# EARLY MARRIAGE AND ITS IMPACT ON EDUCATION OUTCOMES IN INDIA

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**Abstract**

The study aims to examine the early marriage and its impact on education outcomes in India using a recursive bivariate probit model and data from the National Family Health Survey 5 (NFHS-5) conducted from 2019 to 2021.The sample includes 81,557 currently married women aged 15-24 years. The findings show that women in adult marriages have higher rates of literacy and having 10 or more years of schooling compared to women in early marriages across various demographic characteristics such as poor households, Hindu communities, rural areas, scheduled caste category, and nuclear families. The study also finds that women in adult marriages have higher literacy rates and more years of schooling compared to those in early marriages across all major states in India. Here, women in early marriage are significantly positive (negative) associated with no formal education and dropout from primary school (literacy and having 10 or more years of school).In the regression analysis, factors such as the current age of the child, having more than two living children, giving birth within the last 24 months, child health problems, poor household wealth, and experiencing physical violence are found to be significant determinants of lower chances of literacy and having 10 or more years of schooling for women in early marriages. Based on these findings, it is suggested that the government should implement national and state-level policies to improve education outcomes for women who marry at an early age. This paper suggested that the government should adopt national as well as state-level policies to increase the literacy rate and 10 or more years of schooling, especially for early marriage women, and simultaneously reduce the gap in education attainment across major states over time in India.

**Keywords:** Literacy, Early Marriage**,** Recursive Biprobit, NFHS-5, India

**JEL Classification:** J12, J16, I2, I24, I28, I38, J22.

## 1. INTRODUCTION

Intra-women gap in literacy refers to the disparity in literacy rates based on their marital status. This gap leads to educational inequality among women within a particular country or region, hindering their empowerment and overall socio-economic development. Closing this gap is essential for promoting gender equality, empowering women, and unlocking opportunities for education, employment, and active participation in public life. These gaps have significant implications for social sector development and overall progress within the country. Educational attainment

serves as a qualitative indicator of development and plays a crucial role in the socio-economic advancement of nations (UNDP 1993). India is one of the countries where early marriage is prevalent, contributing significantly to the intra-women gap in literacy. Moreover, early marriage plays a pivotal role in creating gender inequality in literacy (Brahmapurkar, 2017). Early marriage refers to marriages that occur before the age of 18, as defined by the Prohibition of Indian Child Marriage Act 2006. Researchers have used the term 'early marriage' for marriages occurring between 15 and 17 years of age (Chakravarty, 2021). Modak (2019) pointed out that the largest drop in the prevalence of early marriage has been in under-15 marriages, while marriages in the age group of 15–17 years continue to occur quite commonly in India. According to NFHS-5 (2019–2021), about 23.3 percent of women aged 20–24 married before the age of 18 years. UNFPA (2021) estimated that the COVID-19 pandemic situation would create 13 million additional early marriages globally. UNICEF (2023) pointed out that early marriage is becoming less common in India, but the country still accounts for one in three of the world's child brides. India ranks fifth among the eight South Asian countries in terms of early marriage prevalence. The states with the highest prevalence of early marriage are Uttar Pradesh, Bihar, West Bengal, Maharashtra, and Madhya Pradesh. For more than 140 years, the Indian government and civil society have sought to curb the practice of early marriage through law (Sharma et al., 2022). Moreover, early marriage is associated with lower education attainment, which undermines the human capital formation of adolescent girls (Parsons et al., 2015; Wodon, et al., 2018**).** Girls with less education are three times more likely to be married below the age of 18 as compared to those with secondary or higher education's **(**Sekine, & Hodgkin, 2017; UNFPA, 2012). In addition, one year of delay in marriageable age by a girl child increases schooling by 0.36 years and the probability of acquiring basic numeracy skills by 2 percent (Raj et al. 2010). This paper is divided into six sections. The next section offers a brief discussion of the literature review. The objective of the study is spelled out in the following section. Section 4 of the paper discusses the data and methodology. Section 5 provides analysis and results on the effect of early marriage on education outcomes in India. Section 6 provides the conclusion of the studies.

## 2. LITERATURE REVIEW

This literature review aims to investigate the effect of early marriage on education outcome in India. Early marriage tends to have a detrimental effect on female education outcomes (Mughal & Awan, 2020). A study conducted by Agarwal (1994) found that girls who married before the age of 18 were more likely to drop out of school and had lower levels of educational attainment compared to those who married later in their lives (UNICEF, 2020**;** UNESCO, 2014; Mughal & Awan, 2020), because parents believe that schooling' is not important for them, when they move to the groom's family after marriage. They prefer to do domestic work rather than schooling. Therefore, girls tend to drop out of school during the adolescent age groups, which affects their ability to acquire skills, and knowledge. A study conducted by Raj et al. (2019) found that Indian women who married an early age

have less likely to complete primary and secondary schooling as compared to women in adult marriage.

Early marriage is associated with gender inequality in the society, which further hinders educational opportunities for girls (Brahmapurkar, 2017; Stimpfle & Stadelmann, 2016). According to Parsons et al. (2015), early marriages are associated with reduced access to schooling, lower retention rates, and limited learning achievements among girls.

Early marriages contribute not only to limited educational opportunities but also pose challenges related to reproductive health issues and lack of decision-making among young brides in India (Prata et al., 2017; Sangwan & Yadav, 2019). Research conducted by Raj et al., (2010) demonstrated that early married girls face higher risks associated with maternal mortality rates due to inadequate knowledge about contraceptives and childbirth complications.

Economic factors also play a significant role in shaping the relationship between early marriage and education outcomes in India (Sangwan & Yadav, 2019). A study by Jejeebhoy (1995) highlighted that poverty often drives families to marry off their daughters at an early age as they consider it an economic burden. As a result, they are drop out from school due to women in early marriage.

**Objectives:** The objectives of this paper are:

1. To compare the educational outcomes between currently married women aged 15-24, who were married at an early age and those who were married at an adult age in India.
2. To examine how women in early marriage impacts the educational outcomes in India.

**Data:** This study has primarily used National Family Health Survey (NFHS) conducted by the Ministry of Health and Family Welfare (MOHFW), Govt. of India in collaboration with the International Institute for Population Sciences (IIPS), Mumbai. The analysis uses individual recode data, which is the fifth round of the National Family Health survey conducted in 2019-21. Here, age at cohabitation is defind by the age when women began living with their spouse. In this analysis, the age at cohabitation variable is used as a proxy for age at marriage of women, because age at marriage of women does not give proper information to compute our results (IIPS & ICF, 2017; Favara et al., 2016; Crawford et al., 2011; Perelli-Harris et al., 2019; Guzzo, 2019). Here, education outcomes for currently married women can be divided into four categories: 1) Literacy: Whether or not a woman is able to read and write 2) 10 or more years of schooling: Whether a woman has completed at least ten years of formal education.3) No education: Whether a woman has received no formal education. 4) Incomplete primary education: Whether a woman has started but not completed primary education, it is also called dropout from primary education (Mohammad. et al, 2016; Nguyen & Wodon, 2014; Jennifer et al, 2015). All the outcome variables are collected from the NFHS data. The dataset includes

information on a total of 81,557 currently married women aged 15-24 years in India. It is the latest data set. This represents a cross-sectional and unit-level dataset that allows for analysis and comparison of education outcomes between women married early versus those married as adults across different states in India.

## 3. METHODOLOGY

The recursive bivariate probit model is a statistical method used to analyze the relationship between two binary dependent variables when their errors are correlated. In this model, one of the dependent variables becomes an endogenous regressor for the other dependent variable (Greene, 2008; Madala 1983). The recursive bivariate probit model is represented in the following equation:

$$W_{ij} = \alpha + \beta_{1ij}X_{1ij} + \beta_{2ij}X_{2ij} + \beta_{3ij}X_{3ij} + \beta_{4ij}X_{4ij} + \beta_{5ij}X_{5ij} + \beta_{6ij}X_{6ij} + \beta_{7ij}X_{7ij} + \beta_{8ij}X_{8ij} + \beta_{9ij}X_{9ij} + \beta_{10ij}X_{10ij} + \beta_{11ij}X_{11ij} + \beta_{12ij}X_{12} + \varepsilon_1 \text{----------(1)}$$

$$X_{1ij} = \theta_0 + \theta_{2ij}X_{2ij} + \theta_{3ij}X_{3ij} + \theta_{4ij}X_{4ij} + \theta_{5ij}X_{5ij} + \theta_{6ij}X_{6ij} + \theta_{7ij}X_{7ij} + \theta_{8ij}X_{8ij} + \theta_{9ij}X_{9ij} + \theta_{10ij}X_{10ij} + \theta_{11ij}X_{11ij} + \theta_{12ij}X_{12ij} + \varepsilon_2 \text{ ----------(2)}$$

$$W_{ij} = \begin{cases} 1, & if \quad Yes > 0 \\ 0, & if \quad No \leq 0 \end{cases}$$

$$X_1 = \begin{cases} 1, & if \quad Marriage < 18\ year \\ 0, & if \quad Marriage \geq 18 year \end{cases}$$

With $\begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \end{pmatrix} \sim N[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix}]$

This paper uses recursive bivariate probit model to explore the effect of early marriage on education outcomes for currently married women aged 15-24 in India. The outcome variable $W_{ij}$ represents whether an individual is literate or has completed at least 10 years of schooling. The endogenous variable $X_1ij$ indicates whether a woman got married before the age of 18 years. Moreover, $W_{ij}$ takes on a value of 1 if an individual is literate/has completed 10 or more years of schooling/no education/incomplete primary education and 0 otherwise. Similarly, $X_1ij$ takes on a value of 1 if an individual got married below the age of 18 years and 0 otherwise. The coefficients β represent how various factors influence education outcomes, while θ represent how different factors determine early marriage. Equation (1) represents the relationship between the outcome variable $W_{ij}$ (which represents literacy or 10 or more years of schooling) and various explanatory variables $X_1ij$, $X_2$, ..... $X_{12}ij$. The coefficients $\beta_1ij$ to $\beta_{12}ij$ represent the impact of these explanatory variables on the outcome variable. Equation (2) represents how one of the explanatory variables, $X_1ij$ (which denotes whether a woman married below 18 years), is determined by other explanatory variables $X_2ij$ to $X_{12}ij$. The coefficients $\theta_2ij$ to $\theta_{12}ij$ represent how these other factors influence early marriage. The model assumes that both equations follow a normal distribution and that there is correlation

between their error terms ($\varepsilon_1$ and $\varepsilon_2$). The description of variables is explained in the following Appendix A.

## 4. RESULTS

This section represents the relationship between education outcomes and women marrying at an early age as compared to adults in India. Needless to say, the educational attainment of married women is a concerning issue in India. The descriptive analysis is used to show the difference in education attainment of women in early marriage as compared to adults in India. Here, the socio-economic and demographic characteristics of women such as place of residence, religion, caste, and household wealth status as important variables to influence the difference in education outcome between two groups of women in India. Below, explain these results.

**Table 1** represents the percentage of literacy rate and having 10 or more year of schooling among currently married women aged 15–24 who were married at an early age as compared to adults across different time points in India. This indicates that women who marry at an early age have lower rates of literacy and 10 or more years of schooling as compared to women who marry at an adult age. This highlights the low level of literacy and the fact that the fact that years of schooling are related to early marriage in India. Furthermore, it is observed that the percentage of literacy and years of schooling have increased over time for both groups, indicating overall progress in education attainment in India. However, the gap in literacy between women who marry early and those who marry adults has decreased from 33.27 percent in NFHS-1 to 11.51 percent in NFHS-5. This suggests a narrowing disparity in literacy rates between the two groups because the rate of increase in literacy for women in early marriage is greater than that of women in adult marriage. On the other hand, the gap in 10 or more years of schooling has widened over time in India. The gap in 10 or more years of schooling between women who marry early and those who marry adults has increased from 21.59 percent in NFHS-1 to 24.45 percent in NFHS-5. This suggests a widening disparity in years of schooling between the two groups of women because the rate of increase in years of schooling for women in adult marriage is greater than that of women in adult marriage.

**Table 2** represents the prevalence of literacy rates and having 10 or more years of schooling of currently married women who were married at an early age as compared to adults across demographic characteristics in India. Here, the prevalence of literacy rate of women in adult marriage is disproportionately higher than women in early marriage among various demographic characteristics like poor household wealth (56.83 percent vs. 43.17 percent), Hindu community (67.88 percent vs. 32.12 percent), rural areas (66.37 percent vs. 33.63 percent), for the schedule caste category (65.78 percent vs. 34.22 percent), nuclear families (70.16 percent vs. 29.84 percent), and physical violence (61.53 percent vs. 38.47 percent) of India. Similarly, the prevalence of having 10 or more years of schooling is higher among women in adult marriages compared to those in early marriages across different demographics like urban residence (77.71 percent vs. 22.29 percent), Hindu community (72.96 percent

vs. 27.04 percent), nuclear family (74 percent vs. 26 percent), and poor household (67.15 percent vs. 32.85 percent) in India. This table provides regional variations within India regarding education outcomes between two groups of women in India. Across all regions of India, the prevalence of literacy and 10 or more years of schooling among women in adult marriage is greater than that of women in early marriage. Here, regions like the Eastern, Northeast, and Northern states have a higher literacy rate and have 10 or more years of schooling for both groups of women as compared to the central and southern states of India. Therefore, region-wise disparities in literacy and having 10 or more years of schooling for both groups of women are more acute in India. It indicates that women who were married at an early age tend to have lower levels of educational attainment compared to those who entered into marriage as adults across various demographic characteristics in India.

**Table 3** represents the prevalence of education outcomes of currently married women aged 15–24, who were married at an early age as compared to adults across 15 major states of India, NFHS–5**,** Here, 15 major states are defined by the 2011 Census of India. This table indicates the percentage of literacy and having 10 or more years of schooling for both groups of women, as well as the relative gap (RG) between them. Here, AM denotes women in adult marriage, and CM denotes women in early marriage. It reveals that women in adult marriage generally have higher levels of literacy and longer durations of schooling, say 10 or more years, compared to women in early marriage across all major states in India. In addition, Kerala (99.39 percent) has the highest literacy rate among women in adult marriage, followed by Tamil Nadu (98.27 percent), while Bihar (73.91 percent) has the lowest. Similarly, Kerala (96.02) also has the highest percentage of women with 10 or more years of schooling among women in adult marriage, followed by Tamil Nadu (86.36 percent), while Rajasthan (42.73 percent) has the lowest. On the other hand, Tamil Nadu (95.59 percent) has the highest literacy rate among women in early marriage, followed by Kerala (95.29 percent), while Bihar (57.44 percent) has the lowest rate. Similarly, Kerala (85.26 percent) also has the highest percentage of women with 10 or more years of schooling among women in early marriage, followed by Tamil Nadu (70.24 percent), while Madhya Pradesh (16.34 percent) has the lowest rate. Additionally, Bihar (22.28 percent) has the highest relative gap in literacy rates, indicating a larger disparity in literacy. Moreover, Gujarat (54.87 percent) has the highest relative gap for 10 or more years of schooling, indicating a larger disparity in higher schooling. Overall, these findings suggest that there is a marked difference in literacy rate and year of schooling among women in early marriage compared to adult marriage across major states in India.

**Table 4 re**presents factors responsible for the education outcome of currently married women aged 15–24 who were married at an early age in India, NFHS-5. In this case, education outcomes are divided into two categories: one is literacy rate, and the other is 10 or more years of schooling. The binary dependent variable, say literacy or 10 or more years of schooling, is equal to one and zero otherwise. This paper uses various independent variables like year of schooling, current age of the child, wealth of the house, the number of children in the household,

etc. Here, women in early marriage are treated as dummy endogenous variables, which are binary in nature. The recursive bivariate probit model has been applied separately for literacy and 10 or more years of schooling among currently married women aged 15–24 who were married at an early age in India. Here, the determinant of education outcome, i.e., literacy and 10 or more years of schooling in the first stage of regression, and the second stage provide the determinant of early marriage among currently married women aged 15–24 years in India. In the regression analysis, the current age of the child, living children more than two, birth less than 24 months, child health problems, poor household wealth, and experience of physical violence are significantly positively associated with women in early marriage, which would have lower chances of literacy and 10 or more years of schooling in India. The average treatment effect (ATE) is a statistical measure that provides the impact of a treatment variable, i.e., early marriage, on the outcome variables, i.e., literacy and 10 or more years of schooling. It represents the average difference in outcomes between women who married an early age and those who do not. ATE represents women who marry at an early age would reduce literacy by 0.438 points (43.8 percent) and 10 or more years of schooling by 0.530 points (53 percent). Here, women's current age, spousal age gap, watching television, working for the last 12 months, and being underweight are insignificant factors to be associated with literacy and 10 or more years of schooling for women in early marriage. This means that these variables did not have a significant impact on the probability of literacy and 10 or more years of schooling among women in early marriage in India. The average marginal effect (AME) reveals that certain factors have a significant impact on the probability of literacy and 10 or more years of schooling among women who were married at an early age in India. Here, a living children more than two in the household (1st) and the current age of the child ($2^{nd}$) have the highest contribution factors to literacy and 10 or more years of schooling among early marriage women in India.

**Table 5 re**presents factors responsible for the education outcome of currently married women aged 15–24 who were married at an **early** age in India, NFHS-5. In this case, education outcomes are divided into two categories: one is no education, i.e., no formal education or out-of-school, and another is incomplete primary education, i.e., dropout from primary school. In this case, the binary dependent variable, say, no education or incomplete primary education, is equal to one and zero otherwise. This paper uses various independent variables like year of schooling, current age of the child, wealth of the house, the number of children in the household, etc. Here, women in early marriage are treated as dummy endogenous variables, which are binary in nature. The recursive bivariate probit model has been applied separately for no education and incomplete primary education among currently married women aged 15–24, who were married at an early age in India. In the regression analysis, the current age of the child, living child more than two, child health problems, spousal age gap, and experience of physical violence are significantly positively associated with women in early marriage, which would have higher chances of having no education or an incomplete primary education in India. Similarly, women with current age have significantly negative associations with

women in early marriage, which would have higher chances of having no education or an incomplete primary education. The average treatment effect (ATE) represents that women who marry at an early age would increase their no education by 0.338 points (33.8 percent) and their incomplete primary education by 0.218 points (21.8 percent). The average marginal effect (AME) represents that a living children more than two in the household has the highest contribution factors to no education and incomplete primary education among early marriage women in India.

## 5. DISCUSSION

This study looks at how early marriage affects the education of young married women in India, especially those aged 15–24. It compares women who got married early (before 18) with those who married as adults. Over the years, both groups have shown improvement in basic literacy and schooling. However, early marriage is still a major obstacle to higher education. While more early-married women are now learning to read and write, they are still far behind in completing 10 or more years of schooling. This means basic education programs are helping, but these women face bigger problems when trying to continue their education. Women who marry early usually have lower education levels, especially if they come from poor families, rural areas, or socially disadvantaged groups like Scheduled Castes. In every group, adult-married women have more education. This shows that poverty, where someone lives, and social status all affect whether a woman can stay in school. Some states, like Kerala and Tamil Nadu, do better in educating both groups of women. But states like Bihar, Rajasthan, and Madhya Pradesh still show big gaps between early- and adult-married women. In places like Bihar and Gujarat, the difference in education between these two groups is especially large. These findings suggest that local governments in such areas need to take strong action to reduce early marriage and improve education. Several problems make it harder for early-married women to study. These include having many children, caring for young or sick children, being poor, and facing domestic violence. These issues often come together and create more difficulties for these women. Research shows that early marriage strongly reduces the chances of a woman being literate or completing basic schooling. The more children a woman has, the harder it is for her to continue her education. Moreover, early marriage is still a big reason why many young women in India do not get a full education. Although literacy is improving, the growing gap in higher education is a concern. To fix this, the government needs to work on stopping early marriage, improving reproductive health care, supporting poor families, and ending violence at home. Education campaigns, financial support, and community programs can help young women stay in school and build better futures, no matter when they get married.

## 6. CONCLUSION

This study clearly shows that early marriage has a harmful effect on young women's education in India. Women who marry early are less likely to be literate or complete 10 or more years of schooling. This problem is worse for women from poor families, rural areas, and disadvantaged social groups. Several factors—like having

many children, a big age gap between spouses, poor child health, and facing physical violence—make it even harder for early-married women to stay in school. These women are more likely to have no education or to drop out of school early. To fix this, the government needs to invest more in education and create strong policies to delay early marriages. Programs like scholarships, financial help to families, and better laws are important. Although laws like the Prohibition of Child Marriage Act exist, enforcing them is still difficult because of social and cultural traditions. This study has some limitations, as it does not include factors like access to schools or the quality of education in different areas. Future research will look at these issues to better understand how to improve education for all young women in India.

## Endnote

1. A detailed description of each round of NFHS with respect to its sampling design, data collection and procedure of survey is provided in the national report released by International Institute for Population Sciences (IIPS) for each round. These reports are available in their website (http://rchiips.org/nfhs/). The datasets are publicly available at https://www.dhsprogram.com/data/available-datasets.cfm
2. Currently married women represent those who were married but not divorced, widowed, or separated. (IIPS & ICF, 2017)

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**Appendix A** Description of Variables Used in the Analysis

| **Outcome variables** | **Description** | **Coding of variables** |
|---|---|---|
| $w_1$ | literate/has completed 10 or more years of schooling/no education/incomplete primary education | ◆ 1 if child is literate/has completed 10 or more years of schooling/no education/incomplete primary education , 0 otherwise |
| **Endogenous variable** | **Description** | **Coding of variables** |
| $X_1$ | married less than 18 years | ◆1 if women married <18 years, 0 otherwise |
| **Regressor Variables** | Description | Coding of variables |
| $X_2$ | Women current age | ◆ Continuous variables |
| $X_3$ | Current age of child | ◆ Continuous variables |
| $X_4$ | Experience physical violence | ◆1 if yes, 0 otherwise |
| $X_5$ | Poor household wealth | ◆1 if yes, 0 otherwise |
| $X_6$ | underweight women | ◆ 1 if women underweight (BMI < 18.5); 0 otherwise |
| $X_7$ | Living child ≥2 (ref-<=2) | ◆1 if yes, 0 otherwise |
| $X_8$ | Birth <24 months | ◆1 if birth interval <24 months , 0 otherwise |
| $X_9$ | Child health problem | ◆1 if yes, 0 otherwise |
| $X_{10}$ | Work last 12month | ◆1 if yes, 0 otherwise |
| $X_{11}$ | spousal age gap | ◆1 if yes, 0 otherwise |
| $X_{12}$ | Watching Television | ◆1 if yes, 0 otherwise |

*Source: Extracted by individual level of NFHS data.*

***Table 1.*** *Percentage of literacy and having 10 or year of schooling among currently married women aged 15–24 years, who were married at an early age as compared to adults across different time points in India*

| | Literacy | | | 10 & more year of schooling | | |
|---|---|---|---|---|---|---|
| | Adult marriage | Early marriage | Gap | Adult marriage | Early marriage | Gap |
| **NFHS-1** | 60.08 | 26.81 | 33.27 | 26.01 | 4.42 | 21.59 |
| **NFHS-2** | 71.17 | 35.83 | 35.34 | 31.27 | 5.70 | 25.57 |
| **NFHS-3** | 77.92 | 50.03 | 27.89 | 37.26 | 9.86 | 27.40 |
| **NFHS-4** | 81.54 | 68.07 | 13.47 | 45.02 | 22.85 | 22.17 |
| **NFHS-5** | 84.23 | 72.72 | 11.51 | 54.20 | 29.75 | 24.45 |

*Source: Author own calculation from different NFHS data ,*

***Table 2.*** *Prevalence of education outcome of currently married women aged 15–24 years who were married at an early age as compared to adults in India,NFHS-5*

| | Literacy | | | | 10 or More year of schooling | | | |
|---|---|---|---|---|---|---|---|---|
| | Adult Marriage | | Early marriage | | Adult Marriage | | Early marriage | |
| | N | % | N | % | N | % | N | % |
| **Wealth quintile** | | | | | | | | |
| Poor | 9,267 | 57.24 | 6,923 | 42.76 | 4,966 | 67.15 | 2,429 | 32.85 |
| Middle | 9,711 | 64.02 | 5,457 | 35.98 | 6,473 | 71.05 | 2,637 | 28.95 |
| Richer | 9,268 | 72.14 | 3,579 | 27.86 | 7,045 | 76.32 | 2,186 | 23.68 |
| **Social category** | | | | | | | | |
| Schedule caste (SC) | 8,365 | 62.27 | 5,069 | 37.73 | 5,072 | 72.58 | 1,916 | 27.42 |
| Schedule tribe (ST) | 6,483 | 61.47 | 4,064 | 38.53 | 3,273 | 73.85 | 1,159 | 26.15 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Other backward classes (OBC) | 17,542 | 64.99 | 9,450 | 35.01 | 12,021 | 72.26 | 4,615 | 27.74 |
| Others | 6,819 | 68.31 | 3,164 | 31.69 | 5,078 | 77.29 | 1,492 | 22.71 |
| **Household structure** | | | | | | | | |
| Nuclear | 13,759 | 63.54 | 7,896 | 36.46 | 8,715 | 74 | 3,114 | 26 |
| Non-nuclear | 27,403 | 63.32 | 15,876 | 36.68 | 17,770 | 72.88 | 6,611 | 27 |
| **Religion** | | | | | | | | |
| Hindu | 32,729 | 64.06 | 18,366 | 35.94 | 21,772 | 72.96 | 8,067 | 27.04 |
| Muslim | 4,893 | 58.07 | 3,533 | 41.93 | 2,704 | 71.31 | 1,088 | 28.69 |
| 0thers | 3,540 | 65.40 | 1,873 | 34.60 | 2,009 | 77.90 | 570 | 22.10 |
| **Place of residence** | | | | | | | | |
| Urban | 8,457 | 70.07 | 3,612 | 29.93 | 6,138 | 77.71 | 1,761 | 22.29 |
| Rural | 32,705 | 61.87 | 20,160 | 38.13 | 20,347 | 71.87 | 7,964 | 28.13 |
| **Region of the country** | | | | | | | | |
| Northern | 5,561 | 65.68 | 2,906 | 34.32 | 3,886 | 72.76 | 1,455 | 27.24 |
| Central | 3,310 | 56.50 | 2,548 | 43.50 | 2,564 | 68.91 | 1,157 | 31.09 |
| Eastern | 1,290 | 78.04 | 363 | 21.96 | 993 | 85.46 | 169 | 14.54 |
| Northeast | 9,868 | 68.98 | 4,437 | 31.02 | 5,572 | 79.49 | 1,438 | 20.51 |
| Western | 13,140 | 62.38 | 7,924 | 37.62 | 8,364 | 70.49 | 3,502 | 29.51 |
| Southern | 7,961 | 58.76 | 5,588 | 41.24 | 5,087 | 71.80 | 1,998 | 28.20 |

*Source: Author own calculation from different NFHS-5 data , % is based on weighted sample and Nis unweighted sample,*

***Table 3.*** *Prevalence of education outcomes of currently married women aged 15–24, who were married at an early age as compared to adults across 15 major states of India, NFHS–5*

| | literacy | | | 10 & more year of schooling | | |
|---|---|---|---|---|---|---|
| States | Adult Marriage | Early Marriage | RG | Adult Marriage | Early Marriage | RG |
| Punjab | 86.9 | 72.07 | 17.07 | 62.64 | 36.03 | 42.48 |
| Haryana | 90.15 | 76.05 | 15.64 | 63.28 | 37.41 | 40.88 |
| Rajasthan | 77.91 | 68 | 12.72 | 42.73 | 25.25 | 40.91 |
| Uttar Pradesh | 77.87 | 66.25 | 14.92 | 51.86 | 33.81 | 34.81 |
| Bihar | 73.91 | 57.44 | 22.28 | 47.58 | 24.24 | 49.05 |
| Assam | 86.67 | 81.54 | 5.91 | 37.47 | 18.01 | 51.93 |
| West Bengal | 90.79 | 83.64 | 7.87 | 60.86 | 29.74 | 51.13 |
| Odisha | 83.33 | 66.51 | 20.18 | 51.8 | 30.4 | 41.31 |
| Madhya Pradesh | 79.6 | 66.42 | 16.56 | 35.87 | 16.34 | 54.45 |
| Gujarat | 83.9 | 71.51 | 14.77 | 38.09 | 17.19 | 54.87 |
| Maharashtra | 92.52 | 83.29 | 9.97 | 68.42 | 39.05 | 42.93 |
| Andhra Pradesh | 89.4 | 83.39 | 6.72 | 70.25 | 48.72 | 30.65 |
| Karnataka | 88.11 | 79.05 | 10.28 | 71.24 | 49.71 | 30.22 |
| Kerala | 99.39 | 95.29 | 3.62 | 96.02 | 85.26 | 11.21 |
| Tamil Nadu | 98.27 | 95.59 | 2.72 | 86.36 | 70.24 | 18.67 |

*Source: Author own calculation from different NFHS-5 data. RG- Relative gap is calculated ( (Literacy rate of AM – Literacy rate of CM) / Literacy rate of AM) *100)*

***Table 4***. *Factors responsible for the education outcome of currently married women aged 15–24 who were married at an early age in India, NFHS-5*

| 1st stage of regression: Dummy dependent variable: Education outcome | Literacy | | | 10 or more year of schooling | | |
|---|---|---|---|---|---|---|
| | Coef. | Robust Std.Er | ATE (dy/dx) | Coef. | Robust Std.Er | ATE (dy/dx) |
| Women in early marriage | -1.659*** | 0.037 | -0.438 | -1.649*** | 0.031 | -0.530 |
| Women current age | -0.249*** | 0.013 | | -0.178*** | 0.012 | |
| Current age of Child | 0.268*** | 0.014 | | 0.179*** | 0.012 | |
| Experience severe violence | -0.107** | 0.040 | | -0.040 | 0.039 | |
| Poor household wealth | -0.158*** | 0.017 | | -0.242*** | 0.015 | |
| underweight women | 0.037 | 0.040 | | -0.023 | 0.039 | |
| Living child ≥2 (ref-<=2) | 0.696*** | 0.048 | | 0.542*** | 0.044 | |
| Birth <24 months | -0.382*** | 0.052 | | -0.311*** | 0.051 | |
| Child health problem | 0.076 | 0.144 | | 0.167 | 0.122 | |
| Work last 12month | -0.041 | 0.042 | | 0.048 | 0.042 | |
| Watching Television | 0.421*** | 0.040 | | 0.262*** | 0.039 | |
| spousal age gap | -0.012 | 0.055 | | 0.053 | 0.055 | |
| _cons | 5.818*** | 0.308 | | 3.215*** | 0.276 | |

| **2nd stage of regression: Dummy Endogenous variable: Women in early marriage** | Coef. | Robus Std.Er | AME (dy/dx) | Coef. | Robus Std.Er | AME (dy/dx) |
|---|---|---|---|---|---|---|
| Women current age | -0.462 | 0.016 | -0.103 | -0.446 | 0.015 | -0.042 |
| Current age of child | 0.471*** | 0.017 | 0.105 | 0.456*** | 0.018 | 0.040 |
| Experience physical violence | 0.038** | 0.044 | -0.002 | 0.044** | 0.044 | 0.008 |
| Poor household wealth | 0.041* | 0.017 | 0.028 | 0.045** | 0.016 | 0.052 |
| underweight women | -0.023 | 0.043 | 0.005 | -0.006 | 0.044 | 0.003 |
| Living child ≥2 (ref-<=2) | 1.447*** | 0.059 | 0.311 | 1.424*** | 0.056 | 0.134 |
| Birth <24 months | 0.543*** | 0.060 | -0.135 | 0.542*** | 0.059 | -0.068 |
| Child health problem | 0.219* | 0.130 | 0.064 | 0.275* | 0.129 | 0.083 |
| Work last 12month | 0.035 | 0.047 | -0.011 | 0.026 | 0.046 | 0.013 |
| spousal age gap | 0.060 | 0.059 | 0.048 | 0.051 | 0.064 | 0.040 |
| Watching Television | 0.167 | 0.045 | 0.121 | 0.165 | 0.044 | 0.063 |
| _cons | 9.833*** | 0.360 | | 9.509*** | 0.343 | |
| /atanrho | 2.118*** | 0.092 | | 2.356*** | 0.116 | |
| rho | 0.971 | 0.005 | | 0.982 | 0.004 | |
| Number of observation | 5,808 | | | 5,808 | | |

*Source: Author own calculation from different NFHS data. ATE-Average treatment effect, AME-Average marginal effects, Author own calculation from NFHS-5 data, *** p<0.01, **p<0.05, * p<0.10*

***Table 5.*** *Factors responsible for the education outcome of currently married women aged 15–24 who were married at an early age in India, NFHS-5*

| **2nd Stage of Regression: Binary dependent variable: Education outcome** | | **No education** | | | **Incomplete Primary education** | |
|---|---|---|---|---|---|---|
| | Coef. | Robust Std.Er | ATE dy/dx | Coef. | Robust Std.Er | ATE dy/dx |
| Women in early marriage | 1.587*** | 0.043 | 0.338 | 1.095*** | 0.177 | 0.218 |
| Women current age | 0.258*** | 0.017 | | 0.180*** | 0.032 | |
| Current age of Child | -0.259*** | 0.016 | | -0.157*** | 0.037 | |
| Experience severe violence | 0.018 | 0.046 | | -0.066 | 0.069 | |
| Poor household wealth | -0.160*** | 0.029 | | -0.196*** | 0.035 | |
| underweight women | 0.003 | 0.053 | | -0.027 | 0.071 | |
| Living child ≥2 (ref-<=2) | -0.778*** | 0.045 | | -0.298* | 0.127 | |
| Birth <24 months | 0.445*** | 0.073 | | 0.041 | 0.095 | |
| Child health problem | -0.209** | 0.071 | | -0.076 | 0.293 | |
| Work last 12month | 0.248*** | 0.058 | | -0.124 | 0.076 | |
| Watching Television | -0.524*** | 0.055 | | -0.172** | 0.068 | |
| spousal age gap | -0.131*** | 0.032 | | -0.109 | 0.090 | |
| _cons | -6.064*** | 0.395 | | -4.523*** | 0.713 | |

| **1st stage of regression: Binary Endogenous variable: women in early marriage** | Coef. | Robust Std. Er | AME (dy/dx | Coef. | Robust Std. Er | AME (dy/dx) |
|---|---|---|---|---|---|---|
| Women current age | -0.491*** | 0.017 | -0.010 | -0.561*** | 0.028 | -0.014 |
| Current age of Child | 0.498*** | 0.018 | 0.011 | 0.595*** | 0.031 | 0.018 |
| Experience severe violence | 0.107* | 0.050 | 0.012 | 0.168** | 0.070 | 0.003 |
| Poor household wealth | 0.005 | 0.028 | -0.021 | 0.082** | 0.030 | -0.028 |
| underweight women | 0.021 | 0.059 | 0.002 | 0.039 | 0.068 | -0.001 |
| Living child ≥2 (ref-<=2) | 1.609*** | 0.044 | 0.043 | 1.947*** | 0.105 | 0.085 |
| Birth <24 months | -0.602*** | 0.067 | 0.004 | -0.691*** | 0.096 | -0.038 |
| Child health problem | 0.438*** | 0.087 | 0.012 | 0.515** | 0.230 | 0.023 |
| Work last 12month | 0.030 | 0.059 | 0.035 | 0.109 | 0.073 | -0.008 |
| spousal age gap | 0.192*** | 0.033 | 0.000 | 0.179* | 0.102 | -0.002 |
| Watching Television | 0.256*** | 0.059 | -0.046 | 0.053 | 0.070 | -0.017 |
| _cons | 10.184*** | 0.434 | | 11.275*** | 0.579 | |
| /atanrho | -13.742*** | 0.351 | | -0.912*** | 0.175 | |
| rho | 0.971 | 0.005 | | -0.722 | 0.084 | |
| Number of observation | 2,781 | | | 2,781 | | |

*Source: Author own calculation from different NFHS data. ATE-Average treatment effect, AME-Average marginal effects, Author own calculation from NFHS-5 data, *** p<0.01, **p<0.05, * p<0.10*