

Reproductive health and birth practices among early married females: A cross-sectional study in Jaipur India



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ABSTRACT

Background: Early marriage is not only a violation of females but also causes harm to their physical and psychological health. **Aims and Objectives:** The aim of the study was to determine the prevalence of early marriage and its association with reproductive health of females. **Materials and Methods:** This community based cross-sectional study was conducted among 322 married females in the field practice areas of JNU-IMRC, Jaipur, Rajasthan. The data were analyzed using Statistical Package for the Social Sciences 20.0. **Results:** The study found that 53.4% of the females had married before the age of 18 years. Significant associations were found between age at marriage, their socio-economic status, number of children, awareness of contraception, and history of various obstetric complications ($P < 0.05$). **Conclusion:** The study brings forth the fact that early marriages have an adverse effect on reproductive health of the females. Rigorous efforts and policies should be put in place for the adolescents to understand their reproductive health better.

Key words: Birth practices; Early marriage; Reproductive health; Rural

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INTRODUCTION

Marriage is considered as a time of celebration and marks the transition to adulthood all over the world.¹ It is known as a very important event in adult life in many countries where it is regarded as the only socially acceptable way to procreate. In essence, marriage defines the beginning of a socially acceptable sexual and child bearing period. It can be said without a doubt that adolescence is a critical period in the life of a girl child as it is this period that is considered to shape the future of adolescent females.² Child marriage refers to any formal marriage or informal union between a child under the age of 18 years and an adult or another child.³ It is practiced in the country as a result of deep

seated gender inequality, which disproportionately affected girls.³ Early marriages have been reported to result in higher school dropout rates, low wages and high unemployment rates, not to mention the poor health status and higher crime rates against women.⁴ Child marriage is now firmly on the global development agenda, most prominently through its inclusion in Sustainable Development Goal target 5.3, which aims to eliminate the practice by 2030, and indicator 5.3.1 which measures proportion of women aged 20–24 years who were married or in a union before age of 15 and 18 years.⁵ The principal causes leading to this stigmatized custom against adolescent girls can be considered as poverty, protection of the adolescent girls and reinforcement of social ties.⁶ Along with this, girls

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from rural background are also reported to be at a higher risk of this practice.⁷ Young mothers are also said to be at a higher risk of sexually transmitted diseases, cervical cancer, malaria, death during childbirth, and obstetric fistulas, to name a few.⁸ Not only this, girls marrying early also suffer from a gamut of complications during their delivery thereby putting their health at risk.⁹ The prime reason for parents marrying their girl child early could be to protect their righteousness and health including prevention of sexually transmitted infections, such as acquired immune deficiency syndrome.¹⁰ Child brides become mothers at an early age, often because they are under intense social pressure to prove their fertility. They are more likely to experience early, frequent, and often unwanted pregnancies. Where girls survive childbirth, they are at increased risk of post pregnancy-related complications. For example, 65% of all cases of obstetric fistula occur in girls under the age of 18.¹¹ Not only they are susceptible to complications after delivery, they are also vulnerable to stillbirth, miscarriage, and wasted pregnancies, to name a few.¹² Lack of contraceptive practices among child brides is also one of the factors behind these antenatal and postnatal complications. Limited researches are available on how early marriage may limit young women's lives and compromise their choices. Particularly, not much has been documented regarding the association between age at marriage and their reproductive health. In India, gender equality is far from achieved due to various challenges in the society, which majorly include violence against women and gender discrimination.¹³ Keeping the above discussed social problems in mind the present study was conducted.

Aims and objectives

The aim of the study was to determine the prevalence of early marriage in the study area, its socio demographic determinants, and its association with reproductive health of the females.

MATERIALS AND METHODS

It was a community-based cross-sectional study conducted in field practice areas of JNU-IMSRC, Jaipur, Rajasthan, during first half of 2019 after taking ethical clearance from the concerned committee (JNUIMSRC/IEC/2019/60). Literature review revealed that the prevalence of child marriage in India is 27%.¹⁴ Assuming this prevalence with relative error of 5% at level of significance of 95%, the sample size was calculated.

The equation used for calculating sample size is as follows:

$$n = \frac{Z^2 P (1 - P)}{e^2}$$

Where,

Z=Level of confidence - 95% (1.96)

P=Prevalence of early marriage

e=Margin of error

The sample size came out to be approximately 303. Assuming non-response rate to be 5%, 322 married females were taken up for the study.

Data collected was analyzed using Statistical Package for the Social Sciences 20.0 software. Proportions and percentages were computed for categorical data. Statistical significance was considered at P<0.05.

A house-to-house survey was conducted in the rural field practice area of JNU-IMSRC. A village from the study area was selected randomly by lottery method. First house in the village was selected randomly to start data collection and every alternate house was taken for survey till target sample size is achieved. A semi-coded and pretested questionnaire in local language (Hindi) was used to collect the relevant information.

Informed consent was taken from all the participants. The data were collected over a period of 2 months.

Inclusion criteria

Women having a married life of <10 years were included in the study to minimize recall bias. The age at marriage was confirmed either orally or from marriage certificate if available. Events related to pregnancy and child birth were confirmed from the available records such as antenatal card. When these records were not available, this information was sought from the respondent.

Exclusion criteria

Those with married life more than 10 years and those not gave consent to participate in the study.

RESULTS

According to the study, it was found that more than half (n=172, 53.4%) of the study participants reported to have been married before the legal age of 18 years (Table 1).

The mean age of the included women, at the time of interview for the study, was found to be 27.39±5.56 years for early married subjects (n=172), and 28.76±5.07 years (n=150) for those married after 18 years. The mean age of the spouse in the two groups was found to be 31.45±6.18 and 31.95±5.92 years, respectively. However, the mean marital age of 15.84±1.92 years was reported among early married females while it came out to be 21.32±2.49 years

Table 1: Proportion of early married females in the study population

S. No.	Age at marriage of women	Frequency	Percent
1.	<18 years	172	53.4
2.	>18 years	150	46.6
3.	Total	322	100.0

among females who got married after 18 years. Similarly, the mean marital age of male partners of early married females was found to be 19.97 ± 3.49 years which itself, is less than the legal marital age for boys in the country and stands at 21 years. On the other hand, males who had married females of age 18 years and more had mean marital age as 24.10 ± 3.52 years. The mean age of women at the delivery of the first child was found to be 17.80 ± 4.65 years in case of females marrying early while it was 21.40 ± 6.51 years among women marrying later. Furthermore, the time interval between marriage and delivery of the first child was observed much less (1.37 ± 3.57 years) among females getting married at <18 years while the same was noted to be a bit more (2.86 ± 2.79 years) in case of females marrying later. The difference between means for the last two variables was significant. (Table 2).

As for the socio-demographic determinants, statistically non-significant association was found between marital age and religion where a large number of females (74.4%) married under 18 years of age belonged to Hinduism while rest were Muslims. Similarly, in case of females married after 18 years of age, 80% were followers of Hindu religion while the rest were Muslims. Statistically significant associations ($P < 0.05$) were found between marital age and educational status, socio-economic status, nature of employment, education status of the male partner, and number of children in the family. It was observed that practices of marriage before 18 years of age was more prevalent among females who were illiterate ($n = 61$, 35.5%), belonged to middle socio economic status ($n = 102$, 59.3%), and had 3 or more children ($n = 139$, 80.8%). Also, males who were laborers ($n = 81$, 47.1%), illiterate ($n = 48$, 27.1%) or had maximum education up to high school ($n = 90$, 52.3%), found to have married an underage girl predominantly. Statistically non-significant association of early marital age was observed with employment status and marital status of the females ($p > 0.05$) (Table 3).

Regarding reproductive health of the females, it was noted that a little less than half ($n = 70$, 40.7%) of the study participants among younger age group (<18 years) had a history of vaginal discharge while 49.3% ($n = 74$) females marrying later had the same complaint. No history of the lower abdominal pain was elicited among majority of the females who had married early ($n = 90$, 52.3%), while the

same was found to be prevalent among females marrying later than 18 years ($n = 82$, 54.7%). The same pattern was observed in case of unwanted pregnancies where 82.6% ($n = 142$) had borne children before the age of 18 years, while 86.7% ($n = 130$) were able to delay their pregnancies. All three of these associations were not found to be statistically significant ($P > 0.05$) (Table 4).

Awareness about contraception was found to be rampant among women marrying later at 62.7% ($n = 94$) as compared to females getting married early (42.7%, $n = 82$). This association was found to be statistically significant ($P < 0.01$). In case of contraception usage, it was recorded that women marrying at <18 years of age had more temperament to use contraception after marriage (69.8%, $n = 120$), the prevalence of which increased after birth of the first child (83.7%, $n = 144$) as compared to women marrying late (67.3%, $n = 101$; 76.0%, $n = 114$, respectively). Both of these associations were not found to be statistically significant. History of abortion was found in majority among females who had married late (76.0%, $n = 114$). This association was not found to be statistically significant ($P > 0.05$). However, significant association was found between early marriage and prolonged labor in case of early married females ($n = 143$, 83.1%) ($P < 0.05$). Obstructed labor was observed to be a prominent problem in early marriages (96.5%, $n = 166$), but the association between these variables was not found to be significant ($P > 0.05$). As expected, the prevalence of vesico-vaginal fistula was observed to be higher among females marrying early (77.3%, $n = 133$) as compared to females marrying later than 18 years (66.7%, $n = 100$). This association was found to be statistically significant ($P < 0.05$). History of medical termination of pregnancy (MTP) was ubiquitous among females marrying late (94.7%, $n = 142$) as compared to early married females (87.8%, $n = 151$). This association was found to be statistically significant ($P < 0.05$). History of stillbirth (84.0%, $n = 126$) and delivery of last child at a health facility/hospital (77.3%, $n = 116$) was found to be positive majorly among females marrying late, the association of which was not found to be significant ($P > 0.05$). Furthermore, statistically significant association ($P < 0.05$) was found between early marriage of females and number of children having birth order of three or more (80.8%, $n = 139$).

DISCUSSION

Despite laws against it, the practice of early marriage remains widespread around the globe especially in developing countries. Worldwide, one in every five girls is married, or in union, before reaching age 18. In the least developed countries, that number even doubles –

40% of girls are married before the age of 18, and 12% before the age of 15 years.⁵ In India, 40% of the females are reported to be married before reaching the legal age.¹⁴ In our study, the prevalence of early marriage was found to be 53.4% in the study population, much higher than the state's prevalence of 35.4% in Rajasthan itself, 36.22%¹⁵ in Manipur, and 42.5% in Bihar-all reported early marriage above the national average.¹⁴ According to National Family Health Survey 4 data, the median age at marriage for females in the country has been observed to be 19.0 years, while for men it is 24.5 years; both of which have seen a rise from 17.2 years to 22.6 years, respectively.¹⁴ In the present study, however, the mean age at marriage of women marrying before the legal age was found to be 15.84±1.92 years, while for men it was 19.97±3.49 years. A study, conducted in Sudan, reported concordant findings with the present study with mean age of marriage at 15.4 years.¹⁶ The practice of early marriage was found to be more prevalent among Hindus (74.4%) which was in concordance with another study which also reported higher prevalence of the same among Hindus, probably because of social, economic, and health perspectives.¹⁷ Islam has also been reported to be a higher contributor to child brides in a study in Nigeria where religion plays a significant role in shaping values and practices at individual, household and community level, including girl-child development issues.¹⁶

As this study was conducted in a rural population, the higher prevalence of early marriage (53.4%) was found to be similar to the findings in studies conducted in countries such as Nigeria and Bangladesh.^{16,18} Patriarchy, coercion, social customs, and norms could be mentioned as principal determinants in case of forcing girls into marrying early.¹⁹ Education, almost universally, plays a protective effect in delaying early marriage, among both girls and boys. In a patriarchal society like India where inequality is deeply rooted in its socio-cultural norms, girls have little opportunities for their education. Most of them drop-out before the completion of secondary education because of early age at marriage.¹² Similar to this study, an inverse association between education status and early marriage, also surfaced previously by other researchers.^{16,20} Early marriage and socio economic status, also found to have a significant association, wherein females, belonging to lower socio-economic status were more among early married ones. The same has been depicted in studies conducted in various countries worldwide,^{21,22} as well as in the country itself.¹² Furthermore, in our study, the results have been found to be consistent with other studies primarily because poor families often tend to think that marrying their girl child early, will provide social and financial security to their daughters.²³ Cultural family structure, weak authority of females, and responsibility to fulfill needs, also forces

parents of a girl child to marry their child at a younger age.²⁴

In our study, it was observed that husbands who were involved in labor as well as those having education till high school were more likely to marry females less than the national legal age for marriage. Lack of proper education and societal pressures may be the reasons for this. As a result of getting into illegal and immature union, boys discontinue their education and do not find motivation to finish their studies due to added pressure to support the family.²⁵ The responsibility of financial management in our study was found to primarily rest with the male counterpart only, probably because in Indian society, males are supposed to be playing the role of head of the family.²⁶ As far as fertility is concerned, significant associations were found between high fertility (three or more children) and early marriage, similar to a study done in Africa²⁰ which demonstrated high odds' ratio (OR=8.00; 95% CI: 7.52, 8.46) of more number of children when females were married early. This could be because of lack of knowledge or access to contraceptive services, or increased control by in-laws which is a very prominent feature of Indian society.²⁷

We found that, presence of vaginal discharge and age of marriage were not significantly associated, wherein positive history of the same was elicited more, in females married after 18 years, compared to early married ones. Similar findings of elderly females having higher prevalence of vaginal discharge as compared to females <18 years of age was reported in another study done in India,²⁸ however, they reported a significant association, contrary to the findings of present study. In contrast, another study reported that early marriage comes with risk of having profuse vaginal discharge, as early onset of sexual activity may make the cervical epithelium more susceptible to ascending infections.²⁹ Furthermore, not opting any contraceptive method, early child bearing and obstetric morbidity also contribute towards the problem.²⁹ History of the lower abdominal pain was also found to be more prevalent in females married late with a non-significant association with early marriage in this study. Similar findings reported by other researchers in New Delhi, India,³⁰ wherein early married females had less odds of suffering from lower abdominal pain, but with a statistically significant association. Regarding unwanted pregnancies, the prevalence of the same was more for females married late but the association between age at marriage and unwanted pregnancies was not found to be statistically significant. A study conducted in Sub-Saharan Africa also revealed that older women had a higher prevalence of unwanted pregnancies as compared to females marrying early.²⁰ However, this was discordant with an Indian study which reported more number of unwanted pregnancies

with child marriage as early marriage reduces the women's control over reproduction in social context, be it either due to lack of contraceptive practices or due lack of accessibility for the same.²⁷

In our study, significant association between awareness of contraception and early marriage was observed, as more number of early married females were aware about contraception, compared to females in other group.

Table 2: Mean age of women and their spouses, when interviewed and at marriage; and women's age at first delivery

Variable	Marital age group	N	Mean	SD
Age of women	Less than 18 years	172	27.39	5.56
	More than 18 years	150	28.76	5.07
Age of husband	Less than 18 years	172	31.45	6.18
	More than 18 years	150	31.95	5.92
Age of women at marriage	Less than 18 years	172	15.84	1.92
	More than 18 years	148	21.32	2.49
Age of husband at marriage	Less than 18 years	172	19.97	3.49
	More than 18 years	150	24.10	3.52
Women's age at first child delivery*	Less than 18 years	166	17.80	4.65
	More than 18 years	140	21.40	6.51
Time interval between marriage and first child*	More than 18 years	162	2.86	2.79
	Less than 18 years	130	1.37	3.57

*P<0.001

Table 3: Socio-demographic determinants of study population

Parameter	Marital age < 18 years N (%)	Marital age > 18 years N (%)	P-value
Religion			
Hindu	128 (74.4)	120 (80.0)	0.38
Muslim	44 (25.6)	30 (30.0)	
Educational status			
Illiterate	61 (35.5)	25 (16.7)	<0.001*
Primary	33 (19.2)	14 (9.3)	
High School	58 (33.7)	53 (35.3)	
Senior Secondary	11 (6.4)	14 (9.3)	
Graduate	8 (4.7)	25 (16.7)	
Post Graduate	1 (0.6)	19 (12.7)	
Employment status			
Employed	128 (74.4)	120 (80)	0.28
Home maker	44 (25.6)	30 (30)	
Socioeconomic status			
Low	70 (40.7)	28 (18.7)	<0.001*
Middle	102 (59.3)	122 (81.3)	
Marital status			
Divorced/Separated	2 (1.2)	2 (1.3)	0.99
Currently Married	170 (98.8)	148 (98.7)	
Husband's employment			
Private Job	49 (28.5)	81 (54.0)	<0.001*
Driver	31 (18.0)	14 (9.3)	
Government Job	2 (1.2)	12 (8.0)	
Self Employed	1 (0.6)	2 (1.3)	
Laborer	81 (47.1)	29 (19.3)	
Others	8 (4.7)	12 (8.0)	
3 or more children			
Yes	139 (80.8)	90 (60.0)	<0.001*
No	33 (19.2)	60 (40.0)	
Husband's education			
Illiterate	48 (27.9)	14 (9.3)	<0.001*
Primary	16 (9.3)	12 (8.0)	
High School	74 (43.0)	40 (26.7)	
Senior Secondary	11 (6.4)	19 (12.7)	
Graduate	18 (10.5)	49 (32.7)	
Postgraduate	5 (2.9)	16 (10.7)	
Total	172 (100)	150 (100)	

*P<0.05

Table 4: Reproductive health and birth practices with age at marriage

	Age of the female at the time of marriage		P-value
	Less than 18 years N (%)	More than 18 years N (%)	
History of vaginal discharge			
Yes	70 (40.7)	74 (49.3)	0.12
No	102 (59.3)	76 (50.7)	
History of lower abdominal pain			
Yes	82 (47.7)	82 (54.7)	0.22
No	90 (52.3)	68 (45.3)	
Unwanted pregnancy			
Yes	142 (82.6)	130 (86.7)	0.31
No	30 (17.4)	20 (13.3)	
Awareness of contraception			
Yes	90 (52.3)	56 (37.3)	<0.001**
No	82 (42.7)	94 (62.7)	
Contraceptive use after marriage			
Yes	120 (69.8)	101 (67.3)	0.08
No	52 (30.2)	49 (32.7)	
Contraceptive use after first childbirth			
Yes	144 (83.7)	114 (76.0)	0.09
No	28 (16.3)	36 (24.0)	
History of miscarriage			
Yes	129 (75.0)	114 (76.0)	0.89
No	43 (25.0)	36 (24.0)	
History of prolonged labor			
Yes	143 (83.1)	108 (72)	0.02**
No	29 (16.9)	42 (28)	
History of obstructed labor			
Yes	166 (96.5)	141 (94)	0.30
No	6 (3.5)	9 (6)	
History of Vesico-vaginal fistula			
Yes	133 (77.3)	100 (66.7)	0.03**
No	39 (22.7)	50 (33.3)	
History of MTP*			
Yes	151 (87.8)	142 (94.7)	0.03**
No	21 (12.2)	8 (5.3)	
History of still birth			
Yes	142 (82.6)	126 (84.0)	0.77
No	30 (17.4)	24 (16.0)	
Hospital delivery of last child.			
Yes	54 (31.4)	34 (22.7)	0.80
No	118 (68.6)	116 (77.3)	
Birth order three or more			
Yes	139 (80.8)	90 (60.0)	<0.001**
No	33 (19.2)	60 (40.0)	
Total	172 (100)	150 (100)	

*Medial termination of pregnancy. **P<0.05

Although insignificantly higher, contraceptive usage was also found to be more among females, married early. Study conducted in Bangladesh, also showed, that majority of the adolescents were aware of contraceptive options, but were not using any, due to socio-cultural environment and inadequate advise by the elder family members, because of their unfamiliarity with contraceptives. It is the usual belief that if the couple starts contraceptive use earlier, subsequently, the woman becomes infertile. Hence, in most of the cases, decision to use contraception comes either from husband or from the elders of the family. However, the trend is gradually changing as both husband and wife now take part in decision-making process about

contraceptive use. Along with this, female education also plays a role in awareness of contraception and usage of the same along with delaying of marriage, thereby postponing the child bearing role of the woman.³¹ Furthermore, increased contraceptive use after marriage in early married females could also be attributed to the fact that they are able to bear the desired number of children at an early age, as discernible by high fertility among these women.²⁰ Lack of contraceptive usage is also among major problems resulting in higher fertility among early married females as compared to females marrying late. The same was observed in another Indian study, wherein almost the same number of females (80.0%) as in our study, had unmet need for

contraception. The reasons for the same could vary from lack of knowledge about contraceptive methods, to poor accessibility to health services, to opposition of partner or family members. Apart from this, many females were observed to follow a fatalist attitude of considering children to be God's gift along, and hesitate to talk about contraception or negligent it.³²

In this study, regarding health outcomes, females marrying late had marginal higher frequency of miscarriages, compared to early married females with a non-significant variance. Contrary, a study did report higher likelihood of miscarriage or wasted pregnancy (OR 1.15, $P < 0.01$) among the women who married at age of ≤ 14 years than those women who married at age of ≥ 18 years.¹² However, same study also documents, women who married at the age of 15–17 years were no longer significantly associated with pregnancy-related health outcomes, like in our study, where mean age at marriage is close to 16 years. Contributing factors leading to a high abortion rate in young females could be physical and psychological immaturity, controlling attitude of the elders toward reproductive health of the females, low education about sexual and reproductive health, pre mature birth and nutritional deficiencies etc.^{20,27} Appreciably, more number of early married study participants had history of prolonged labor and vesico-vaginal fistulas, compared to females in other group. This is in line with other studies which reported health consequences of child bearing in early age, as young bodies of female adolescents are not developed strong enough to bear the force of childbearing.^{8,9,12,27} History of MTP in our study was found to be substantially higher in females married after 18 years. Other researchers also reported similar finding wherein more women, married after the legal age came to seek MTP, compared to younger females.^{33,34} This could be due to the fact that late marrying females might have completed their family and had suffered unwanted pregnancy due to which they sought MTP. In contrast, other studies have demonstrated the prevalence of pregnancy termination to be higher in early married females as compared to females married late.^{20,27} Still births among early married females also pose a major health hazard as these women often have poor socio-economic status, lower level of education, poor nutritional status, limited exposure to mass media, and live in backward areas, all of which have a negative impact on their pregnancy outcome.¹² In case of hospital delivery of the last child among our study participants, it was observed that females married early had more institutional deliveries, compared to other group. In contrast, other studies conducted in India, and other countries as well, reported that, as the age progressed, females are more likely to opt for institutional deliveries.³⁵⁻³⁷ Along with this, in our study, it was also observed that majority of females married early, reported to be having

a child of birth order to be three or more. This could be because of the fact that married adolescent females are exposed to sexual activity at a very early stage, and one of many reasons for it might be, that girls are supposed to prove their fertility in a country like India, as soon as get marry. Along with this, family's or husband's desire for a male heir or for more children, socio-economic and cultural factors, could also be some of the contributing factors toward higher fertility of early married females.^{20,38}

Limitations of the study

The sample size of our study was not very large (322). Hence, we cannot not generalise the findings of this study to other parts of the country. Also, this study was cross sectional in nature, so a causal association between variables cannot be established. Further research can be done with a larger sample size in other parts of the country, especially with rural background to have a better and clear picture to support our study results.

CONCLUSION

From the present study, it can be concluded that early marriage is still persisting as an abomination in the society, against which, proper and drastic measures should be taken. Not only as much to safeguard the health of the females involved in early marriage *per se*, but also to maintain their reproductive health which takes a backseat in the vicious cycle of lack of education, knowledge, access to health-care services, poor nutritional status, socio-economic, and cultural factors. Although India has made a huge progress in this field to curb this harmful practice, stringent measures and policies are still required to re-enforce the idea that early marriages should not be practiced. Passing a strict law against child marriage could be one step to curb this menace. Apart from this, adolescent girls should also be made aware of their rights, and proper policies and programs should be made available for their upliftment.

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CC- Concept and design of the study, data collection, reviewed the literature; **MNAK-** statistical analysis and interpretation, preparation of manuscript; **SA-** preparation of manuscript, revision of the manuscript

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