19.7	20.7	21.5	21.7	36	24	22

\*Marriage refers to cohabitation with a spouse. It excludes women who are married but have not yet had *gaura* performed. †Data for Goa are among 30–34-year-old women. ‡The age-specific fertility rate (ASFR) is the annual number of births per 1,000 women aged 15–19; rates are for the three years preceding the survey. §Calculated by multiplying the 2005 population of women aged 15–19 (in 000s) by the ASFR from the 2006 survey; state values do not sum to the national total because of rounding errors and because the national totals include the Union Territories, which are not shown here. \*\*For reasons of space, we present this indicator for two survey years only, usually the first (1993) and third (2006) surveys. The baseline data are from 1999 for the seven states that were affected by changes in the areas sampled from 1993 to 1999—Bihar, Chhattisgarh, Jammu/Kashmir, Madhya Pradesh, Jharkhand, Uttar Pradesh and Uttarakhand.

Sources: references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

%			Age-specific fertility rates†			Estimated annual no. of births to women 15–19‡	%						
of women 20–24 who married* before			for women 15–19				Age 16		Age 18		Age 20		
	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006	2005	1992–1993	2005–2006	1992–1993	2005–2006	1992–1993	2005–2006
	70	66	63	116	107	90	4,561,486	11	8	28	22	49	42
	77	73	72	131	121	105	3,669,280	13	9	33	26	55	48
	52	46	46	75	68	57	892,206	5	4	16	12	34	28
	51	36	35	66	36	41	29,516	3	1	15	6	32	17
	76	64	63	144	95	72	80,384	6	2	27	15	54	35
	53	35	33	74	30	27	8,384	2	2	12	5	34	15
	<b>40</b>	35	28	<b>55</b>	47	32	20,350	6	2	15	7	26	17
	41	30	37	64	39	36	44,911	2	3	8	9	27	21
	81	80	76	112	126	98	276,924	11	9	27	22	50	45
	na	62	43	na	94	45	22,144	5	4	16	9	38	23
	na	80	70	na	145	92	104,830	20	8	46	24	61	47
	<b>84</b>	76	72	<b>154</b>	141	96	259,548	17	7	38	23	57	46
	<b>77</b>	75	73	<b>112</b>	121	96	765,200	13	8	34	25	56	49
	<b>81</b>	77	80	<b>121</b>	116	128	420,736	12	12	32	31	54	57
	na	79	77	na	101	123	186,027	13	15	36	37	57	58
	61	52	53	86	80	73	137,511	9	5	24	17	41	35
	71	66	73	124	105	122	466,511	16	11	38	29	56	54
	63	45	54	113	69	70	4,359	10	12	29	28	50	40
	55	55	53	116	88	86	112,705	15	9	34	24	46	40
	43	39	38	64	64	62	43,571	5	4	17	13	33	27
	15	17	21	16	20	25	1,427	3	1	5	5	9	11
	56	58	56	86	87	70	185,332	5	4	14	13	34	30
	73	68	59	141	128	85	404,755	16	5	33	18	54	37
	83	81	71	143	132	99	383,153	23	12	45	30	63	49
	66	63	59	129	112	85	233,893	15	11	34	23	51	41
	35	38	34	38	39	35	51,356	2	0	9	6	22	16
	58	48	38	88	84	56	177,030	6	2	18	9	39	23

††Seven states for which certain trends can only be assessed starting with the 1999 values because of noncomparability in the areas sampled over time. For Jammu/Kashmir, the region of Jammu only was sampled in 1993 (denoted by bold italics), whereas the entire state was represented in 1999 and 2006, so trends are measured for the period between the later two surveys. Similarly, three large states—Bihar, Madhya Pradesh and Uttar Pradesh—changed definitions since the 1993 survey (denoted by bold italics): The 1999 survey contains sufficiently detailed geographic information to permit mapping to the 2006 state definitions, which allows trends to be measured from 1999 to 2006 for these three original states plus their split-off parts of Chhattisgarh (from Madhya Pradesh), Jharkhand (from Bihar) and Uttarakhand (formerly known as Uttaranchal, from Uttar Pradesh). †††For the later two surveys, this group included Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura; for the first survey, Sikkim was not included because it was not sampled in 1993. Note: na=not applicable.

**APPENDIX TABLE 3. Selected indicators of contraceptive use and fertility preferences among currently married\* adolescent women in India, overall and by area of residence and state, 1992–2006**

Region and state	Average no. of modern methods known†			% using a modern method†			% using a traditional method‡		
	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006
All	3.3	3.6	4.3	4	5	7	3	3	6
Rural	3.2	3.6	4.3	3	4	6	3	4	6
Urban	3.9	4.1	4.6	8	8	11	2	3	5
<b>North</b>									
Delhi	4.6	4.7‡‡	5.3‡‡	15	11‡‡	18‡‡	0	7‡‡	6‡‡
Haryana	4.4	4.6	4.4	4	4	7	5	6	2
Himachal Pradesh	4.1	4.7‡‡	4.3§§	4	0‡‡	9§§	4	0‡‡	0§§
Jammu/Kashmir*†	<b>4.1</b>	3.6	3.4§§	<b>0</b>	4	2§§	<b>5</b>	4	2§§
Punjab	4.5	4.7	4.1‡‡	7	7	5‡‡	3	9	1‡‡
Rajasthan	2.8	3.8	4.5	1	3	7	1	1	2
Uttarakhand*†	na	3.9‡‡	3.7‡‡	na	4‡‡	6‡‡	na	0‡‡	3‡‡
<b>Central</b>									
Chhattisgarh*†	na	3.2	4.5	na	6	4	na	2	3
Madhya Pradesh*†	<b>2.6</b>	3.1	4.8	<b>4</b>	4	5	<b>0</b>	1	4
Uttar Pradesh*†	<b>3.5</b>	3.9	5.1	<b>2</b>	2	6	<b>1</b>	3	8
<b>East</b>									
Bihar*†	<b>3.0</b>	3.8	4.7	<b>1</b>	1	2	<b>1</b>	1	2
Jharkhand*†	na	3.5	3.4	na	2	4	na	2	2
Orissa	2.2	3.3	3.7	1	3	5	1	1	4
West Bengal	3.9	3.8	4.3	7	11	17	21	22	22
<b>Northeast</b>									
Arunachal Pradesh	3.0	3.8	4.0	11	17	14	0	0	4
Assam	3.6	3.7	3.9	4	6	5	15	8	21
Small Northeast states*‡	3.2	3.5	4.0	4	10	11	13	5	8
<b>West</b>									
Goa	2.8§§	*§	3.3§§	0§§	*§	10§§	0§§	*§	0§§
Gujarat	3.3	3.3	4.0	3	6	9	0	3	4
Maharashtra	3.3	3.8	4.0	9	6	10	0	0	2
<b>South</b>									
Andhra Pradesh	3.1	3.1	3.4	5	7	6	0	0	1
Karnataka	3.3	3.2	3.2	3	5	5	1	0	1
Kerala	4.3	4.3	3.8‡‡	8	3	13‡‡	5	4	7‡‡
Tamil Nadu	3.6	4.0	4.4	9	5	6	1	1	0

\*Marriage refers to cohabitation with a spouse. It excludes women who are married but have not yet had *gauna* performed. All measures were calculated for currently married women, except for average number of methods known (calculated among ever-married women) and unplanned births (calculated among all women, regardless of marital status, for 2006, and among ever-married women in 1993 and 1999). †Modern methods include the pill, IUD, injectables, condoms (male and female), sterilization (male and female), the diaphragm, foam and jelly. ‡Traditional methods include rhythm, withdrawal and folk methods. §Births that are mistimed or unwanted. \*\*Women who want no children or want to wait two or more years before their next birth. ††Women are considered to have an unmet need if they are sexually active and fecund, do not want a birth in the next two years and are not using a modern contraceptive method. ‡‡Unweighted N=50–74. §§Unweighted N=25–49.

Sources: references 2–4 and special tabulations of the 1992–1993, 1998–1999 and 2005–2006 National Family Health Surveys.

Average no. of children desired			% of births in the past 3 years that were unplanned§			% who do not want a child soon**			% having unmet need for a modern method††		
1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006	1992–1993	1998–1999	2005–2006
2.7	2.5	2.3	16	14	14	64	57	61	52	43	43
2.7	2.6	2.4	15	14	14	63	56	61	52	43	43
2.5	2.2	2.1	21	16	13	68	65	62	51	44	38
2.5	2.3††	2.2††	21	18	5	70	64††	64††	49	43††	34††
2.4	2.1	2.1	12	4	8	62	45	52	43	27	25
2.2	2.0††	2.0§§	14	7	10	68	55††	55§§	52	27††	24§§
<b>2.7</b>	2.4	2.4§§	<b>14</b>	20	18	<b>55</b>	67	58§§	<b>41</b>	56	40§§
2.4	2.1	2.0††	10	9	10	61	44	45††	35	24	27††
2.6	2.5	2.3	9	10	12	61	54	54	60	41	36
na	2.4††	2.2††	na	9§§	22	na	63††	67††	na	53††	38††
na	2.8	2.5	na	15	6	na	55	54	na	45	39
<b>2.7</b>	2.6	2.3	<b>9</b>	15	8	<b>70</b>	58	55	<b>53</b>	41	38
<b>3.0</b>	3.0	2.5	<b>15</b>	12	16	<b>64</b>	54	69	<b>63</b>	45	50
<b>3.2</b>	3.0	2.6	<b>14</b>	12	10	<b>55</b>	58	66	<b>45</b>	54	49
na	2.8	2.6	na	18	18	na	52	66	na	41	48
2.9	2.5	2.2	17	12	11	64	50	61	57	38	39
2.5	2.2	2.1	26	23	27	76	70	69	63	60	51
3.8	3.0	2.7	10	33	28	63	83	71	44	43	50
3.0	2.6	2.2	24	14	8	71	55	67	59	45	54
2.9	2.8	2.6	26	20	26	71	71	74	58	55	50
2.6§§	*§	2.0§§	0††	*§	8††	100§§	*§	69§§	50§§	*§	36§§
2.6	2.4	2.3	8	8	15	58	54	61	48	35	38
2.5	2.2	2.0	21	16	9	64	64	62	43	43	39
2.5	2.2	2.0	11	14	12	57	50	38	40	32	23
2.5	2.2	2.1	32	18	20	64	61	55	52	41	35
2.8	2.9	2.3††	15	10††	9	68	57	59††	43	41	30††
2.1	2.0	2.0	14	17	14	65	61	62	38	31	36

\*†Seven states for which certain trends can only be assessed starting with the 1999 values because of noncomparability in the areas sampled over time. For Jammu/Kashmir, the region of Jammu only was sampled in 1993 (denoted by bold italics), whereas the entire state was represented in 1999 and 2006, so trends are measured for the period between the later two surveys. Similarly, three large states—Bihar, Madhya Pradesh and Uttar Pradesh—changed definitions since the 1993 survey (denoted by bold italics): The 1999 survey contains sufficiently detailed geographic information to permit mapping to the 2006 state definitions, which allows trends to be measured from 1999 to 2006 for these three original states plus their split-off parts of Chhattisgarh (from Madhya Pradesh), Jharkhand (from Bihar) and Uttarakhand (formerly known as Uttaranchal, from Uttar Pradesh). \*‡For the later two surveys, this group included Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura; for the first survey, Sikkim was not included because it was not sampled in 1992–1993. \*§No data presented because unweighted N<25. Note: na=not applicable.



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