
EXPLORING THE SOCIOECONOMIC FACTORS ASSOCIATED WITH GIRL CHILD MARRIAGE AND ITS IMPACT ON PREGNANCY OUTCOMES: A STUDY FROM 3 BLOCKS ON BIRBHUM DISTRICT OF WEST BENGAL, INDIA

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ABSTRACT

Background

Child Marriage deprives the child of the inherent dignity which has been elaborated and recognized in The International Covenant on Civil and Political Rights of 1966. The driving factors for child marriages are multidimensional and deeply rooted in community specific socio- cultural practices and circumstances. At present, this practice is still persistent and arises from the low value given to women and girls. The present article examines the socio-economic correlates of early marriages among girls in Birbhum district, West Bengal.

Objectives: The present study aims to address socioeconomic factors associated with girl child marriage and its effect on selected pregnancy outcomes among women in the Birbhum district of West Bengal. **Methods:** The study is based on primary data, collected from the 3 CD block (Suri-1, Rajnagar and Md Bazar) by adopting a random sample survey technique. The participants in the study consisted of 2166 ever married women aged 13–44 years. The study adopted the questionnaire as a tool for data collection. The questionnaire was designed to collect data on variables related the pre and post marriage of participants for below 18 and \geq 18 years. The descriptive statistics, chi-square test, and logistic regression model were used to analyze the collected data. **Results:** Multivariate analysis revealed that the prevalence of child marriage was substantially higher among women who had comparatively lower

education level resided in the marginalized family. Besides, the likelihood of less healthy or stillbirth, complications during pregnancy and delivery were significantly higher among those married <18 years than those married at 18 years or later. **Conclusions:** The factors that influence the decision to enter into early marriage include family decisions and cultural norms. In addition to the challenges associated with marriage, women express a desire for their children to have access to more advantageous educational opportunities. Policies enhancing educational opportunities, addressing economic disadvantages, and considering district-specific factors are essential. Comprehensive strategies are necessary to empower women, foster reproductive health, and address the multifaceted nature of early marriage and motherhood in India.

KEYWORDS: Child Marriage, socioeconomic, multivariate, marginalized.

INTRODUCTION

Early marriage refers to any formal or informal union between a male and female under the age of 18 worldwide; 21% of women alive in 2020 were married before their 18th birthday, and about 12 million girls under 18 are married each year—this is about 23 girls married as children every minute [Scott S et al, 2021]. The Sustainable Development Goal (SDG) target 5.3 aims to end child marriage in girls by 2030 as part of a global commitment to “eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation”. For girls, the annual rate of reduction in the prevalence of child marriage must increase from 1.9% to 23% globally to meet the SDG target [UNICEF, 2018].

Motherhood during adolescence period is regarded as a major global public health issue owing to the wide range of health effects and socio-economic consequences for the mother as well as the child. The World Health Organization estimates that about 11% of total births occurred to women aged less than 20 years, and 95% of these births occurred in low-and middle- income countries [WHO, 2011].

The national rate of decline in child marriage during the last three decades has been considerable; however, previous research suggests that substantial variability of the rate of decline of child marriage at the sub-national level exists [McDougal, L et al, 2020].

A study by Nguyen et al. (2019) collated and synthesized data from over 14,000 adolescent mothers using India’s NFHS-4 survey, to explore the relationship between teenage pregnancy

and socio-economic status (SES). It was found that rates of women who gave birth during adolescence were higher in households characterized by lower SES. The findings suggested that teenage pregnancy perpetuates cycles of inter-generational poverty, where women who gave birth during adolescence were less likely to have paid jobs or have agency over household money [Nguyen, et al, 2019].

According to the NFHS-5 (2019-21) survey, 6.8% to 7.9% of women aged 15-19 in India were already pregnant or had begun childbearing, representing a marginal decline from 8.5% in NFHS-4. West Bengal (16%) and Bihar (11%) reported the highest rates of teenage pregnancy, with rural, poor, and uneducated populations being most affected [NFHS-5, 2019-21].

MATERIAL AND METHODS

A cross-sectional study was carried out among 2166 sample women population of Birbhum district, age ranging from 13 to 44 years, during January 2020 to December 2024 in 3 blocks (Suri-1, Rajnagar & Md Bazar) of Birbhum district, West Bengal. The survey collected socio-demographic data such as education, type of house, type of fuel used and sanitation from the study areas. All names and identifying information were omitted or edited right at the data collection stage to ensure anonymity. All participants were informed of the purpose and scope of the study, informed of their rights regarding privacy, withdrawal during the study, and care was taken to ensure comfort and safety of all participants.

Variable Description

Outcome Variables

Child marriage prevalence was measured from age at first marriage of ever-married women aged 13–44 years. To capture the socioeconomic factor of child marriage women's age at marriage was considered as a dependent variable by categorizing <18 years and ≥ 18 years. On the other hand, age at first marriage of women is considered as the independent variable to find out the impact of child marriage on adverse pregnancy outcomes. The outcome variable was coded as 0 for <18 years child marriage women and coded as 1 for ≥ 18 for marriage women in the study.

Predictor Variables

Socioeconomic variables were included as predictor variables to determine the factors of child marriage. Religion was coded as Hindu, Muslim, Christian, and other. Caste was

recorded as Scheduled Tribes, Scheduled Castes, Other Backward Classes, and others. The Scheduled Castes include a group of the population that is socially segregated and economically disadvantaged due to their low status in the Hindu caste hierarchy. The Other Backward Classes are considered low in the traditional caste hierarchy but include intermediate socioeconomic groups. The “others” caste category refers to those with higher social status.

Education level of the tribal population are classified as illiterate, able to read and write, 1-4 standard, 5-8 standard, 9-12 standard, college and not applicable.

Houses made from mud, thatch, or other low-quality materials are called kuccha houses, houses that use partly low-quality and partly high quality materials are called semi-pukka houses, and houses made with high quality materials throughout, including the floor, roof, and exterior walls, are called pukka houses. Again, in the study, sanitary latrine has been divided into present and in use, present and not in use and absent. Open defecation is identified as absent.

Type of fuel used has been divided into firewood, LPG, and others. Among category others Gul/coal, dung cake were included. In the formation of wealth index, five groups have been created such as poor, poor middle, middle, upper middle and upper.

Outcome of the baby was divided into live birth, abortion and stillbirth. Again, the outcome of the mother was divided into healthy, complicated and death .

Wealth index was calculated on the basis of type of house, type of fuel materials used for cooking, sanitation and type of house used through principal components analysis (PCA) guidelines.

Data analysis

Descriptive statistics were carried out to understand the distribution of the study participants. Bivariate analysis was conducted to examine the nature of the association between child marriage and socioeconomic factors. Furthermore, Pearson's Chi-square was performed to test the level of significance in the association. Finally, multivariate logistic regression was applied to examine the factors associated with child marriage and its impact on selected pregnancy outcomes of women. The regression results are presented by estimated odds ratios

(ORs) with 95% CIs. STATA version 12.1 (StataCorp LP, College Station, Texas, USA) has been used for all statistical analyses.

RESULTS

Among the total sample of 2166 women, majority were Hindu (61.17%) and belonged to the general caste ((35.13%). Nearly 7.48 % of the respondents had no formal education. About 13.16% of women got married at below age of 18 years. 36.14 % of teenage women had 5-8 standard education and 48.77 % women had 9-12 standard education while for women ≥ 18 years the incident was 24.33% and 51.2% respectively.

Results

Table-1: Descriptive statistics and odds of child marriage by socio-economic characteristics

variable	Respondent characteristic, n (%)	Child marriage, n (%)	AOR(95 % CI)	p-value
Social groups				
Caste				
ST	201(9.28)	31(10.88)	Ref	
SC	748(34.53)	139(48.77)	.733(0.46 1.17)	0.192
OBC	456(21.05)	51(17.89)	1.377(.81 2.34)	0.237
Other	761(35.13)	64(22.46)	1.889(1.14 3.12)	0.013
Religion				
Hindu	1325(61.17)	194(68.07)	Ref	
Muslim	827(38.18)	90(31.58)	1.318(0.99 1.75)	0.054
Christian	13(0.60)	1(0.35)	2.283(.266 19.53)	0.451
Other	1(0.05)	0(0.00)		
Women's Education				
Illiterate	162(7.48)	18(6.32)	Ref	
Able to read & write	4 (0.18)	0(0.00)		
1-4 standard	175(8.08)	21(7.37)	1.310(.39 1.32)	0.481
5-8 standard	527(24.33)	103(36.14)	7176(.39 1.32)	0.287
9-12 standard	1109(51.2)	139(48.77)	1.959(1.07 3.57)	0.028
College & above	175(8.08)	1(0.35)	68.83(8.82 537.15)	0.000
Not applicable	14(0.65)	3(1.05)	.983(.225 4.29)	0.983
Father's age				
16 - 24 years	630(29.09)	197(69.12)	Ref	
25 to 35 Years	1324(61.13)	87(30.53)	4.344(3.26 5.79)	0.000
36 to 45 years	187(8.63)	1(0.35)	32.416(4.45 235.91)	0.001
46 years & above	25(1.15)	0		
Family Type				
Nuclear	1859(85.83)	242(84.91)	Ref	
Extended Nuclear	24(1.11)	1(0.35)	4.10(.494 33.97)	0.191
Joint Family	283(13.07)	42(14.74)	.854(.58 1.24)	0.412

Ref = Reference category, CI=Confidence interval, OR=Odds ratio

As per multivariate logistic regression analysis for assessing the socio-demographic factors of child marriage the educational attainment of women is found to be a strong predictor of child marriage. Higher educated women were less likely to opt for early marriage (adjusted Odds ratio [AOR]: 68.83, 95% CI: 8.82– 537.15) compared to less educated women. Child marriage for other population is positive compared to SC & ST population (adjusted Odds ratio [AOR]: 1.889, 95% CI: 1.14 – 3.12) and p-value significant.

Table-2: Descriptive statistics and odds of child marriage by household characteristics.

variable	Respondent characteristic , n (%)	Child marriage, n (%)	AOR(95 % CI)	p-value
Social groups				
Type of House				
Pucca	1098(50.69)	109(38.25)	Ref	
Semipucca	723(33.38)	126(44.21)	0.563(.425 .745)	0.000
kuchha	345(15.93)	50(17.544)	.811(.556 1.184)	0.279
Sanitary Latrine				
Present and in use	1542(71.19)	166(58.25)	Ref	
Present but not in use	79(3.65)	16(5.61)	.528(.296 .942)	0.031
Absent	545(25.16)	103(36.14)	.584(.441 .774)	0.000
Type of Fuel used				
Firewood	1205(55.63)	192(67.37)	Ref	
Bio-gas	3(0.14)	0		
LPG	624(28.81)	39(13.68)	2.512(1.735 3.637)	0.000
Electricity	52(2.4)	8(2.81)	1.065(.493 2.302)	0.871
Other(gul, dung cake etc)	282(13.02)	46(16.14)	0.960(.6747 1.366)	0.822
Quintile				
Poor	337(15.56)	64(22.4)	Ref	
Poor Middle	326(15.05)	71(24.9)	.861(.584 1.270)	0.452
Middle	433(19.99)	65(22.8)	1.347(.908 2.000)	0.138
Upper Middle	528(24.38)	52(18.2)	2.197(1.427 3.385)	0.000
Upper	542(25.02)	33(11.5)	3.637(2.160 6.123)	0.000

Ref = Reference category, CI=Confidence interval, OR=Odds ratio

As per multivariate logistic regression analysis for assessing the socio-demographic factors of child marriage the semi-pucca house, open defecation or absent of toilet , use of LPG gas as fuel and upper middle and upper quintile of women household is found to be a strong predictor of child marriage. Early marriage women use semi pucca house adjusted Odds ratio [AOR]: 0.563, 95% CI: .425 - .745) and p-value significant and absent of toilet adjusted Odds

raio [AOR]: .584, 95% CI: .441 - .774) and p-value significant. LPG gas use as fuel for early marriage women adjusted Odds ratio [AOR] : 2.512 , 95% CI : 1.735 – 3.637) and for upper quintile adjusted Odds ratio[AOR]: 3.637 , 95% CI : 2.160—6.123).

Table-3: Association between pregnancy-related outcomes and age at marriage

Age at marriage	Healthy	Complicated	Death	Abortion	Still birth
<18 Years	262(91.93)	0	23(8.07)	9(3.16)	2(0.70)
>=18 Years	1741(92.56)	2(0.11)	138(7.34)	117(6.22)	25(1.33)

Prevalence of adverse reproductive outcomes such as abortion and still birth was 3.16 % and 0.70% for < 18 years and 6.22 % and 1.33 % for > 18 years and above. But death for child marriage was 8.07% while 7.34% for adult women during pregnancy.

DISCUSSION

The incidence of girl child marriage is considerably high in many districts of West Bengal. According to NFHS-5 (2019-21) data, West Bengal has one of the highest rates of child marriage in India, with 41.6% of women aged 20-24 marrying before 18. Despite a decline in fertility, 16% of women aged 15-19 have already begun childbearing. Marriage rates are highest among the lowest wealth quintile, where 56% marry before 18[NFHS-5, 2019-21, West Bengal]. There is not much difference in the prevalence of child marriage irrespective of religion and caste. The proportion who have started childbearing is much higher among young women who had no schooling (33%) than those with 12 or more years of schooling (7%) [NFHS-5]. This result is more or less consistent with our study. The wedding is celebrated as a ceremony whether it was not justified the bride is of legal age or not. Therefore, the social and cultural context may influence the age at marriage of a girl [Duran S & Tepehan Eraslan S.(2019, Chowdhury FD, 2004]

Child brides are also less likely to receive proper medical care during pregnancy and delivery than those who give birth later. The combination of girls being physically immature and the lack of proper medical care during pregnancy and childbirth put adolescent mothers at higher risk for complications during gestation and delivery, including prolonged or obstructed labor, fistula and death (Xu et al. 2003)

Girls who are married young experience higher rates of malnutrition, isolation, and depression (Le Strat et al; 2011), and higher maternal mortality and morbidity than girls who marry after age 18, in part due to IPV (Campbell 2002; Carbone-Lopez et al; 2006). These

health outcomes result in increased immediate out-of-pocket expenses for the girl and her household, as well as lasting effects on household earnings and reduced productivity. Intergenerational effects are seen in her children, who may have poor physical health outcomes and poor nutrition status, and experience higher rates of infant mortality. Most of child brides belong to poor, poor middle and middle quintile study population.

However, the risk of adverse pregnancy outcomes not solely depends on child marriage but may also partly depend on the biological and physical fitness of the mother, proper health services, poor nutritional status, and inadequate antenatal care.

CONCLUSION

Girls who marry early have little decision-making power within the marital home, a greater likelihood of school dropout and illiteracy, lower labor force participation and earnings, and less control over productive household assets. Because child brides often become mothers during adolescence, they and their children are likely to experience poorer overall health and nutrition. Girls who bear children early have more dangerous, difficult, and complicated births, and tend to have less healthy and less well-educated children than their peers who marry later. Programs should aim at enlightening adolescent girls as well as their parents of the durable adverse health outcomes of early marriage and early motherhood.

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Ethical Issues

All the participants in the study were informed about the purpose of the study and full free and voluntary written consent was taken before their inclusion. Each participant was free to withdraw from the study at any point in time and was ensured confidentiality of the responses.

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We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us.

Conflict of interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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