

Review Article

Sociodemographic determinants of adolescent pregnancy among adolescents aged 15-19 years in Haryana: Insights from NFHS-5 (2019-21)

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A B S T R A C T

Introduction: Early childbearing is associated with higher risks of maternal complications, adverse neonatal outcomes, and consequences for social and economic well-being. Although national surveys provide descriptive data, very few studies have analysed the determinants of adolescent pregnancy at the state level. Haryana offers a unique context, as rapid urbanisation exists alongside strong socio-cultural traditions. The present study was undertaken to assess the sociodemographic determinants of adolescent pregnancy among women aged 15-19 years in Haryana using data from NFHS-5.

Methods: Cross-sectional secondary data analysis based on the National Family Health Survey- 5 (2019-21), which contains information for women aged 15-49 years who were usual residents of Haryana. The outcome variable is adolescent pregnancy, defined as women aged 15-19 years who were either currently pregnant or had at least one live birth. Analysis was done using the latest freely available version of SPSS. All analyses were weighted using the women's sampling weight. Descriptive statistics were used to estimate prevalence, and multivariable binary logistic regression was applied to identify independent associations.

Results: In the NFHS-5 sample of 2,215 adolescent girls aged 15-19 years from Haryana, 85 (3.9%) were either currently pregnant or had ever had a live birth. Adolescent pregnancies were seen only among married adolescents. In the logistic regression model, educational attainment emerged as the only significant determinant of adolescent pregnancy. In the adjusted model, wealth index, religion, and place of residence were not significantly associated with adolescent pregnancy.

Conclusion: Adolescent pregnancy in Haryana was confined to married adolescents and strongly associated with lower educational attainment. Education is protective, and interventions that keep girls in school and delay marriage are critical to reducing adolescent pregnancy in the state.

Keywords: Adolescent Pregnancy, Teenage Pregnancy, High-Risk

Introduction

The health of adolescent girls shapes not only their own future but also the well-being of the next generation. Globally, about 12 million girls aged 15-19 years give birth each year, with most cases occurring in low- and middle-income countries (LMICs)¹. Early childbearing is associated with higher risks of maternal complications, adverse neonatal outcomes, and long-term consequences for social and economic well-being.¹ The World Health Organization (WHO) has consistently emphasised the need to prevent adolescent pregnancy through multi-sectoral interventions that include health services, education, and social protection.¹

In India, adolescent pregnancy remains a significant issue despite recent progress. It significantly contributes to maternal morbidity and mortality and is linked to higher risks of neonatal death, preterm births, and low birth weight.² Adolescents aged 15–19 years contribute approximately 10% of all maternal deaths as per NFHS-5.²

Beyond health effects, adolescent pregnancy often disrupts education and limits opportunities for empowerment, leading to intergenerational cycles of poverty and gender inequality.¹ These outcomes highlight the importance of addressing adolescent fertility as part of both maternal and adolescent health strategies.

National survey data provide evidence of a gradual decline in adolescent childbearing in India. According to the National Family Health Survey (NFHS-5, 2019–21), 6.8% of women aged 15–19 years were already mothers or pregnant at the time of the survey, compared to 7.9% in NFHS-4 (2015–16).² State-level variations are substantial, reflecting socio-cultural and economic differences. In Haryana, the prevalence of adolescent pregnancy was 3.9% in NFHS-5, lower than the national average but still of public health concern.² This was highest in the north India region.

Although national surveys provide descriptive data, very few studies have analysed the determinants of adolescent pregnancy at the state level. Haryana offers a unique context, as rapid urbanisation exists alongside strong socio-cultural traditions. Studies using NFHS-5 data show that early marriage and adolescent motherhood in India are closely linked with lower education, poor economic status, caste, and limited media exposure.³

Qualitative research from rural Haryana highlights that patriarchal norms and social customs strongly influence child marriage and early childbearing.⁴ Examining state-specific determinants is therefore important to guide targeted interventions.

The present study was undertaken to assess the sociodemographic determinants of adolescent pregnancy

among women aged 15–19 years in Haryana using data from NFHS-5 (2019–21). Identifying these factors will help in developing evidence-based strategies to reduce adolescent pregnancy and align with national and global commitments, including the Sustainable Development Goals (SDGs) on health, education, and gender equality.

Methods

Study design

This study was a cross-sectional secondary data analysis based on the National Family Health Survey (NFHS-5, 2019–21).

Data source

NFHS-5 was conducted under the Ministry of Health and Family Welfare, Government of India, with coordination by the International Institute for Population Sciences (IIPS), Mumbai. The survey followed the Demographic and Health Survey (DHS) model. It used a stratified two-stage sampling design in rural areas and a three-stage design in urban areas to obtain a representative sample of households and individuals.² The present analysis used the women's file (Individual Recode, IR dataset), which contains information for all women aged 15–49 years.

Study setting and population

The analysis was restricted to the state of Haryana. From the IR dataset, women aged 15–19 years who were residents of Haryana were included as the study population.

Variables

The outcome variable was adolescent pregnancy, defined in line with NFHS indicator “begun childbearing” as women aged 15-19 years who were either currently pregnant or had at least one live birth.² Independent variables considered in the analysis were educational attainment, type of residence (urban or rural), religion, and wealth index.

Statistical Analysis

Analyses were carried out using the latest freely available version of SPSS v31. All analyses were weighted using the women's sampling weight. Descriptive statistics were used to estimate prevalence, and multivariable binary logistic regression was applied to identify independent associations between education, wealth index, religion, type of residence; and Adolescent pregnancy. Results are presented as adjusted odds ratios (AOR) with 95% confidence intervals (CI), with $p < 0.05$ considered statistically significant.

Ethical considerations

NFHS data are publicly available in anonymised form through The DHS Program upon request. No additional ethical approval was required for this secondary analysis.

Results

Prevalence Of Adolescent Pregnancy

In the NFHS-5 sample of 2,215 adolescent girls aged 15-19 years from Haryana, 85 (3.9%) were either currently pregnant or had ever had a live birth, while 2,130 (96.1%) had not. This estimate was consistent with the prevalence reported in the NFHS-5 Haryana fact sheet.² Adolescent pregnancies were seen only among married adolescents.

Sociodemographic Characteristics And Adolescent Pregnancy

The prevalence of adolescent pregnancy varied across sociodemographic groups (Table 1). It was highest among adolescents with no education (13.2%) or primary education (15.0%), compared to those with secondary (3.3%) or higher education (2.5%). Rural adolescents reported a slightly higher prevalence (4.3%) than urban adolescents (2.9%). Prevalence was higher among adolescents belonging to religions other than Hindus (6.2%) compared with Hindus (3.5%). Across wealth quintiles, the prevalence ranged from 3.4% to 7.9%, with the highest proportion in the poorest group (7.9%).

Table 1: Adolescent pregnancy (%) by sociodemographic characteristics in Haryana (NFHS-5, 2019–21)

Variable	Category	Total (n)	Adolescent pregnancy (weighted %)
Education	No education	53	13.2
	Primary	60	15.0
	Secondary	1943	3.3
	Higher	158	2.5
Wealth index	Poorest	38	7.9
	Poorer	215	3.7
	Middle	415	4.3
	Richer	655	4.1
	Richest	893	3.4
Religion	Hindu	1957	3.5
	Other	258	6.2
Residence	Urban	687	2.9
	Rural	1528	4.3

Multivariable Analysis

In the logistic regression model, educational attainment emerged as the only significant determinant of adolescent pregnancy (Table 2). Compared with adolescents having higher education, those with no education (AOR = 5.36, 95% CI 1.33–21.54, $p=0.018$) and those with primary education (AOR = 7.07, 95% CI 2.01–24.90, $p=0.002$) had significantly higher odds of pregnancy. Adolescents with secondary education did not differ significantly from those with higher education. In the adjusted model, wealth index, religion, and place of residence were not significantly associated with adolescent pregnancy.

Discussion

This study found that the prevalence of adolescent pregnancy among girls aged 15–19 years in Haryana was

3.9%, consistent with the NFHS-5 state estimate. The major determinant was educational attainment. Adolescents with no schooling or only primary education had significantly higher odds of pregnancy compared to those with higher education, while wealth, religion, and place of residence were not significant.

The overall prevalence was lower than the national NFHS-5 figure of 6.8%, reflecting regional differences.¹ Similar to the present findings, national analyses have shown that education is a strong protective factor against adolescent pregnancy.^{2,5} Shri et al.⁵ reported that child marriage, poverty, and low literacy were major correlates across Indian states. A mixed- methods study from Maharashtra by Shukla et al.⁶ highlighted that low education and economic vulnerabilities strongly influenced early pregnancy. Roy et al.⁷ also found, using NFHS-5 data from Northeast India, that

educational attainment remained a consistent predictor. Studies from Assam and other regions similarly show higher adolescent fertility in communities where education levels are low and awareness of reproductive health is limited.⁸

Education delays marriage and first pregnancy, empowers girls with decision-making capacity, and improves access to contraceptive knowledge and services.^{1,2,6} In contrast, girls with limited schooling face early marriage, reduced autonomy, and restricted access to health information, which increases the likelihood of adolescent pregnancy.^{3,8,9} These findings are in line with WHO's global evidence that

adolescent pregnancy disproportionately affects those with less education and fewer opportunities.¹

The results highlight the importance of policies that strengthen girls' education. Initiatives such as Beti Bachao Beti Padhao and the RMNCAH+N strategy can be reinforced to reduce school drop-out and delay marriage. Expanding adolescent-friendly health services and comprehensive sexuality education will further support prevention. Targeted programs in Haryana should focus on retaining girls in secondary and higher education and improving access to reproductive health information and services.

Table 2: Multivariable logistic regression of sociodemographic determinants of adolescent pregnancy (NFHS-5, Haryana, 2019–21)

Variable	Category	AOR (95% CI)	p-value
Education	No education	5.36 (1.33–21.54)	0.018
	Primary	7.07 (2.01–24.90)	0.002
	Secondary	1.22 (0.46–3.24)	0.696
	Higher	Reference	-
Wealth index	Poorest	0.99 (0.25–3.88)	0.985
	Poorer	0.66 (0.28–1.55)	0.341
	Middle	0.92 (0.49–1.75)	0.809
	Richer	1.03 (0.60–1.78)	0.917
Religion	Richest	Reference	-
	Other	0.98 (0.49–1.95)	0.950
Residence	Hindu	Reference	-
	Rural	0.68 (0.40–1.15)	0.152
	Urban	Reference	-

Strengths and limitations

A major strength of this study is the use of NFHS-5, a large, state-representative dataset with standardised measures.² Limitations include the fact that terminated pregnancies not captured. There could be a potential under-reporting of non-marital pregnancies in household surveys.

Conclusion

Adolescent pregnancy in Haryana was confined to married adolescents and strongly associated with lower educational attainment. Education is protective, and interventions that keep girls in school and delay marriage are critical to reducing adolescent pregnancy in the state.

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