

Beyond Early Motherhood: Understanding and Preventing Adolescent Pregnancy Through Education, Empowerment and Social Transformation

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Abstract

In India, adolescent pregnancy is connected with several aspects including reproductive health, schooling, child marriage, household inequality, and the balance of power between men and women. This secondary quantitative paper synthesizes recent data main supported by NFHS-5 and a 2025 analysis of 122,477 girls between 15 and 19 years old. According to the data, 6.8% of the women aged 15-19 years at the time of the NFHS-5 were mothers or pregnant. In published NFHS-5 analyses, there was a clear social stratification of pregnancy, at 19.18% for girls with no education and 2.71% for those with an education; 10.5% for the poorest quintile and 2.45% for the richest quintile; and 8.43% in rural areas compared to 4.18% in urban areas. Exposure to family planning mass media campaigns was associated with a lower risk in adjusted analyses. Other studies in the states of Maharashtra and Uttar Pradesh-Bihar show that marriage, poverty, violence, low education, and poor knowledge of contraception are associated with pregnancy of adolescent girls. The results provide evidence for a prevention model that includes all of the following: school retention, marriage prevention, enhancement of women's agency, expansion of adolescent-friendly services, and a focus on poverty and restrictive norms.

Keywords: *adolescent pregnancy, NFHS-5, education, child marriage, empowerment, India, social determinants*

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I. Introduction

Pregnancy during adolescence remains a challenge for public health and social development because pregnancy before age 20 happens while education, economic opportunities, and personal autonomy are still developing. The Ministry of Health and Family Welfare in India reported that, according to NFHS-5, 6.8% of women between the ages of 15 and 19 years are mothers, or were pregnant, of which 8% of the population was rural, as compared to 4% of the population which was urban (MoHFW, 2023). These statistics capture only the national averages and conceal extensive geographical disparities. In the year 2023, Tripura, West Bengal, Andhra Pradesh, Assam, and Bihar recorded higher numbers (MoHFW, 2023).

Understanding the problem of adolescent pregnancy also requires looking beyond age. Early marriage increases exposure to pregnancy and schooling affects knowledge and bargaining power and poverty provides less options and unequal access to adolescent-friendly services limits the ability to prevent or manage pregnancy safely. Based on data from 2023, the UNICEF report on child marriage in India showed that the women in the age group of 20 to 24 years, who had no education, were far more likely to have married before the age of 18 in comparison to women in the same age group who had secondary education, or higher (UNICEF, 2023). In Uttar Pradesh and Bihar, women in the age group of 18 to 20 years who had married before the age of 18, and exposed to spousal violence, were found to have increased odds of adolescent pregnancy and motherhood. Adolescent pregnancy increased the risk of violence and adverse pregnancy. A mixed-methods study conducted in 2023 in the state of Maharashtra, revealed that marriage, economic shock, sexual exposure and weak contraceptive knowledge were most important risk factors for pregnancy.

This paper's aim is to give a multidimensional analysis of the factors shaping adolescent pregnancy. The author of this paper formulates his argument based on four questions: how big are the educational and wealth gaps?; what impact do residence and previously existing information have on risk?; how does child marriage enact a structural pathway?; what Indian evidence advocates which prevention strategies?

II. Review of Literature

Current research places education at the forefront of adolescent pregnancy prevention. Singh and Shri (2025), based on the NFHS-5 report of 122,477 women, found that increased education and wealth corresponded with a decrease in teenage pregnancies. The authors noted that the predicted probability of pregnancy decreased by roughly three percentage points for each level of secondary education, and by around eight percentage points for each level of higher education in comparison with no education. The authors also noted that exposure to family planning messages as a protective factor alongside wealth deprivation and rural residence, contributed to inequality. This is corroborated by South Asian pooled DHS data in which pregnancy among adolescents was shown to be attributed to poverty, limited media exposure, and family planning knowledge void; however, the use of contraceptives coupled with the desire to use family planning methods was shown to be protective (Poudel et al., 2023).

Child marriage is more than a consequence of child marriage, and it is important to understand child marriage itself as a risk factor. Evidence from India indicates that poorer and rural populations and individuals with lower levels of education have a higher prevalence of child marriage. Shri et al. (2023) stated that within the states of Uttar Pradesh and Bihar, those who married as adolescents had 1.79 times the odds of being pregnant and 3.21 times the odds of being a married mother. Child marriage has to be examined in the context of other social phenomena that affect a country, and has to be studied along with the impacts that marriage before adulthood has on women's reproductive decisions.

There are negative health implications for which prevention has to be advocated for. A high-risk pregnancy factor that was identified in the NFHS-5 analysis was young maternal age. Other studies have identified young maternal age (<20 years) as a risk factor for recent pregnancies and delivered poor outcomes (Kuppusamy et al. 2023; Tandon et al. 2023). There has been considerable positive change in the delivery of institutional services to adolescent mothers across the NFHS-4 and NFHS-5 surveys, but there remain inequities in terms of rural and urban location, level of education, regional inequities and wealth (Longchar et al. 2025).

III. Research Methodology

This paper employs a secondary quantitative analytical framework. No participants were recruited or participant-level observations were constructed. The main dataset is the Nationally Representative NFHS-5 (2019–2021), where the Ministry of Health and Family Welfare collaborated with the International Institute for Population Sciences and ICF. Estimates on childbearing among teenagers at the national and state levels were derived from the Health and Family Welfare Statistics of India 2023 published by the Ministry. Extended dimensions of subgroup data were obtained from the analysis of NFHS-5 concerning 122,477 girls aged between 15 and 19 years, published by Singh and Shri.

The outcome measures of teenage pregnancy/childbearing follow the definitions in the cited literature: currently being pregnant, previously being pregnant, and/or being a mother. To avoid spurious precision, subgroup estimates are provided along with the definitions as published. Based on the published data, the present study defines descriptive contrasts in transparent terms such as percentage-point differences and prevalence ratios. Inferences such as odds ratios are reported if and only if they were reported by the original published studies. Other studies in India as well as South Asia, especially in Maharashtra and Uttar Pradesh–Bihar, are also used for supplementary interpretation.

The main variables used are education, wealth status of the household, residence, region, and exposure to mass media and family planning. Because the microdata were not remodeled in this study, the analysis does not provide new regression coefficients. The ethical base is the secondary use of publicly available de-identified survey data and published research. The analysis increases transparency although it cannot provide causality from the cross-sectional national data.

Table 1. Principal quantitative evidence used in the analysis

Source	Population / dataset	Key statistic used
MoHFW (2023)	NFHS-5 national statistics	6.8% of women 15–19 already mothers/pregnant; rural ~8%, urban ~4%
Singh & Shri (2025)	122,477 girls aged 15–19, NFHS-5	Overall 7.23%; subgroup prevalence and adjusted marginal effects
Shri et al. (2023)	4,897 married adolescents, UP & Bihar	Marriage <18: OR 1.79 for pregnancy; OR 3.21 for motherhood
Shukla et al. (2023)	3,049 girls aged 13–18, Maharashtra	Education protective; marriage/economic

		vulnerability associated with pregnancy
Poudel et al. (2023)	20,828 ever-married adolescents, South Asia DHS	Poverty and low family-planning knowledge associated with pregnancy

Source: Compiled from the cited peer-reviewed and official sources; no participant-level data were generated for this paper.

IV. Results and Data Analysis

On a national scale, the stratification of teenage childbearing is more pronounced than the percentage. MoHFW (2023) places this percentage at 6.8% and reveals double the prevalence of teenage childbearing in rural areas when compared with urban areas. Singh and Shri (2025) in their NFHS-5 study, found a prevalence of teenage pregnancy at 7.23% using their broader definition of ever/current pregnancy. This gap is not a result of conflicting data, but rather a difference of definitions.

Education levels present the clearest definition. Among girls with no education, the pregnancy rate was 19.18%, among those with primary education, 13.36%, among those with secondary education, 6.62% and among those with higher education, 2.71%. The no-education to higher education gap was 16.47 percentage points, and the prevalence ratio was approximately 7.1. This monotonic decline is consistent with an education pathway of school retention and marriage at a later stage, as it also entails access to information and greater negotiating power.

Table 2. Teenage pregnancy prevalence by educational attainment, NFHS-5 reanalysis

Education	Sample frequency	Teenage pregnancy (%)
No education	5,398	19.18
Primary	6,435	13.36
Secondary	102,869	6.62
Higher	7,775	2.71

Source: Singh and Shri (2025), NFHS-5 reanalysis.

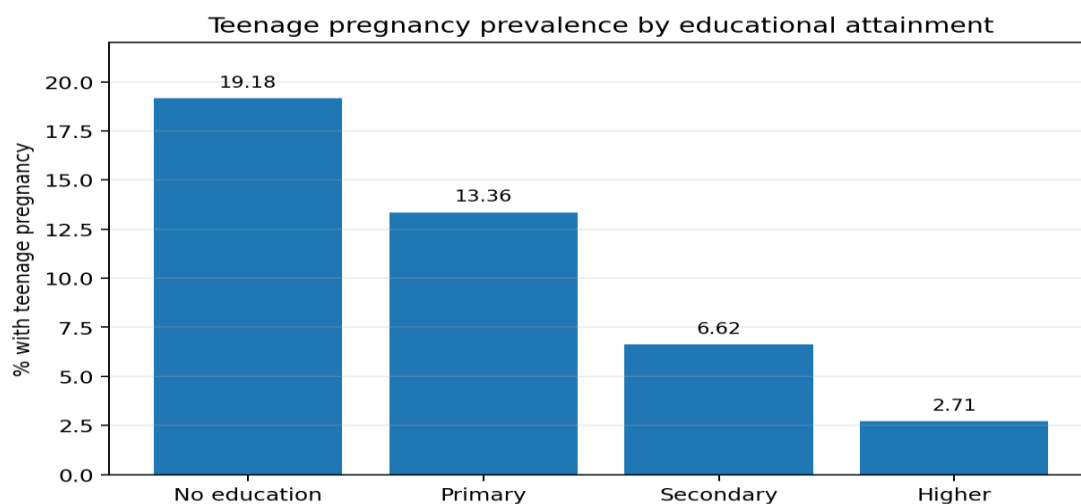


Figure 1. Teenage pregnancy prevalence by education. Source: Singh and Shri (2025).

A similarly ordered wealth gradient is observable. Pregnancy levels decrease from 10.50% in the poorest quintile to 8.52%, 7.32%, 5.50% and 2.45% in the successive richer quintiles. The gap between the poorest and the richest is 8.05 percentage points and the prevalence ratio is 4.3. This pattern can be best explained structurally. The material insecurity in the society would likely drive people to marry earlier and drop out of school, constrain transport for the use of services and make people less able to obtain private security and contraception.

Place and other factors also play a role. The prevalence in the rural area in Singh and Shri's study was 8.43% and was 4.18% in the urban area, a gap of 4.25 percentage points. The prevalence among girls with no general mass-media exposure was 8.84% compared to 6.02% among those who were exposed. The family-planning-specific mass media, when adjusted, had an odds ratio of 0.54 (95% CI 0.40 – 0.75), which means it was significantly lower among exposed adolescents. The regional prevalence was 3.68% in the Central and 3.70% in the North regions of India to 12.72% in the East and 11.99% in the North-east. From these data, it is obvious that more focus must be placed in each local region of the country to balance the overall national policy.

Table 3. Teenage pregnancy prevalence by household wealth

Wealth quintile	Sample frequency	Teenage pregnancy (%)
Poorest	29,426	10.50
Poorer	30,237	8.52
Middle	25,747	7.32
Richer	21,085	5.50
Richest	15,982	2.45

Source: Singh and Shri (2025).

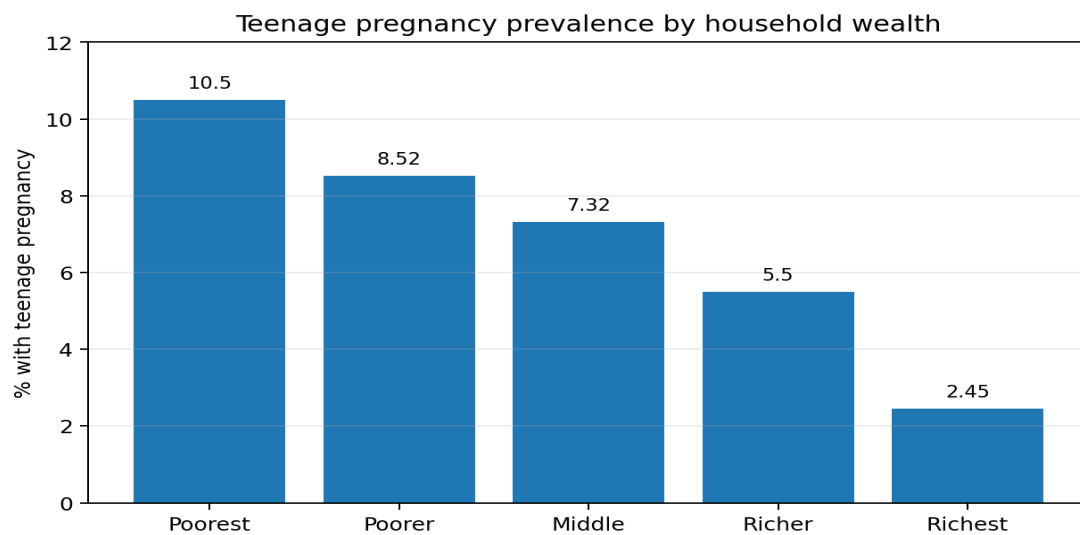


Figure 2. Wealth gradient in teenage pregnancy. Source: Singh and Shri (2025).

Table 4. Selected spatial and information-related differences

Indicator	Category	Teenage pregnancy (%)
Residence	Urban	4.18
Residence	Rural	8.43
Mass-media exposure	No	8.84
Mass-media exposure	Yes	6.02
Region	North	3.70
Region	Central	3.68
Region	East	12.72
Region	North-east	11.99
Region	West	7.28
Region	South	7.16

Source: Singh and Shri (2025).

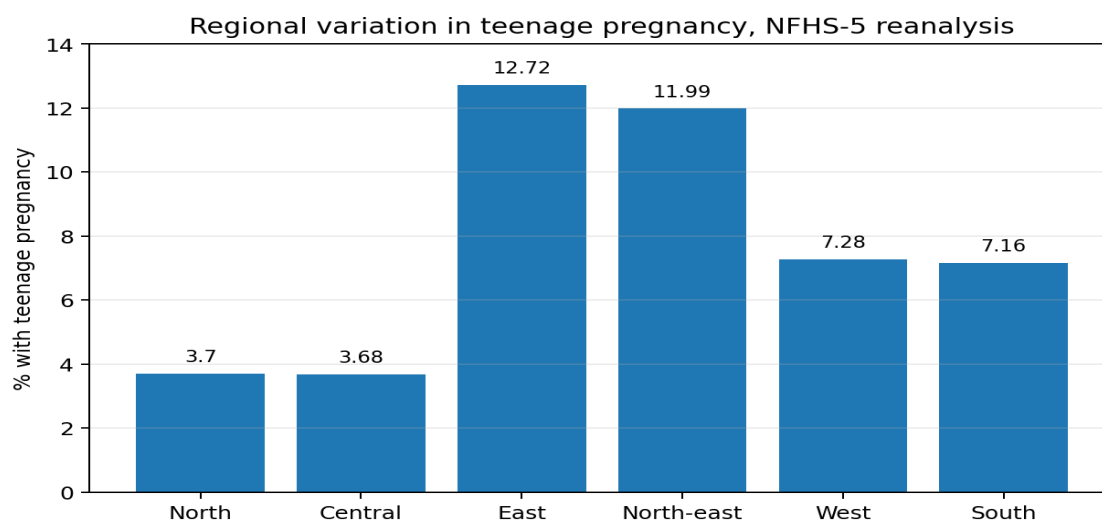


Figure 3. Regional variation in teenage pregnancy. Source: Singh and Shri (2025).

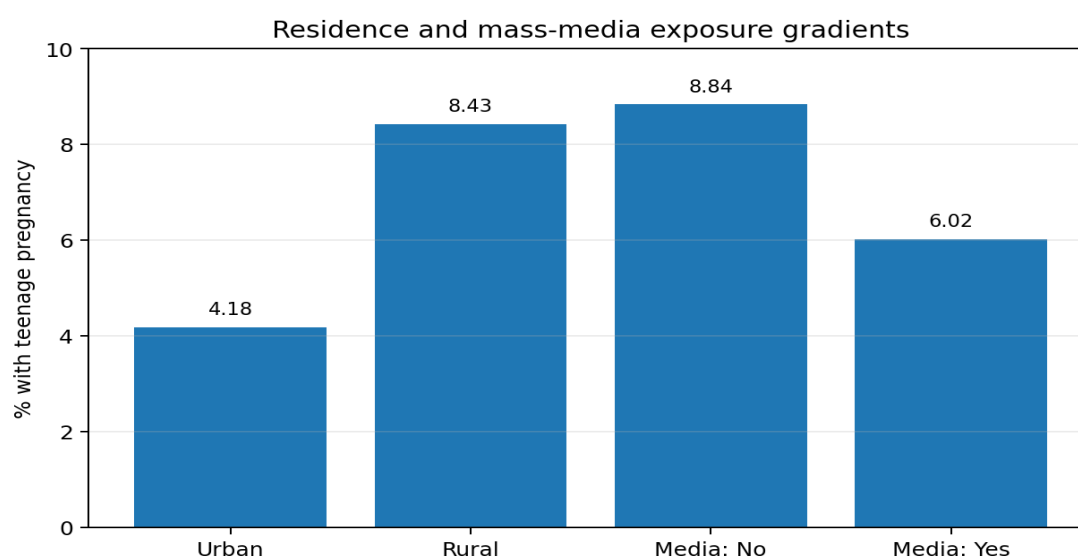


Figure 4. Residence and mass-media exposure gradients. Source: Singh and Shri (2025).

V. Discussion

The results support a social-transformation model of prevention. Education is more than knowledge. It can restructure the sequencing of the transitions of life. Educational attainment can help avoid marriage, sustain a social network, and set ambitious goals. Schooling can help individuals be exposed to reliable health information. The positive association of completing higher levels of education in the NFHS-5 data and of Maharashtra also support these findings (Shukla et al., 2023; Singh & Shri, 2025).

The positive association of education and the negative association of wealth show that information alone is not enough. A girl can know about a modern contraceptive method, but can lack privacy, mobility, money, and the right to make her own choices. Singh and Shri (2025) stated that despite the fact that 95% of adolescents knew a modern method of contraception, knowledge did not erase social inequalities. Therefore, prevention should move beyond simply increasing awareness. Social protection should be aimed at reducing the social inequalities that push families towards early marriage or school withdrawal.

Child marriage ties these disparities together. UNICEF's 2023 profile shows that women aged 20–24, who were married before the age of 18, were 48% of the women of that age group, amongst the women with no education. The corresponding statistics for the poorest and richest were 40% and 8% respectively. These statistics are similar to the adolescent pregnancy statistics. Shri et al. (2023) have also shown that there is an association between early marriage and pregnancy amongst married adolescents. Thus to achieve the goal of

adolescent pregnancy prevention marriage law needs to be enforced and this has to be coupled with school completion, safe transport, and economic support and norms need to be changed at the community level.

Two actions are mutually exclusive, but content quality is equally important. Family-planning media exposure was associated with a 46% lower risk of teen pregnancy in the NFHS-5 reanalysis. Digital and mass media campaigns should therefore provide age-appropriate content on consent, fertility, contraception, and the location of related services. Programs must take gendered phone and information access, as well as the high concentration of programs in eastern and north-eastern India, into consideration. Based on the concentration of programs, district-specific initiatives will best target local marriage, education, and poverty conditions, rather than a single initiative of a national coverage message.

VI. Recommendations and Implications

A prevention package is comprised of five interrelated components. To ensure uninterrupted secondary education, scholarships, safe transport, re-entry of married and parental adolescents, and targeted support in high prevalence districts should be used. In addition, age-appropriate sexuality and reproductive health education should be integrated with practical referral paths to adolescent-friendly clinics. The prevention of child marriage should be integrated with development programming and should include the support of local monitoring in addition to legal and economic household supports. Contraceptive service navigation should be used in conjunction with media and digital platforms to provide reliable, confidential contraception. Evaluations should focus on education, wealth, rural, and regional inequities to ensure decreasing national rates of prevalence do not mask growing inequities.

Table 5. Evidence-based prevention matrix

Intervention lever	Mechanism	Suggested monitoring indicator
Secondary-school continuation	Delays marriage and expands future options	Retention/completion among girls 15–19
Child-marriage prevention	Reduces early exposure to pregnancy	% married before 18
Confidential SRH services	Turns knowledge into usable prevention	Adolescent contraceptive counselling/use
Economic and mobility support	Reduces poverty-driven school exit/marriage	Scholarship uptake; safe transport coverage
Targeted media communication	Improves credible family-planning information	Exposure to verified SRH messages

Source: Author synthesis based on NFHS-5 evidence and 2020–2025 literature.

Proposed education-empowerment pathway

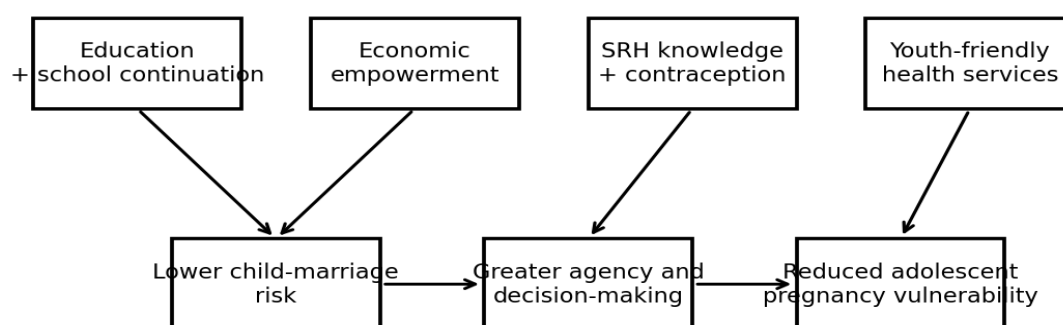


Figure 5. Proposed education-empowerment pathway for adolescent pregnancy prevention (conceptual framework).

6.1 Limitations and Research Priorities

Some analytical caveats are in order. First, the paper uses the official NFHS-5 teenage childbearing estimates along with a peer-reviewed reanalysis which employs a broad definition of ever or current pregnancy. Thus, there is not a precise comparison across the estimates, though they capture similar social stratification. Second, cross-sectional relationships do not permit causal inference and whether education, wealth, or media exposure leads to lower risk of pregnancy is not known. Education may lead to agency, but it may also reflect the household's economic means and parental aspirations as well as the local labor market. Pregnancy may lead to the ending of schooling which could contribute to lower educational attainment. Furthermore, the impact of some relationships is influenced by selection.

Concerning the use of contraceptive knowledge, it must be noted that although there is high awareness of modern methods in NFHS-5, this does not imply correct knowledge, or timely access, or even partner agreement to use and will not ensure consistent use. The use of certain variables in some tables which exhibit apparently counterintuitive relationships are provided to illustrate that unadjusted percentages should not be interpreted in a causal manner. Unless the pregnancy risk is controlled, such measures may be taken after the pregnancy and therefore may be in response to a risk.

A fourth challenge is the masking of within-state and district heterogeneity by aggregating regional comparisons. In some states, the prevalence of high risk can be found in rural and socially disadvantaged districts, while some urban districts can have low risk. Therefore, while planning programs, the evidence from the NFHS type surveys could be utilized in conjunction with indicators on school dropouts, marriage registrations, adolescent health, and available services at different levels. Lastly, for India, the evidence is stronger for correlates than for evaluated multi-component prevention packages. It is important to conduct trials and quasi-experimental studies in order to find if multiple combined interventions (retention support in school, cash transfers, bridge or scholarship support, gender-transformative community engagement, and confidential contraceptive services) can generate more impacts and sustainability compared to single interventions. The second priority should be to conduct service-usability research. In some contexts, providing services can give the illusion of protection to the adolescents, when in reality protection may be inadequate because of the fear of disclosure, lack of privacy, judgment by the service providers, and the inability to access the service without permission. Confidentiality, waiting time and service availability, completion of referral services, and adolescent satisfaction should be measured to find if service presence is equated with effective access. Even more important are the evaluations that include girls who leave school, migrate after marriage, and become mothers, because school-based prevention programs often do not reach this population. Evaluating these girls would give us information on if the interventions were actually successful in preventing first pregnancy, delaying second pregnancy, or at best, providing care to women after pregnancy. It is especially important to conduct evaluations on this population since the economic and educational impacts of adolescent pregnancy can have long lasting effects on the household's economic status and the future fertility and employment of the young women in today's contemporary Indian society.

VII. Conclusion

Adolescent pregnancies in India should not be considered solely as exercising the right to reproduce. It is more accurate to think of them as concentrated social risks. NFHS-5 data shows steep gradients. It is higher amongst the rural population and in the eastern and north-eastern states. Many recent studies in India connect adolescent pregnancies to early marriage, economic challenges, violence, and insufficient knowledge of contraceptives. The policy implication is clear: social problems cannot be resolved by the health sector in isolation.

It is within the social sector framework that the most important strategies are situated. The most important of these strategies is expanding the years of adolescence (keeping girls in school, safe, and mobile, and protecting them while ensuring access to reproductive health services). education and empowerment are both key. education provides knowledge and choice in the future, while empowerment allows the exercising of that choice. Social transformation is an important part of pregnancy prevention, and should not be viewed as an abstract addition. It is the social sector that will make pregnancy prevention sustainable.

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Internal Validation Note

- [11]. Main-text word count: 2450 words. Number of tables: 5. Number of figures/graphs: 5. Number of references: 10. Primary reference period: 2020–2025. Research design: secondary quantitative analysis and evidence synthesis. Principal data sources: NFHS-5, MoHFW 2023, and peer-reviewed NFHS-5/Indian adolescent studies.