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Prevalence of Child Marriage and its Impact on the Fertility and Fertility Control Behaviors of Young Women in India

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Abstract

Objectives—Child marriage in India is considered a major barrier to the nation's social and economic development, as well as a major women's health concern. The current study assesses prevalence of child marriage (i.e., marriage prior to the national legal age of 18 years) among young adult women in India, and associations between child marriage and women's fertility and fertility control behaviors.

Study Design—Cross-sectional analyses of a nationally representative household sample of Indian women ages 16–49 years (N=124,385) collected in 2005–2006 via the National Family Health Survey-3.

Participants—Analyses were restricted to women age 20–24 years (n=22,807) and the subsample of ever married women aged 20–24 years (n=14,628).

Data Analysis—Prevalence estimates of child marriage were produced for all women 20–24 years. Using the ever married subsample, simple regression models, models adjusted for demographics, and models adjusted for demographics and duration of marriage were constructed to estimate the odds ratios (ORs) and 95% confidence intervals (CIs) for the associations between child marriage and both fertility and fertility control outcomes.

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Fertility and Fertility Control Outcomes—No contraception prior to childbirth, childbirth within first year of marriage, high fertility (3 or more births), history of recent rapid repeat childbirth, unwanted pregnancy, and female sterilization.

Results—Child marriage was reported by 44.5% of Indian women ages 20-24 years; 22.6% reported marriage prior to age 16 years, and 2.6% were married prior to age 13 years. Child marriage was significantly associated with women's increased risk for no contraceptive use prior to first childbirth (AOR=1.37, 95% CI=1.22, 1.54), high fertility (AOR=7.40, 95% CI=6.45, 8.50), history of rapid repeat childbirth (AOR=3.00, 95% CI=2.74, 3.29), multiple unwanted pregnancies (AOR=2.36, 95% CI=1.90, 2.94), pregnancy termination (AOR=1.22; 95% CI=1.06, 1.41) and female sterilization (AOR=5.54, 95% CI=4.86, 6.32) relative to women married at 18 years or older. Associations between child marriage and rapid repeat childbirth, multiple unwanted pregnancies, pregnancy termination and sterilization remained significant after controlling for duration of marriage.

Conclusions—Child marriage remains pervasive in India and is linked to high and less controlled fertility, as well as increased likelihood of termination and sterilization by young adulthood. While greater enforcement of existing policies are critical to preventing child marriage, education and support services regarding family planning for adolescent wives and their families are also clearly indicated in order to reduce the reproductive health consequences of this socially normative practice.

Keywords

child marriage; family planning; India

Child marriage, defined by UNICEF as marriage prior to age 18 years, is a reality for over 60 million women worldwide.¹ Increasingly recognized as a human rights violation,^{2,3} the practice has decreased at a global level over the past 20 years.⁴ Nonetheless, marriage of female minors remains strikingly common across South Asia, where over half of all child marriages occur. Prevalence data from the prior decade indicate that approximately 30-70% of married young women in South Asian nations (i.e., Bangladesh, Nepal, India and Pakistan) are married prior to age 18 years.^{1,5} This practice has serious consequences for national development, stunting the educational and vocational opportunities for a large sector of the population.^{1,5} Further, marriage at a very young age has grave health consequences for both child brides and their children. Women married as minors are more likely than those married as adults to report early, frequent and unplanned pregnancies (typically as a consequence of non-contraceptive use), which have been consistently linked to increased risk for maternal and infant morbidity and mortality.^{1,2,6} Adolescent mothers are also more likely those of majority age to experience fistula, pregnancy complications, and death in childbirth.^{2,5,6} Current United Nations (UN) prioritization of maternal health, infant mortality and women's empowerment, as indicated by inclusion of these issues in the UN Millennium Development Goals,⁷ reinforce the urgent need to understand and reduce child marriage and its impact on maternal and child health, particularly within South Asia where more than one-third of all maternal and child deaths occur.⁸ However, despite the pervasiveness and severe consequences ascribed to this practice, little empirical research has been published in the past decade on this issue or the related public health consequences, creating a critical gap hindering the work of both practitioners and policy makers.

India, the largest and most prosperous nation within South Asia, has maintained laws against child marriage since 1929, although at that time the legal age of marriage was set at 12 years. The legal age for marriage was increased to 18 years for girls in 1978. Sadly, the most recently published population-based estimate on child marriage in India, that from 1998-1999, reveals that 50% of women 20-24 years were married as children.^{1,5} Although these data clearly indicate that previous policies have been inadequate to sufficiently curb the practice of child marriage, the data cannot reflect the potential effects of more recent structural and policy

changes in the country. Within the past 15 years, India has experienced a number of economic reforms resulting in substantial increases in personal wealth among large numbers of its citizens;⁹⁻¹² simultaneously, this same period has seen the development of national policy efforts promoting increased educational and economic opportunities for women and girls.^{13, 14} Finally, and perhaps most importantly, policy and programs focused on child marriage prevention and family planning support for poor and rural women and girls have been significantly expanded in the past decade.⁵ These efforts have brought national public attention to this issue, including recent policy proposals by the Law Commission of India, ensuring legal protections are available to girls regardless of state.⁴

The purpose of the current study is to determine whether changes have occurred in the prevalence of child marriage in India during the past decade, and to clarify the associations of this practice with fertility and fertility control among young women. Using data collected in 2005 and 2006 via the National Family Health Survey-3 (NFHS-3), the current study assesses prevalence of child marriage in India among a nationally representative sample of young adult women. The impact of child marriage in India on fertility and fertility control behaviors (e.g., contraceptive use, sterilization) and indicators (e.g., unwanted pregnancy, rapid repeat childbirth) is also calculated.

Method

Sample

This study utilized the India National Family Health Survey-3 (NFHS-3), conducted by the International Institute for Population Sciences (IIPS) and Macro International from November 2005 to August 2006.¹⁵ The NFHS-3 involved household surveys administered verbally via a trained interviewer to minimize potential literacy barriers in either English or the principal language of each Indian state based on the preference of household members. A nationally representative household-based sample was created via a stratified, multistage cluster sampling strategy. A uniform sampling design was used across all states, with urban and rural samples drawn separately and proportionate to the state, unless oversampling was required for an area or group. For both urban and rural areas, geographic sampling units were obtained and random household sampling was undertaken in chosen units (or within randomly selected census blocks for urban areas). These procedures generated a sample of 124,385 female participants at a 95% response rate. Further details of data collection and management procedures are described elsewhere.¹⁵ To inform research questions concerning current prevalence of child marriage, the analytic sample was limited to women aged 20-24 years, married and unmarried (n=22,807; 18.3% of the female sample); to determine differences in fertility outcomes based on child versus adult marriage, analyses were conducted among the ever married subsample of women aged 20-24 years (n=14,628, 64.1% of the total female sample in this age range). Analyses for this study were conducted via funding from the National Institutes of Health (NIH, United States) and the Indian Council on Medical Research (ICMR, India) Indo-US Program on Maternal and Child Health and Human Development (Grant Number: 1 R03 HD055120-01).

Measures

Demographics were assessed via single items regarding age, education, religion, rural/town/city area of residence, and national region of residence; national regions of residence were defined as follows-- NORTH: New Delhi, Haryana, Himachal Pradesh, Jammu/Kashmir, Punjab, Rajasthan, Uttaranchal; CENTRAL: Madhya Pradesh, Uttar Pradesh, Chhattisgarh; EAST: Bihar, Orissa, West Bengal, Jharkhand; NORTHEAST: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura; WEST: Goa, Gujarat, Maharashtra; SOUTH: Andhra Pradesh, Karnataka, Kerala, Tamil Nadu. Categorizations were based on those created by IIPS, the implementing institution for these surveillance efforts.¹⁵

A relative index of household wealth was calculated based on a standard set of interviewer-observed assets including ownership of consumer items and dwelling characteristics; individuals were ranked based on their household score and divided into quintiles with 1 = poorest and 5 = wealthiest 20% of households. Marital characteristics included marital status and partner age and education. Marital status was measured via a single item inquiring as to whether participants were currently married, separated, divorced, widowed or never married. A variable representing marriage to a significantly older husband was constructed based on husband and participant age to indicate whether a husband was 10 or more years older than the participant. *Child marriage* was coded based on participant's response to age at marriage; those indicating marriage prior to 18 years were defined as experiencing child marriage. Based on the NFHS-3 coding scheme,¹⁵ married women included those self-identifying themselves as either married or in situations of *gauna* (i.e., where the marriage has occurred but the couple does not yet have sex or live together).

Lack of fertility control prior to first childbirth was assessed via single items regarding the number of children born prior to use of contraception and lifetime use of contraception. Those women who had not had children were classified as using contraception prior to their first childbirth if they had ever used contraception, and women were classified as not using contraception prior to first childbirth if they reported never having used contraception. Early fertility was operationalized as childbirth within the first year of marriage, and assessed via a single item regarding duration of marriage prior to first birth; those who had not given birth were classified as not having childbirth in first year of marriage.

High lifetime fertility was assessed via items on the number of boy and girl children to whom participants had given birth; these data were summed to provide a total number of births across the lifetime. Participants were defined as having high fertility based on a median split for this variable, i.e., having had 3 or more children. Low lifetime fertility control was operationalized as a history of rapid repeat childbirth. This was assessed via single items included for each birth regarding number of months subsequent to a previous childbirth; based on the conventional definition of rapid repeat pregnancy, rapid repeat childbirth was defined by having a history of a birth less than 24 months subsequent to a previous childbirth.¹⁶ Unwanted pregnancy ever was assessed via a series of items for each birth regarding whether the participant wanted the child at that time, wanted the child later or wanted no more children. Those indicating either wanting the child later or wanting no more children were categorized as experiencing an unwanted pregnancy; those indicating 2 or more unwanted pregnancies were defined as having had multiple unwanted pregnancies. Pregnancy termination was assessed by a single yes/no item question asking participants whether they had ever had a pregnancy that resulted in miscarriage, abortion or stillbirth. Sterilization was assessed via a single item regarding forms of modern contraception (e.g., hormonal methods, barrier methods, female sterilization) and traditional contraception (e.g., rhythm method, lactational amenorrhea) currently used by participants.

Data Analysis

Prevalence estimates for child marriage in India were calculated for the total sample of women 20-24 years. Differences in child marriage by demographics and marital characteristics were assessed via chi-square analyses; significance for all analyses was set at $p < 0.05$. Utilizing the ever married subsample, a series of logistic regression models were constructed to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for associations between child marriage and fertility and fertility control outcomes. Crude models and those adjusting for major demographics (age, education, wealth index, rural/town/city area of residence, national region of residence, and religion) were created. Finally, a series of adjusted regression models were created to control for both demographics and duration of marriage. These analyses were

performed to assess the effect of child marriage on fertility and fertility-control outcomes beyond that attributable to lengthier marriage (a consequence of earlier marriage), as lengthier marriage provides more opportunity for outcomes such as high fertility and unwanted and terminated pregnancy. Prior to conducting these additional adjusted analyses, a Pearson correlation statistic was calculated to ensure that duration of marriage and child marriage were not collinear. All statistical analyses were conducted using SPSS 15.0.1. All analyses were weighted to account for selection probability and non-response using the national women's testing weight for the entire NFHS-3 women's sample. The national level weight was calculated to account for differences in sampling proportions across states and is normalized for the NFHS sample as a whole.¹⁵ Hence, utilizing the national level weight allows for analyses that produce results representative of the national population.

Results

Sample Characteristics

Participants (N=22,807) reported a median age of 22 years (mean age=21.9 years, SD=1.4). Approximately one-third of the sample (31.4%) had no formal education, and 67.2% resided in rural locales. (See Table 1.) Most women (74.5%) reported a history of marriage; a very small proportion of these (0.8%) were no longer married due to divorce or having been widowed. Among the subsample of those ever married (n=14,628; note: this does not directly correspond to 74.5% of the total sample due to use of weighted analyses), the median age of current husbands was 27 years (mean age of husband=27.7 years, SD=4.1); the median age difference between women and their husbands was 5 years (mean=5.7 years, SD=3.9 years). Fourteen percent of married women (14.3%) reported husbands who were 10 or more years older than themselves. Three-fourths of ever married women (74.7%) reported having given birth to at least one child.

Prevalence of Child Marriage and Associations between Child Marriage and Demographic Characteristics

More than 2 in 5 (44.5%) young adult Indian women reported being married prior to age 18 years; more than 1 in 5 participants (22.6%) reported marriage prior to age 16 years. (See Table 1). A smaller number (2.6%) reported marriage prior to age 13 years. The highest prevalence of child marriage (marriage prior to 18 years) was reported among those who were ages 22 to 24 years, having less than a secondary education, residing in rural areas or in the Central or Eastern regions of the country, and being in the lower two quintiles of wealth. (See Table 2.) Child marriage was also more common among Hindus, Muslims and Buddhists relative to Christians, Sikhs, and others. Among ever married participants, child marriage was more common among those women reporting husbands who were 10 or more years older and less educated.

High Fertility, Low Fertility Control, and Poor Fertility Outcomes among Ever Married Women

A large majority (90.8%) of young married women reported no contraception efforts prior to having their first child; 23.9% reported having a child within the first year of their marriage. The majority of young married women (81.2%) reported at least one childbirth, with more than one in six (17.4%) reporting three or more children. Slightly less than one-fourth of women (23.0%) reported a history of rapid repeat childbirth, and 15.2% of women reported an unwanted pregnancy; a far smaller number (3.1%) reporting multiple unwanted pregnancies. Fifteen percent of women (15.3%) reported a history of pregnancy termination (i.e., miscarriage, abortion, or stillbirth). More than one in eight young women (13.4%) had been surgically sterilized; of those not sterilized, 77.2% reported no current contraceptive use.

Associations of Child Marriage and High Fertility, Low Fertility Control and Poor Fertility Outcomes

Regression analyses adjusted for relevant demographic variables demonstrated that women married as minors, as compared with those married in adulthood, were significantly more likely to report no contraceptive use prior to having children (AOR=1.37, 95% CI=1.22, 1.54; see Table 3); however, child marriage was not significantly associated with childbirth in the first year of marriage. Median age at first birth was 17 years (mean=17.3 years, SD=2.0) for women married as minors; among mothers married as adults, median age at first birth was 20 years (mean=20.5 years, SD=1.4). Women married as minors were significantly more likely to give birth as minors ($p<.001$); 99.7% of women reporting childbirth as minors also reported child marriage.

Young Indian women married as minors were also more likely than those married as adults to have given birth to a child (AOR=5.71, 95% CI=5.20, 6.26), to have given birth to three or more children (AOR=7.40, 95% CI=6.45, 8.50), and to have had a history of rapid repeat childbirth (AOR=3.00, 95% CI=2.74, 3.29). Child marriage was also linked to history of unwanted pregnancy (AOR=1.67, 95% CI=1.51, 1.83) and multiple unwanted pregnancies (AOR=2.36, 95% CI=1.90, 2.94), as well as a history of pregnancy termination (AOR=1.48; 95% CI=1.34, 1.63). Finally, young women married as minors, compared with those married as adults, were more likely to report having been sterilized (AOR=6.68, 95% CI=5.78, 7.60).

To assess effects of child marriage beyond earlier (i.e., increased) opportunity for reproduction and, thus, experiences of high fertility and low fertility control, duration of marriage was included in final adjusted models. In these final models, women reporting child marriage remained significantly more likely to have given birth to 3 or more children (AOR=1.30, 95% CI=1.10, 1.53), to have a history of rapid repeat childbirth (AOR=1.42, 95% CI=1.25, 1.61), to have had multiple unwanted pregnancies (AOR=1.43, 95% CI=1.10, 1.87), to have experienced a pregnancy termination (AOR=1.22; 95% CI=1.06, 1.41) and to have been sterilized (AOR=2.08, 95% CI=1.73, 2.49).

Given the observed association of child marriage and female sterilization among young women across models, and the high rate of sterilization among women reporting marriage as minors (19.5%), additional exploratory analyses were conducted to assess length of time since sterilization among those reporting this procedure, stratified by child marriage. Among the 4.6% of young women married as adults and sterilized, 79.4% were sterilized in the past 2 years, and 20.6% were sterilized 2-3 years ago. Among the 19.5% of young women married as minors and reporting sterilization, 48.3% were sterilized in the past 2 years; 34.4% were sterilized 2-3 years ago, and 16.4% were sterilized 4 or more years ago. Approximately one in ten women reporting both child marriage and sterilization (9.7%) were sterilized prior to age 18 years.

Discussion

The current findings document that approximately 45% of young adult women in India were married before the legal age of 18 years, with rural, poor, less educated girls as well as those from Central or Eastern regions of the country being most vulnerable to the practice; these findings are consistent with previous Indian research.¹⁷⁻²³ The currently observed prevalence of child marriage represents a reduction of 5% based on the prevalence observed from 1998-1999 national data (50%),⁵ suggesting that the slow decline in the practice of early marriage within India is continuing.¹⁸⁻²¹ Nonetheless, the child marriage rate in India clearly remains unacceptably high. Further, more than 1 in 5 young adult women in India, or approximately half of those married as minors, are married prior to age 16 years. Such findings indicate that child marriage in India affects not only adolescents of 16 and 17 years, but also

large numbers of pubescent girls of 14 and 15 years. These results suggest that neither the recent progress in Indian economic and women's development,^{6,7,10} nor the existing policy or programmatic efforts to prevent child marriage and promote maternal and child health internationally and in India,^{5,9,10} have been sufficient to bring levels of child marriage to within the range of most other developing nations.^{1,5} National economic development gains have been documented as reaching the rural and poorest populations of the country to a relatively small extent,^{10,11} and this inadequate reach may well be hindering any the potential effects of such gains on child marriage across the country. Future work should examine whether poorer and rural areas that have benefited from economic development to a greater extent have experienced greater reductions in child marriage relative to such areas benefiting to a lesser extent over the same time period.

In addition to documenting the continued pervasiveness of child marriage in India, current findings also demonstrate that this practice is linked with higher and less controlled fertility among young women, reducing contraception early in marriage, increasing fertility rates, and inflating poor fertility outcomes including unwanted, rapid repeat and terminated pregnancies. These findings support previous research documenting earlier fertility, higher fertility, poor fertility outcomes, inadequate spacing between children, and lower contraceptive use among married adolescents compared with married young adults across developing nations.^{1,2,5,6,24} Although the currently observed associations appear to have been, in part, attributable to lengthier time in marriage (hence, greater opportunity for fertility and fertility-related issues) among those married as minors rather than adult, the majority of effects persisted after adjusting for marriage length, strongly indicating that the social context of child marriage reduces young women's control over their reproduction into adulthood. Possible mechanisms related to this context include lower contraception knowledge and access to family planning services among adolescent wives^{5,6} reduced family planning decision making control in marriages to older male partners, as well heightened control by in-laws.^{5,6,21,23,25}

Notably, while findings demonstrate that women married as minors are more likely than those married as adults to have low fertility control, they are also significantly more likely to be sterilized, a finding documented in previous research with Indian women.²⁰ Of note, sterilization for this age group in India is almost exclusively female; where 13% of women aged 20-24 years reported female sterilization, only 0.2% of this group reported male sterilization.²⁶ It has been hypothesized that higher rates of sterilization among young women married as minors are attributable to these women having their desired number of children at an earlier age, as indicated by their higher fertility.²⁰ However, our findings suggest that it may also be the consequence of inadequate fertility control, as evidenced by the currently observed increased risk for unwanted pregnancies among women reporting child marriage. Regardless, research is needed to understand young women's motivations for, social context of, and control over such early in life sterilization. Findings from this work document that among those married as minors, of whom 20% had been sterilized, 1 in 10 were sterilized prior to age 18. This issue is a particular concern as sterilization may reduce likelihood of condom use among couples, heightening risk for HIV and other sexually transmitted infections.²⁷

Although findings from the current study offer important insights into child marriage in India and relations to young women's fertility and fertility control, they must be interpreted in the light of certain study limitations. Outcomes were based on self-report and are vulnerable to social desirability and recall biases. The pregnancy termination variable does not distinguish between forms of termination (miscarriage, abortion or stillbirth); research is needed to assess whether child marriage is linked to specific or all forms of pregnancy termination. Analyses are cross-sectional; thus, causality cannot be assumed. However, as child marriage occurred prior to the assessed fertility related outcomes, ordering of events can be assumed. Finally, findings are specific to young adult women in India, and cannot be generalized to other national

contexts and women of other age groups within India. However, current findings are consistent with those observed for African and other South Asian countries and among samples of differing ages.^{1,2,5,8,25}

Conclusion and Implications

The current study documents the pervasiveness of child marriage in India, with almost half of young adult women in this country continuing to be married prior to age 18 years. While this is a reduction from the child marriage prevalence observed for India at the close of the previous decade, the practice clearly remains normative in scope. Further, these findings reveal that young women married as children are more likely than those married as adults to report early and high fertility, inadequate birth spacing and fertility control, unwanted pregnancy, pregnancy termination and early sterilization, factors linked to numerous poor maternal and child health outcomes.^{1,2,5,6} Thus, these findings demonstrate the critical need for increased family planning intervention efforts tailored to married adolescents; current child marriage programs primarily focused on prevention and targeting unmarried minor girls must be broadened to address intervention for married adolescents and men who might pursue child brides. Given the high rates of non-contraceptive use for the population as a whole, better family planning education, access and support are needed for women in India, generally; such efforts must also target male partners, who may be older and stronger decision-makers on reproductive health issues. However, the need for emphasis on childbirth spacing and contraception other than sterilization appears to be especially urgent among young women married as minors. Such efforts must be based and centered on women's needs, but they must also include involvement of husbands and in-laws given evidence of their pre-eminent role in control of family planning for these women.^{5,8,25}

Although the above listed efforts are needed across India, it must be recognized that rural, poor and less educated girls and women remain most vulnerable to child marriage and its consequences. These findings speak to the need for strong national economic and women's development efforts that have the capacity to reach these least empowered in Indian society.^{5,8,11} Social change programs in the country must provide better educational and job opportunities for rural girls to provide them and their families with economically feasible options other than early marriage. Although rural health care and health care access has been in crisis within India,²⁸ the country has been working towards addressing these concerns via initiatives such as the building of public-private partnerships to expand reach into rural areas and the National Rural Health Mission (NRHM),²⁹⁻³⁰ which has shown some capacity to improve maternal health and health care access in India.³¹ However, more federal efforts are clearly needed to meet child marriage prevention and intervention needs in rural areas. India, through the NRHM and other rural health initiatives, must establish child marriage reduction as a key element of its programmatic work given the preponderance of these issues in rural India. Maternal and child health, as well as family planning, are existing priorities for the country; expansion of these existing efforts is needed to provide programs tailored to reach adolescent and young adult wives and mothers, as well as their male partners.

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Table 1
Child Marriage Prevalence and Demographic Profile of 20-24 year old women in India (N=22,807).

	Total Sample N=22,807 % (n *)
Child Marriage	
< 18 years	44.5 (7730)
< 16 years	22.6 (3736)
< 13 years	2.6 (436)
Age	
20	24.2 (5380)
21	18.4 (4291)
22	21.0 (4809)
23	18.9 (4331)
24	17.6 (3996)
Highest Level of Education	
No Formal Education	31.4 (5264)
Primary Education	13.5 (2862)
Secondary Education	42.9 (11,058)
Higher Education	12.2 (3622)
Area of Residence:	
Mega City	3.4 (1469)
Large City	7.9 (3358)
Small City	9.1 (1722)
Large Town	2.2 (804)
Small Town	10.2 (3076)
Rural	67.2 (12,378)
Region of Residence	
North	13.5 (4295)
Central	23.0 (4003)
East	22.6 (3374)
Northeast	4.2 (4136)

Total Sample N=22,807 % (n [*])	
West	15.1 (2945)
South	21.6 (4054)
Wealth Index	
Poorest	16.4 (2394)
Poorer	18.5 (3176)
Middle	20.8 (4476)
Richer	22.2 (5829)
Richest	22.0 (6932)
Religion	
Hindu	79.9 (16,244)
Muslim	14.5 (3364)
Christian	2.3 (2004)
Sikh	1.8 (506)
Buddhist/Neo, Buddhist	.8 (326)
Other	.7 (363)
Ever Married	
Yes	74.5 (14,628)
No	25.5 (8179)
Table 1a. Child Marriage Prevalence and Demographic Profile of 20-24 year old women in India (weighted N=22,779)	
Total Sample Weighted N=22,779 % (weighted n)	
Child Marriage	
< 18 years	44.5 (10,140)
< 16 years	22.6 (5145)
< 13 years	2.6 (582)
Age	
20	24.2 (5504)
21	18.4 (4184)

Total Sample N=22,807 % (n [*])	
22	21.0 (4781)
23	18.9 (4310)
24	17.6 (4000)
Highest Level of Education	
No Formal Education	31.4 (7149)
Primary Education	13.5 (3073)
Secondary Education	42.9 (9767)
Higher Education	12.2 (2790)
Area of Residence:	
Mega City	3.4 (765)
Large City	7.9 (1807)
Small City	9.1 (2070)
Large Town	2.2 (494)
Small Town	10.2 (2332)
Rural	67.2 (15,311)
Region of Residence	
North	13.5 (3067)
Central	23.0 (5244)
East	22.6 (5154)
Northeast	4.2 (949)
West	15.1 (3439)
South	21.6 (4927)
Wealth Index	
Poorest	16.4 (3743)
Poorer	18.5 (4214)
Middle	20.8 (4741)
Richer	22.2 (5060)
Richest	22.0 (5021)

	Total Sample N=22,807 % (n [*])
Religion	
Hindu	79.9 (18,201)
Muslim	14.5 (3311)
Christian	2.3 (517)
Sikh	1.8 (402)
Buddhist/Neo, Buddhist	.8 (179)
Other	.7 (169)
Ever Married	
Yes	74.5 (16,960)
No	25.5 (5819)

* Sample and subsample sizes do not perfectly correspond to proportions presented due to use of weighted analyses.

Table 2

Prevalence of No Marriage, Adult Marriage and Child Marriage by Demographic Characteristic, for 20-24 year old women in India (N=22,807). Chi-square Analyses to Assess Associations between Child Marriage and Demographics.

Age	% (n) Reporting No Marriage by Characteristic	% (n) Reporting Adult Marriage by Characteristic	% (n) Reporting Child Marriage by Characteristic	p-value*
20	36.9 (2574)	21.9 (1104)	41.2 (1702)	<.0001
21	29.1 (1771)	27.8 (1147)	43.1 (1373)	
22	23.2 (1592)	30.8 (1505)	46.1 (1712)	
23	17.7 (1180)	34.8 (1583)	47.4 (1568)	
24	12.5 (877)	42.1 (1744)	45.5 (1375)	
Highest Level of Education				<.0001
No Formal Education	5.8 (485)	22.6 (1298)	71.6 (3481)	
Primary Education	13.2 (542)	28.2 (856)	58.5 (1464)	
Secondary Education	28.6 (4203)	39.1 (4125)	32.3 (2730)	
Higher Education	71.9 (2763)	25.6 (804)	2.5 (55)	
Area of Residence:				<.0001
Mega City	48.5 (714)	30.2 (447)	21.3 (308)	
Large City	41.4 (1459)	34.3 (1132)	24.2 (767)	
Small City	38.8 (733)	32.8 (555)	28.4 (434)	
Large Town	35.8 (412)	34.2 (216)	30.0 (176)	
Small Town	33.9 (1390)	33.3 (911)	32.8 (775)	
Rural	17.8 (3286)	29.7 (3822)	52.5 (5270)	
Region of Residence				<.0001
North	29.5 (1628)	34.0 (1510)	36.5 (1157)	
Central	17.8 (911)	29.2 (1249)	53.0 (1843)	
East	18.5 (892)	27.9 (945)	53.6 (1537)	
Northeast	38.21 (965)	26.8 (1127)	35.0 (1044)	
West	28.5 (1207)	34.7 (922)	36.9 (816)	
South	30.1 (1391)	31.7 (1330)	38.2 (1333)	

Characteristic	% (n) Reporting No Marriage by Characteristic	% (n) Reporting Adult Marriage by Characteristic	% (n) Reporting Child Marriage by Characteristic	p-value *
Wealth Index				<.0001
Poorest	7.5 (219)	22.2 (541)	70.4 (1634)	
Poorer	12.3 (553)	24.9 (841)	62.7 (1782)	
Middle	20.6 (1264)	29.5 (1378)	49.8 (1834)	
Richer	28.6 (2181)	37.3 (2026)	34.1 (1622)	
Richest	47.7 (3777)	36.8 (2297)	15.5 (858)	
Religion				<.0001
Hindu	23.7 (5220)	30.8 (5116)	45.6 (5908)	
Muslim	23.0 (1122)	30.8 (1034)	46.2 (1199)	
Christian	49.7 (1106)	27.7 (542)	22.6 (356)	
Sikh	43.6 (224)	38.9 (193)	17.4 (89)	
Buddhist/Neo, Buddhist	31.8 (148)	27.4 (88)	40.8 (90)	
Other	36.7 (174)	31.4 (101)	32.0 (88)	
Table 2a. Prevalence of No Marriage, Adult Marriage and Child Marriage by Demographic Characteristic, for 20-24 year old women in India (weighted N=22,779). Chi-square Analyses to Assess Associations between Child Marriage and Demographics				
Characteristic	% (weighted n) Reporting No Marriage by Characteristic	% (weighted n) Reporting Adult Marriage by Characteristic	% (weighted n) Reporting Child Marriage by Characteristic	p-value *
Age				<.0001
20	36.9 (2030)	21.9 (1204)	41.2 (2270)	
21	29.1 (1218)	27.8 (1163)	43.1 (1803)	
22	23.2 (1108)	30.8 (1472)	46.1 (2202)	
23	17.7 (765)	34.8 (1500)	47.4 (2045)	
24	12.5 (498)	42.1 (1682)	45.5 (1820)	
Highest Level of Education				<.0001
No Formal Education	5.8 (412)	22.6 (1616)	71.6 (5121)	
Primary Education	13.2 (407)	28.2 (868)	58.5 (1798)	
Secondary Education	28.6 (2794)	39.1 (3822)	32.3 (3151)	
Higher Education	71.9 (2005)	25.6 (715)	2.5 (70)	

Area of Residence:	% (n) Reporting No Marriage by Characteristic	% (n) Reporting Adult Marriage by Characteristic	% (n) Reporting Child Marriage by Characteristic	p-value*
Mega City	48.5 (371)	30.2 (231)	21.3 (163)	<.0001
Large City	41.4 (749)	34.3 (620)	24.2 (438)	
Small City	38.8 (803)	32.8 (679)	28.4 (588)	
Large Town	35.8 (177)	34.2 (169)	30.0 (148)	
Small Town	33.9 (791)	33.3 (777)	32.8 (764)	
Rural	17.8 (2727)	29.7 (4545)	52.5 (8039)	
Region of Residence				<.0001
North	29.5 (906)	34.0 (1042)	36.5 (1119)	<.0001
Central	17.8 (935)	29.2 (1532)	53.0 (2777)	
East	18.5 (955)	27.9 (1437)	53.6 (2762)	
Northeast	38.2 (363)	26.8 (255)	35.0 (332)	
West	28.5 (979)	34.7 (1192)	36.9 (1268)	
South	30.1 (1482)	31.7 (1562)	38.2 (1882)	
Wealth Index				<.0001
Poorest	7.5 (279)	22.2 (830)	70.4 (2634)	<.0001
Poorer	12.3 (519)	24.9 (1050)	62.7 (2644)	
Middle	20.6 (978)	29.5 (1401)	49.8 (2363)	
Richer	28.6 (1447)	37.3 (1890)	34.1 (1724)	
Richest	47.7 (2396)	36.8 (1850)	15.5 (776)	
Religion				<.0001
Hindu	23.7 (4307)	30.8 (5599)	45.6 (8295)	<.0001
Muslim	23.0 (760)	30.8 (1020)	46.2 (1531)	
Christian	49.7 (257)	27.7 (143)	22.6 (117)	
Sikh	43.6 (175)	38.9 (156)	17.4 (70)	
Buddhist/Neo, Buddhist	31.8 (57)	27.4 (49)	40.8 (73)	
Other	36.7 (62)	31.4 (53)	32.0 (54)	

NOTE: Sample and subsample sizes do not perfectly correspond to proportions presented due to use of weighted analyses.

* p-values based on chi-square tests

Table 3

Logistic regression analyses¹ to assess associations between child marriage with fertility and fertility control indicators in early marriage and over the lifetime, among 20-24 year old, ever-married women in India (n=14,628).

EARLY IN MARRIAGE INDICATORS	% for Adult Marriage Subsample n=7018	% for Child Marriage Subsample n=7610	OR (95% CI)	AOR* (95% CI)	AOR** (95% CI)
No Contraception Prior to 1st Child			1.95 (1.76, 2.17)	1.37 (1.22-1.54)	NA
Yes	87.5 (6095)	93.2 (7081)			
No	12.5 (919)	6.9 (526)			
Childbirth in 1 st Year of Marriage			1.09 (1.01, 1.18)	1.03 (.95, 1.12)	NA
Yes	18.8 (1459)	19.6 (1617)			
No	81.2 (5559)	80.4 (5993)			
LIFETIME INDICATORS					
Birth to Any Children			5.82 (5.22, 6.35)	5.71 (5.20, 6.26)	.89 (.79, 1.01)
Yes	65.9 (4601)	91.8 (7034)			
No	34.1 (2417)	8.2 (576)			
Birth to 3+ Children			10.19 (8.91, 11.66)	7.40 (6.45, 8.50)	1.30 (1.10, 1.53)
Yes	3.5 (216)	27.1 (2023)			
No	96.5 (6802)	72.9 (5587)			
History of Rapid Repeat Childbirth			3.26 (2.99, 3.54)	3.00 (2.74, 3.29)	1.42 (1.25, 1.61)
Yes	12.0 (799)	30.7 (2377)			
No	88.0 (6219)	69.3 (5233)			
Any Unwanted Pregnancy			1.56 (1.43, 1.70)	1.67 (1.51, 1.83)	1.08 (.95, 1.21)
Yes	12.0 (853)	17.5 (1386)			
No	88.0 (6155)	82.5 (6208)			
Multiple Unwanted Pregnancies			2.52 (2.05, 3.10)	2.36 (1.90, 2.94)	1.43 (1.10, 1.87)

	% for Adult Marriage Subsample n=7018	% for Child Marriage Subsample n=7610	OR (95% CI)	AOR* (95% CI)	AOR** (95% CI)
Yes	1.7 (123)	4.1 (312)			
No	98.3 (6885)	95.9 (7282)			
Pregnancy Termination, Ever			1.41 (1.29-1.54)	1.48 (1.34-1.63)	1.22 (1.06-1.41)
Yes	12.7 (8330)	17.1 (1236)			
No	87.3 (6185)	82.9 (6374)			
Sterilized			5.02 (4.44, 5.68)	6.68 (5.78, 7.60)	2.08 (1.73, 2.49)
Yes	4.6 (270)	19.5 (1354)			
No	95.4 (6748)	80.5 (6256)			
Table 3a. Logistic regression analyses ¹ to assess associations between child marriage with fertility and fertility control indicators in early marriage and over the lifetime, among 20-24 year old, ever-married women in India (weighted n=16,960).					
	% for Adult Marriage Subsample Wt. n=6968	% for Child Marriage Subsample Wt. n=9992	OR (95% CI)	AOR* (95% CI)	AOR** (95% CI)
EARLY IN MARRIAGE INDICATORS					
No Contraception Prior to 1st Child			1.95 (1.76, 2.17)	1.37 (1.22-1.54)	NA
Yes	87.5 (6093)	93.2 (9305)			
No	12.5 (873)	6.9 (682)			
Childbirth in 1 st Year of Marriage			1.09 (1.01, 1.18)	1.03 (95, 1.12)	NA
Yes	19.1 (1330)	20.4 (284)			
No	80.9 (5638)	79.6 (7951)			
LIFETIME INDICATORS					
Birth to Any Children			5.82 (5.22, 6.35)	5.71 (5.20, 6.26)	.89 (.79, 1.01)
Yes	65.9 (4592)	91.8 (9176)			
No	34.1 (2376)	8.2 (816)			
Birth to 3+ Children			10.19 (8.91, 11.66)	7.40 (6.45, 8.50)	1.30 (1.10, 1.53)

	% for Adult Marriage Subsample n=7018	% for Child Marriage Subsample n=7610	OR (95% CI)	AOR* (95% CI)	AOR** (95% CI)
Yes	3.5 (246)	27.1 (2712)			
No	96.5 (6722)	72.9 (7279)			
History of Rapid Repeat Childbirth			3.26 (2.99, 3.54)	3.00 (2.74, 3.29)	1.42 (1.25, 1.61)
Yes	12.0 (836)	30.7 (3071)			
No	88.0 (6132)	69.3 (6921)			
Any Unwanted Pregnancy			1.56 (1.43, 1.70)	1.67 (1.51, 1.83)	1.08 (.95, 1.21)
Yes	12.0 (833)	17.5 (1742)			
No	88.0 (6125)	82.5 (8226)			
Multiple Unwanted Pregnancies			2.52 (2.05, 3.10)	2.36 (1.90, 2.94)	1.43 (1.10, 1.87)
Yes	1.7 (117)	4.1 (412)			
No	98.3 (6841)	95.9 (9556)			
Pregnancy Termination, Ever			1.41 (1.29-1.54)	1.48 (1.34-1.63)	1.22 (1.06-1.41)
Yes	12.7 (887)	17.1 (1706)			
No	87.3 (6081)	82.9 (8286)			
Sterilized			5.02 (4.44, 5.68)	6.68 (5.78, 7.60)	2.08 (1.73, 2.49)
Yes	4.6 (321)	19.5 (1952)			
No	95.4 (6647)	80.5 (8040)			

NOTE: Sample and subsample sizes do not perfectly correspond to proportions presented due to use of weighted analyses.

^I All analyses use women married as adults (age 18 years or older) as the referent group.

* Analyses adjusted for participant age, education level, wealth index, rural/city/town residence, national region, and religion

** Analyses adjusted for participant age, education level, wealth index, rural/city/town residence, national region, religion, and duration of marriage in years. As these additional analyses were conducted to determine if lifetime fertility and fertility control indicators were not solely a consequence of length of potential time for fertility, as indicated by duration of marriage, these adjusted analyses were not conducted for early in marriage fertility-related indicators.