

Understanding the Role of Education in the Age at Marriage of Women in India

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Abstract: Early marriage is linked to poor maternal and child health outcomes. Against this backdrop, this study addresses the role of women's educational attainment on their age of marriage in India. Data from 75,826 ever-married women aged 15-49 years gathered in the National Family Health Survey (2019-21) was analysed. Using Kaplan-Meier survival analysis and multivariate logistic regression models, we investigated associations among women's educational attainment and age at marriage. Women with higher levels of education had lower odds (OR=0.06, 95%CI= 0.05 to 0.07) of getting married below 18. Women from the Scheduled Tribe (OR=0.70, 95%CI= 0.66 to 0.74) and Other Backward Classes (OR= 0.92, 95%CI= 0.88 to 0.96) were less likely to marry before 18 than those from the general caste. Odds of early marriage were again low among women from higher-income households. Postponing marrying until the girls reach 18 years necessitates ensuring that females attend school and complete secondary education.

Keywords: age at marriage, educational attainment, ever-married women, India

Although child marriage has been significantly reduced, it is still widespread in sub-Saharan and South Asian nations. In South Asia, 285 million females under 18 are married, accounting for 44 % of the global load (UNICEF, 2018). For instance, although it has been illegal to marry before the age of 18 in India for over three decades, about half of all girls persist in doing so (Nguyen & Wodon, 2015). Early

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marriage promotes early childbirth, closed-spaced pregnancies, unintended pregnancies, and pregnancy loss (Adhikari et al., 2009). Early marriage and teenage pregnancies violate international human rights conventions and seriously endanger women's health, well-being, and future development (Psaki, 2016). Various adverse maternal outcomes are linked to early maternal reproduction in women. Low levels of education, poor growth, malnutrition, sickness, and mortality, particularly during childbirth, are a few of these. Children can also experience negative effects (Goli et al., 2015).

Despite implementing legislation and programs to stop the practice, girl-child marriage is still common in India (UNICEF, 2018). Women's education is frequently cited as the primary strategy for achieving the postponement of age at marriage. However, some recent research revealed that marriage patterns are changing globally, and developing nations are likewise no exception (Basu, 1998; Esteve & Cortina, 2006; Lloyd, 2005). Female education is a key program and policy component in lowering the frequency of early marriage among women (Svanemyr et al., 2012). In India, literate women rose from about nine per cent in 1951 to 66 % in 2011. Women can better decide on occupation, marriage, and family formation as their education levels rise. Girls who complete secondary or higher education significantly postpone getting married (Raj et al., 2014; Singh & Espinoza Revollo, 2016). Indians from various backgrounds adhere to rituals unique to their culture. As a result, marriage and kinship arrangements differ based on race, ethnicity, religion, and place of residence (Borkotoky & Gupta, 2016). More research has to be done on the factors that influence marriage patterns, particularly in India, where societal dynamics around marriage and mate choice are drastically changing. The most significant change has been a move from child to early teenage marriages, although many women continue to marry before reaching age 18 (Raj et al., 2014; Wodon et al., 2017).

In addition to schooling, several other potential factors, including economic standing, sociocultural and religious norms, the status of women's autonomy, and geographic residence, have a considerable impact on determining the age of marriage for women (Aryal, 2007, p. 701; Kamal, 2010; Kamal et al., 2015; Mathur et al., 2003; Nour, 2009; UNFPA, 2012). Past studies mainly focused on assessing early marriage's socioeconomic and demographic determinants at the individual and household levels. Furthermore, scant research has been done on the macro level about the association between educational attainment and teenage marriage among women. There are significant regional differences in education and economic standing in India. These challenges are particularly prevalent in India's east and central areas, where child marriage is still common. Therefore, this paper aims to examine the effects of schooling on the age of marriage of women in India.

Data and Methods

Study Population

We used data from the fifth round of the National Family Health Survey (NFHS-5) conducted in 2019-21 under the aegis of the Ministry of Health and Family Welfare (MoHFW), India. NFHS-5 is a nationally representative large-scale survey that covers all states and Union Territories of India. The survey covered 636,699 households, 724,115 women, and 101,839 men. The prime objective of NFHS is to provide reliable data on various health and family welfare issues, such as fertility, mortality, maternal and child health, sexual behaviours, and domestic violence. The NFHS-5 employed a two-stage stratified random sampling design for data collection (IIPS & ICF, 2021). Ever-married women aged 15-49 covered in the state module of the survey (n=75,826) were considered for the present analysis. This survey was conducted in conformity with internationally agreed-upon ethical norms for medical research. In the sampled households, an individual survey schedule was given to each consenting respondent. All procedures were carried out in conformity with the necessary standards and laws. All subjects and/or their legal guardian provided informed consent(s). The published survey report thoroughly describes the methodology, including details on the survey's design, data-gathering methods, ethical issues, and quality assurance procedures (IIPS & ICF, 2021). As this is an analysis of secondary data available in the public domain, no further ethical approval is necessary (<https://www.dhsprogram.com>).

Outcome Variable

The prevalence of early marriage among women was the outcome variable in this study. It was measured as the proportion of ever-married women married below 18 years of age. Here, we have recoded the variable as '1' for those women who got married below 18 years of age and '0' for those women who married at 18 years and above.

Exposure Variables

This study included relevant exposure variables suggested by existing literature (Delprato et al., 2017; Maitra, 2004; Male & Wodon, 2018; Marphatia et al., 2020). The variables were categorised into demographic and socioeconomic characteristics and factors related to women's empowerment status. This study identified women's educational attainment as the main explanatory variable. Women's educational attainment is categorised into five categories: i) no schooling, ii) 1-5 years, iii) 6-8 years, iv) 9-12 years, and v) 13 and above years of schooling. Other socioeconomic factors included household wealth status (poorest, poorer, middle, richer, richest), mass media exposure (not exposed, exposed), women's occupation (not working, agriculture and other sectors), type of marriage (consanguineous, non-consanguineous), and women's autonomy. Women's

autonomy is crucial in their ability to make marriage-related decisions. We have built a women's autonomy index based on the information collected on household decisions, movement, and financial decisions. Confirmatory factor analysis derives a single construct behind the various dimensions of women's autonomy, and the index was categorised into terciles (low '0', medium '1', and high '2').

The demographic characteristics included were the current age of women (15-24, 25-34, and 35-49), caste (Scheduled Castes – SC, Scheduled Tribes- ST, Other Backward Classes – OBC, others), religion (Hindu, Others), place of residence (urban, rural) and region. Region variable was categorised into six groups: North (Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, and Uttarakhand), Central (Chhattisgarh, Madhya Pradesh, and Uttar Pradesh), East (Bihar, Jharkhand, Odisha, and West Bengal), Northeast (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura), West (Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, and Maharashtra), and South (Andaman & Nicobar Islands, Andhra Pradesh, Karnataka, Kerala, Lakshadweep, Pondicherry, Tamil Nadu, and Telangana)(IIPS & ICF, 2021).

Statistical Analysis

Descriptive statistics were obtained, and the chi-square test was used to assess the association of selected background characteristics with the outcome variable. Additionally, the unadjusted and adjusted multivariate logistic regression was performed to analyse the association of age at marriage with selected background characteristics.

The equation for logistic regression is $l_n \left(\frac{\pi}{1-\pi} \right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n$

Where $X_1, X_2, X_3, \dots, X_n$ are explanatory variables and $\beta_1, \beta_2, \beta_3, \dots, \beta_n$ are regression coefficients.

Appropriate national sampling weights were used in the analysis. The baseline model of the multivariate analysis included all the potential factors along with the outcome variable. The statistical analysis was done in Stata 16.1, and a significance level of $p < 0.05$ was used. Additionally, Kaplan-Meier survival plots assessed the likelihood of women delaying their age of marriage stratified by women's educational level. Survival plots were assessed at the median ages (at a 95% Confidence Interval). These occurrences were experienced by women with various levels of education and women without education at all.

Results

Sample Profile

The detailed demographic, socioeconomic, and women's empowerment-related determinants of age at marriage are presented in Table 1. More than two-fifths (41%) of the women got married below 18 years, the legal age to marry in India. Of the respondents, 24% and 23% were from eastern and central regions. More than half of the respondents belonged to rural areas. Most (81%) women follow the Hindu religion. Almost 35% of women completed ten or more years of schooling. Among the respondents, three-fourths (75%) were exposed to mass media. More than half of the women were not currently working. Regarding domestic, financial, and health-related decision-making, just 10 % of women had higher autonomy. About 13% of the women were a blood relative to their spouses or partners before marriage.

Table 1

Percentage Distribution of Ever-Married Women Aged 15-49 Years in India, 2019-21

Background Characteristics	Per cent	Number
Women's Marriage Age in Years		
18 and above	58.8	44,547
Less than 18	41.3	31,278
Demographic Characteristics		
Women's Current Age in Years		
15-24	16.9	12,789
25-34	37.9	28,746
35-49	45.2	34,291
Caste		
SC	21.4	16,189
ST	9.1	6,905
OBC	43.8	33,210
Others	25.8	19,521
Religion		
Hindu	81.1	61,521
Others	18.9	14,305
Place of Residence		
Urban	31.0	23,516
Rural	69.0	52,310
Region		
North	14.1	10,694
Central	23.0	17,437
East	24.3	18,388
North-East	3.8	2,843
West	14.1	10,706
South	20.8	15,758
Socioeconomic Factors		
Women's Education (years)		

Background Characteristics	Per cent	Number
None	27.5	20,882
1-5	13.7	10,394
6-8	16.7	12,645
9-12	29.1	22,060
13-20	13.0	9,845
Wealth Status		
Poorest	18.7	14,170
Poor	20.3	15,410
Middle	20.5	15,573
Richer	20.4	15,491
Richest	20.0	15,182
Women's Empowerment Status		
Mass Media Exposure		
Not Exposed	24.7	18,758
Exposed	75.3	57,068
Women's Occupation		
Not working	69.1	52,362
Agriculture	18.0	13,626
Other sectors	13.0	9,838
Decision making autonomy		
Low	45.3	34,351
Medium	45.1	34,204
High	9.6	7,270
Type of Marriage		
Non-consanguineous	87.3	66,190
Consanguineous	12.7	9,636
Total	100	75,826

Prevalence of Marriage at Below Legal Age

Prevalence and association of age at marriage below 18 years with some selected background characteristics among ever-married women are presented in Table 2. Factors significantly associated with the early marriage of women included educational attainment of women (years), current age, caste, religion, residence, women's occupation, and decision-making autonomy of women ($p < 0.001$). The prevalence of early marriage was 41 % among ever-married women in the reproductive age group. The estimated prevalence of early marriage was 59 % in the case of uneducated women who never went to school in their lifetime. It is higher than those who had a certain level of education. Women from low-income households were more likely to marry before turning 18 than those from households with higher incomes. The prevalence of early marriage was 54 % among women not exposed to mass media. Forty-seven per cent of women involved in agricultural activities got married below 18.

Table 2

Percentage Distribution of Women Aged 15 to 49 Years According to Marriage at Age Less than 18 Years by Selected Characteristics of Women in India, 2019-21

Background Characteristics	Marriage below 18 years (%)	Chi-square (p-value)	N
<i>Demographic characteristics</i>			
Women's current age in years			
15-24	41.99	<0.001	12,789
25-34	36.62		28,746
35-49	44.85		34,291
Caste			
SC	45.85	<0.001	16,189
ST	44.59		6,905
OBC	40.38		33,210
Others	37.74		19,521
Religion			
Hindu	41.56	<0.001	61,521
Others	39.94		14,305
Place of residence			
Urban	31.86	<0.001	23,516
Rural	45.47		52,310
Region			
North	32.86	<0.001	10,694
Central	42.81		17,437
East	52.04		18,388
North-East	37.64		2,843
West	36.58		10,706
South	36.46		15,758
<i>Socioeconomic factors</i>			
Women's education in years			
none	58.60	<0.001	20,882
1-5	55.25		10,394
6-8	47.63		12,645
9-12	29.94		22,060
13-20	6.83		9,845
Wealth Status			
Poorest	54.88	<0.001	14,170
Poor	50.12		15,410
Middle	44.22		15,573
Richer	35.3		15,491

Background Characteristics	Marriage below 18 years (%)	Chi-square (p-value)	N
Richest	22.54		15,182
<i>Women's Empowerment Status</i>			
Mass Media Exposure			
Not Exposed	53.54	<0.001	18,758
Exposed	37.21		57,068
<i>Women's Occupation</i>			
Not working	39.34	<0.001	52,362
Agriculture	47.39		13,626
Other sectors	42.90		9,838
<i>Decision making autonomy</i>			
low	42.02	<0.001	34,351
medium	41.62		34,204
high	40.41		7,270
<i>Type of marriage</i>			
non-consanguineous	40.80	<0.001	66,190
consanguineous	44.35		9,636
Total	41		75,826

Forty-two per cent of the women got married below 18 in the case of women with low decision-making autonomy, compared to 40% of women with high decision-making autonomy. The prevalence of early marriage among women in the eastern region was 52 %, much higher than in other regions.

Determinants of Age at Marriage Among Ever-Married Women in India

Table 3 presents logistic regression results for the effects of different levels of education and other factors on the early marriage of women. Except for place of residence, all other factors considered in the regression model were predicted to influence women's early age at marriage significantly. The likelihood of early marriage decreased with rising levels of education among women. The percentage of women who marry before turning 18 was much greater for those with no formal education and only elementary schools (1–5 years). However, for women with secondary education of 6 to 8 years, the odds of being married early decreased (OR=0.65, 95% CI=0.62 to 0.68), followed by higher education of 9 to 12 years (OR=0.31, 95%CI=0.29 to 0.32), and 13 years or above (OR=0.06, 95% CI=0.05 to 0.07). Even after adjusting for every other variable, the impact of women's educational attainment remained consistent. Women aged 35 to 49 were less likely to marry before 18 (OR=0.78, 95%CI= 0.74 to 0.81) than those aged 15 to 24. The chances of getting married early on were lower for the women from ST (OR=0.70, 95%CI= 0.66 to 0.74) and OBC (OR= 0.92, 95%CI= 0.88 to 0.96) categories than others.

Table 3

Binary Logistic Regression of Marriage Below 18 Among Ever-Married Women Aged (15-49 Years) in India, 2019-21

Background Characteristics	Model 1 (n=75,826) Model fit p=0.001		Model 2 (n=75,826) Model fit p=0.001	
	OR	CI (95%)	AOR	CI (95%)
Women's Education (y)				
none ®				
1-5	0.88***	[0.84,0.92]	0.90***	[0.86,0.94]
6-8	0.64***	[0.61,0.67]	0.65***	[0.62,0.68]
9-12	0.31***	[0.30,0.32]	0.31***	[0.29,0.32]
13-20	0.06***	[0.05,0.06]	0.06***	[0.05,0.07]
Women's Current Age (y)				
15-24 ®				
25-34			0.70***	[0.66,0.73]
35-49			0.72***	[0.68,0.76]
Caste				
SC			0.96	[0.91,1.01]
ST			0.70***	[0.66,0.74]
OBC			0.92***	[0.88,0.96]
Others ®				
Religion				
Hindu ®			1.35***	[1.29,1.41]
Others				
Place of Residence				
Urban ®				
Rural			1.03	[0.96,1.05]
Region				
North ®				
Central			1.52***	[1.45,1.60]
East			1.93***	[1.82,2.04]
North-East			1.28***	[1.20,1.36]
West			1.31***	[1.23,1.40]
South			1.52***	[1.44,1.61]
Wealth Status				
Poorest			1.06	[0.98,1.14]
Poor			1.15***	[1.08,1.23]
Middle			1.14***	[1.07,1.21]
Richer			1.06	[0.99,1.12]
Richest ®				
Mass Media Exposure				
Not exposed ®				
Exposed			0.93***	[0.90,0.97]
Women's Occupation				
Not working ®				
Agriculture			1.20***	[1.15,1.25]
Other sectors			1.15***	[1.09,1.20]
Type of Marriage				

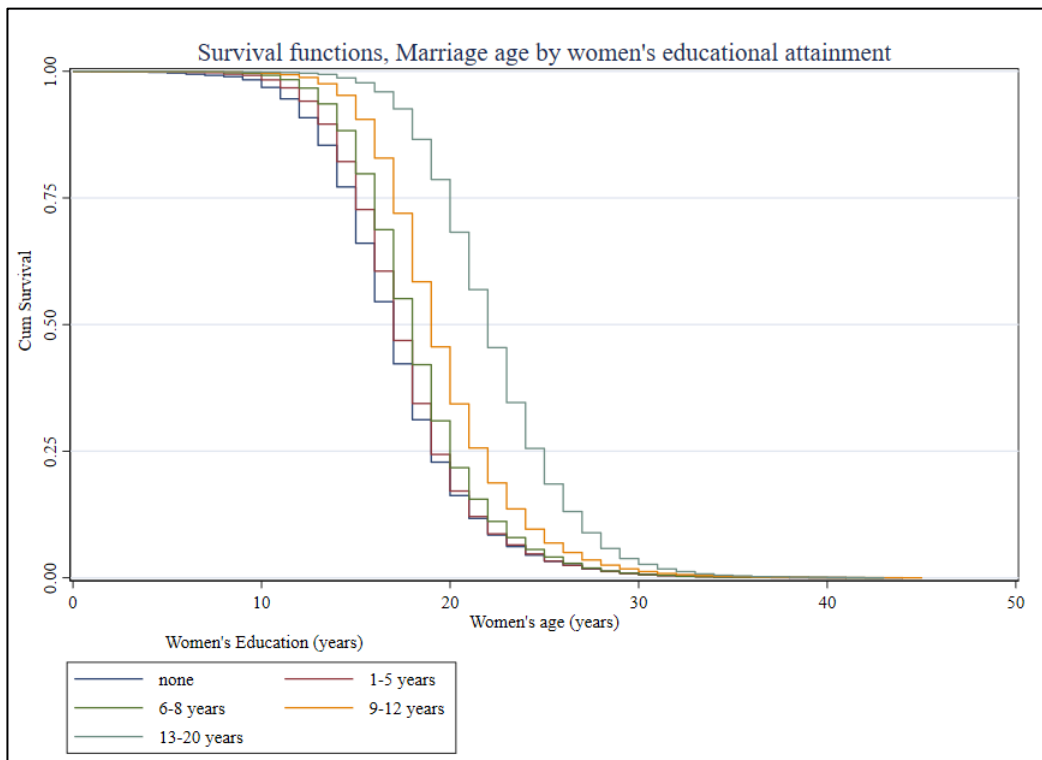
Background Characteristics	Model 1 (n=75,826) Model fit p=0.001		Model 2 (n=75,826) Model fit p=0.001	
	OR	CI (95%)	AOR	CI (95%)
Non-consanguineous ®				
Consanguineous			1.15***	[1.09,1.20]
Decision Making Autonomy				
High ®				
Medium			1.11***	[1.08,1.15]
Low			1.12***	[1.06,1.19]

*Note: ®: Reference group; 95% confidence intervals in brackets * p<0.05, ** p<0.01, *** p<0.001*

The women from a low economic background (OR=1.15, 95%CI= 1.08 to 1.23) had a higher probability of early marriage than those from rich households. Early marriage was higher among women not exposed to mass media than those exposed (OR 0.93, 95%CI = 0.90 to 0.97). In the case of marriage, where wives were previously related to their husbands or partners, they had a higher probability of getting married below 18 years of age than women who were not related to their husbands earlier.

Figure 1

Kaplan-Meier Survival Curves of Women's Age at Marriage by Levels of Women's Education for 15-49 Years Ever-Married Women



The survival curves (vertical lines) represent the probability of women delaying marriage age for all women in our sample. The curves are stratified by five (differently coloured) women's educational attainment levels. Deep blue denotes no education, purple 1–5 years of schooling, green 6–8 years, orange 9–10 years, and light blue 13–20 years of schooling.

Kaplan-Meier Survival Analysis of All Ever-Married Women

The Kaplan-Meier survival curves demonstrate distinct differences across women's educational levels regarding the likelihood of postponing marriage age (Figure 1). It was found that women with a certain level of education could postpone their marriage at later ages. These findings made it abundantly evident that education level positively affected postponing the marriageable age of women. The likelihood that women will survive marriage likewise improved with increased levels of education.

Discussion

The study found that women with no and the lowest level of education are vulnerable to early marriage. Precisely, additional levels of education enable women to postpone their marriage age beyond the legal age. The results of our research are consistent with the findings of other previous studies in the developing world (Bongaarts et al., 2017; Pandey, 2017; Raj et al., 2014; Sabbah-Karkaby & Stier, 2017; Wodon et al., 2017). Nevertheless, a previous study showed that due to early marriage, women tend to reduce literacy and education attainment (Nguyen & Wodon, 2014). This implies that the causality effect between early age at marriage and educational attainment are both-sided; both influence each other per different sociocultural aspects. In a patrilineal society like India, girls have few educational opportunities, where disparities are deeply embedded in sociocultural conventions.

At the aggregate level, poverty was found to be a key driving force for child marriage, implying that, besides promoting women's education, eradicating poverty should be a top priority in combating the prevalence of early-age marriages among women. Our study found that women from poor economic backgrounds were more vulnerable to getting married earlier than those from richer households. This finding conforms to past studies (Jain et al., 2007; Kamal et al., 2015; Mathur et al., 2003; UNFPA, 2012). In India, girls are seen as a burden to their parents, and they think they have to pay a lesser amount of dowry if they wed their daughters early. Dowry is traditionally supposed to be paid by the daughter's family to the groom's family in exchange for agreeing to keep their daughters.

Furthermore, in patrilineal Indian society, girls' virginity has been greatly regarded (Amin & Bajracharya, 2011; Caldwell, 2005; Jensen & Thornton, 2003; Nour, 2009). This study also found that religion substantially influences women's marriage age. Women who practice Hinduism were much more vulnerable to marrying before 18, as marriage is recognised as a sacrament in Hindu tradition,

which also earns religious praise (Agarwala, 1957; Arnold et al., 1998). The findings of our study imply that women's autonomy plays an important role in selecting their age at marriage. Autonomy can be increased by promoting girls' education, changing social norms, and providing more economic opportunities for women, which is consistent with previous literature (Lee-Rife et al., 2012; Parsons et al., 2015).

There are several strengths and limitations of this study. In this study, we employed the most recent large-scale nationally representative data, allowing us to reflect on the current situation of early marriage across the country. The study identified the predictors of low age at marriage, especially the positive role of education, thus reemphasising the benefits of programs like universal free education to all. The results are useful for customised region/state-specific intervention to prevent early marriages. However, the cross-sectional nature of the dataset does not allow for any causal inference. Moreover, the role of early marriage in educational attainment has yet to be explored. However, these limitations will unlikely diminish the findings' reliability and usefulness.

Conclusion

Early marriage possesses long-term negative consequences for both current and future generations. This study found that education continues to be a major factor in early marriage for women in India. Girls with no education or only an elementary education are more likely to marry at a young age. The results suggest the need for continued emphasis on girls' education, especially those from low socioeconomic backgrounds. The improved age at marriage of women will also help achieve Sustainable Development Goal (SDG) Target 5.3, which aims to "eliminate all harmful practices, such as child, early, and forced marriage, and female genital mutilation," to end child marriage by 2030.

Conflicts of interest

The authors have no conflicts of interest.

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