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Enhancing Maternal Care through Spousal Involvement during Perinatal Period in India

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Research Article

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Abstract

Introduction: The involvement of husbands in maternal healthcare is crucial during the perinatal period, encompassing pregnancy, childbirth, and the postpartum phase. Their participation can enhance the uptake of interventions to prevent maternal and infant morbidity and mortality. This study aims to evaluate any changes in spousal involvement during perinatal services over time, utilizing data from the National Family Health Surveys (NFHS-3, NFHS-4, and NFHS-5). It also examines factors influencing male involvement in healthcare utilization among women.

Methodology: The data was analysed on male involvement and health service utilization from NFHS-5, a nationally representative survey that provides comprehensive health and socio-demographic data across India, collected between 2019 and 2021. Determinants of male involvement were assessed using multivariate logistic regression, with results presented as adjusted odds ratios.

Results: The study found that 79% of husbands accompanied their wives during antenatal care (ANC) visits, and 83% supported institutional deliveries for their youngest child. Between NFHS-3 and NFHS-5, the proportion of women receiving adequate ANC increased significantly, rising from 77% to around 90% in NFHS-4 and reaching 96% by 2019-21. Similarly, the percentage of institutional deliveries saw remarkable growth, jumping from 42.8% in NFHS-3 to 91.6% in NFHS-5.

Conclusion: To improve maternal health outcomes, it is essential to implement structural changes that promote and prioritize men's involvement in perinatal care. The concept of fatherhood can begin when a couple plans for a child. This involvement can be nurtured through inclusive decision-making, targeted interventions, and supportive policy initiatives.

Keywords: Male Involvement; Maternal Heath; Perinatal Period; NFHS-5; NFHS-4; NFHS-3

Significance

The study seeks to evaluate the importance of male involvement in maternal health care. While numerous research articles emphasize the importance of male participation, there is a scarcity of studies conducted specifically in India, and none have explored male involvement throughout the entire perinatal period. Additionally, this study leverages a large sample size by utilizing national survey data, making its findings generalizable across the country.

Introduction

The perinatal period, encompassing pregnancy, childbirth, and the immediate postpartum phase, is crucial for maternal and infant health. In India, maternal health outcomes have improved significantly over the past two decades; however, estimates for 2020 reveal that nearly 800 women die each day worldwide due to complications related to pregnancy and childbirth. Approximately 95% of these deaths occur in low- and middle-income countries, with Southern Asia accounting for 16% of the global total [1]. In India, the current maternal mortality ratio (MMR) stands at 97 deaths per 100,000 live births [2]. The tragedy is that most of these maternal deaths are largely preventable with timely, family-centered, and adequate healthcare interventions.

The government of India (GoI) has implemented multiple steps to increase awareness and improve service uptake among women of reproductive age across the country. In 2005, GoI launched the National Health Mission, introducing key schemes such as the Janani Suraksha Yojana (JSY) and the Janani Shishu Suraksha Karyakram (JSSK) to reduce maternal mortality by promoting institutional deliveries and providing financial and healthcare support to pregnant women [3-6]. Further strengthening maternal healthcare, the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) was introduced in 2016, offering guaranteed, high-quality antenatal care free of charge [7]. In 2017, the Labour Room Quality Improvement Initiative (LaQshya) was launched to enhance the quality of care during childbirth [8]. Collectively, these initiatives aim to reduce the Maternal Mortality Ratio (MMR) and ensure safer deliveries.

Traditionally, maternity care has been viewed primarily as a women's issue, often neglecting the crucial role that spousal support plays in promoting healthier pregnancies and deliveries. The importance of husbands' involvement in maternal and newborn health was emphasized at the International Conference on Population and Development (ICPD) and the 4th World Conference on Women in Cairo [9]. This perspective was further reinforced by the WHO, which recommends engaging men during pregnancy, childbirth, and the postpartum period as a key intervention to enhance maternal and newborn health outcomes [10].

Globally, it is now widely recognized that active male participation in maternal healthcare services leads to better outcomes for both mothers and children. Despite substantial efforts by healthcare providers to raise awareness among husbands and a significant increase in healthcare utilization, these efforts remain insufficient to meet the Sustainable Development Goal (SDG) targets. Therefore, it is crucial to address disparities in husbands' participation and ensure the availability of healthcare facilities across the country.

Research indicates that spousal involvement not only enhances emotional support but also encourages informed decision-making regarding healthcare choices. When husbands are engaged in maternal health, there is a higher uptake of interventions aimed at preventing maternal and infant morbidity and mortality [11]. Additionally, their participation can lead to an increased likelihood of contraceptive use, which promotes family planning and spacing of pregnancies [12]. Their involvement supports good nutrition for the mother, reduces her workload during pregnancy, assists in birth preparedness, and provides essential emotional support throughout the perinatal period [13]. The integration of the concept of fatherhood begins the moment a couple plans for a child, enhancing their involvement and supportive care in reproductive health programs.

However, in patriarchal societies like India, involving men in maternal health care presents significant challenges. Traditional gender norms, lack of financial control, limited knowledge, transportation difficulties, unsafe conditions, and family restrictions often prevent men from accessing prenatal, natal, and postnatal health services. Additionally, government policies frequently overlook the importance of husband participation in maternal health services [14].

Therefore, this study aims to evaluate any changes in spousal involvement during perinatal services over time, utilizing data from the National Family Health Surveys (NFHS-3, NFHS-4, and NFHS-5 [15-17]. It also examines the factors influencing male involvement in healthcare utilization among women. By understanding these trends, targeted interventions can be developed to engage husbands and encourage their spouses to utilize maternal care services during the antenatal, delivery, and postnatal periods.

Methodology

Study Design and Data Source

For the first objective, a comparative analysis was conducted using data from NFHS-3 (2005-06), NFHS-4 (2015-16), and NFHS-5 (2019-21) to evaluate changes in spousal involvement in perinatal services over time. For the second objective, a cross-sectional analysis of data from NFHS-5, collected between 2019 and 2021, was performed. Prior to conducting the analysis, a proposal was submitted to the Demographic and Health Survey (DHS) for approval, and we were granted authorization to use the data.

The NFHS is a nationally representative survey that provides extensive data on health and socio-demographic indicators across India, focusing on information collected from respondents to the Men's Questionnaire.

Outcome Variable

The key outcome variables were "utilization of antenatal care (ANC)" and "institutional delivery." In NFHS-4, men whose wives had given birth in the last three years were asked whether they were present during any antenatal check-ups. A variable was created to indicate the husband's presence or absence during these check-ups. If no check-up occurred, the spouse were asked to provide the main reason for this. Additionally, detailed questions were posed regarding the husbands' knowledge about delivery and related care.

Sample Size

The study used a two-stage sampling design to select villages in rural areas and census enumeration blocks in urban areas. Data collection, conducted between June 2019 and April 2021, utilised Computer-Assisted Personal Interviews (CAPI), ensuring adherence to a predefined schedule while maintaining strict confidentiality of respondents' information. In the first stage, villages and census enumeration blocks were selected as primary sampling units (PSUs) from rural and urban areas, respectively, using probability proportional to size (PPS) based on the 2011 census. A total of 30,456 PSUs were selected nationwide. In the second stage, a complete mapping and household listing of the selected PSUs was conducted, from which 22 households were randomly selected from each community. The survey was carried out across approximately 6.37 lakh households in 707 districts across 28 states and 8 union territories in India, collecting data from 7,24,115 women and 1,01,839 men [15].

Data Analysis

The analysis was performed using SPSS version 23. NFHS sampling weights were applied to account for varying probabilities of participant selection, ensuring the results were accurate and representative. Descriptive statistics, including frequencies and percentages, were used to describe the demographic characteristics of the male participants. The chi-square test was used to explore associations between sociodemographic factors and the outcome variables. Bivariate analyses were first conducted to examine the relationship between the husbands' social and demographic characteristics and their involvement in skilled ANC and delivery care. Subsequently, multivariate logistic regression models were used to assess the association between indicators of women's household positions and their use of ANC and skilled maternal health services.

Ethical Considerations

As this study involved secondary analysis of publicly available NFHS data, formal ethical approval was not required. However, all data were analyzed in a manner that ensured the confidentiality and privacy of the respondents were protected.

Result

Between 2005-06 (NFHS-3) and 2019-21 (NFHS-5), the percentage of women receiving adequate antenatal care (ANC) rose from 77% to approximately 90% in 2015-16, and continued to improve, reaching 96% in 2019-21. Over the same period, institutional deliveries saw a substantial increase, climbing from 42.8% in 2005-06 to 91.6% in 2019-21. Additionally, husbands' awareness of pregnancy complications, family planning, delivery locations, and maternal care have significantly improved during this time (Table 1).

Variables		NFHS-3	NFHS-4	NFHS-5
ANC visit		77	90	96
Institutional delivery		42.8	83.4	91.6
Percentage who were told by a health provider about specific signs of pregnancy complication	Vaginal bleeding	21.3	37.1	51.4
	Convulsions	21.7	38.6	53.5
	Prolonged labour	25	45.2	60.8
	pregnancy complication	37.1	47.1	63.9
Percentage of fathers who said that at some time during the pregnancy, a health provider or worker spoke to them about	The importance of delivering in a health facility	43.3	64	72.5
	The importance of proper nutrition for the mother during pregnancy	49.9	70.3	80.4
Percentage of fathers who said that during the pregnancy, someone explained to them the importance	Family planning or delaying his next child	40.4	58.3	64.5
	Breastfeeding the baby immediately after birth	35.6	43.4	60.4
	Keeping the baby warm immediately after birth	32.6	39.4	57.6

Table 1: Prevalence of male involvement in perinatal care from 2005-2020.

ANC Visits

Among 17,292 Antenatal visits reported by the male respondents, 13,671(79.1%) women were accompanied by their husbands during the antenatal visit for the most recent child. For women, who did not attend ANC visits, the two main reasons were the cost of visits (25.1%) and husband thinks ANC visits were not necessary(21.3%) (Table 2).

Reasons for not attending ANC visit	N (%)
He did not think it was necessary/did not allow	591(21.3)
The family did not think it was necessary/did not allow	536(19.3)
The child's mother did not want a check-up	311(11.2)
Has had children before	69(2.5)
Costs too much	695(25.1)
Too far/no transportation	132(4.8)
Non availability of female health worker	70(2.5)
Other	172(6.2)
Don't Know	197(7.1)
Total	2773 (100)

Table 2: Reasons reported by men for not attending ANC visits (n=17,292).

Background Variable		% Husband Present	P value of Chi-Square	Unadjusted Odds Ratio	P value	Adjusted Odds Ratio	P value
Age	15-19	0.30%	<0.001*	2.477(1.005-6.107)	0.049*	2.237(0.890-5.625)	0.087
	20-24	9.60%		1.359(0.875-2.110)	0.172	1.244(0.787-1.964)	0.35
	25-29	32.00%		1.821(1.182-2.805)	0.007*	1.544(0.986-2.417)	0.058
	30-34	32.10%		1.962(1.273-3.023)	0.002*	1.574(1.005-2.465)	0.048*
	35-39	17.60%		1.994(1.289-3.086)	0.002*	1.674(1.064-2.633)	0.026*
	40-44	6.10%		1.831(1.165-2.875)	0.009*	1.482(0.927-2.369)	0.1
	45-49	1.90%		1.703(1.033-2.809)	0.037*	1.780(1.054-3.006)	0.031*
	50-54	0.50%		Ref		Ref	
Education Level	No education	11.10%	<0.001*	0.326(0.282-0.367)	<0.001*	0.477(0.402-0.565)	<0.001*
	Primary	12.20%		0.333(0.289-0.383)	<0.001*	0.474(0.403-0.557)	<0.001*
	Secondary	57.50%		0.558(0.494-0.629)	<0.001*	0.665(0.583-0.759)	<0.001*
	Higher	19.20%		Ref		Ref	
Type of place of residence	Urban	37.60%	<0.001*	1.590(1.467-1.724)	<0.001*	1.170(1.061-1.290)	0.002*
	Rural	62.40%		Ref		Ref	
Wealth Index	Poorest	14.20%	<0.001*	0.345(0.304-0.391)	<0.001*	0.557(0.472-0.657)	<0.001*
	Poorer	18.40%		0.432(0.382-0.488)	<0.001*	0.638(0.548-0.743)	<0.001*
	Middle	21.70%		0.536(0.474-0.606)	<0.001*	0.724(0.628-0,835)	<0.001*
	Richer	22.50%		0.802(0.703-0.914)	<0.001*	0.995(0.864-1.146)	0.944
	Richest	23.20%		Ref		Ref	

Table 3: Husband presence during ANC visits by background variables and results for tests of association. (n=13,671).

Table 3 provides data on the prevalence of husbands' presence during women's antenatal care (ANC) visits, along with corresponding chi-square values. The highest male participation was found among those aged 25-34 years (64.1%), men with secondary education (57.5%), and those residing in rural areas (62.4%). Additionally, husband participation increased with higher economic status. All sociodemographic factors, including age, education, place of residence, and wealth index, were significantly associated with husbands' involvement in ANC visits ($p \leq 0.05$).

Table 3 also presents results from both univariate and multivariate logistic regression analyses. All factors from the univariate analysis were included in the multivariate regression as they had p-values below 0.2. Husbands aged 45-49 years were 78% more likely to be involved in ANC visits compared to those aged 50-54 years [aOR: 1.780 (1.054-3.006)]. In terms of education, husbands with higher education were 52.6% more likely to be involved than those with only primary education [aOR: 0.474 (0.403-0.557)]. Furthermore, urban husbands had 17% higher involvement compared to their rural counterparts [aOR: 1.170 (1.061-1.290)]. Husbands from the richest wealth quintile were 44.3% more likely to be present during ANC visits compared to those in the poorest quintile [aOR: 0.557 (0.472-0.657)].

Institutional Delivery

Out of 20,266 deliveries reported by the male respondents, 16,844(83.1%) were delivered at health facility/hospital. Among women who did not deliver at a health facility, still, 7.3% reported that husbands did not think it was necessary to deliver at a health facility (Table 4).

Reasons for not delivering at Health Facility	N(%)
Costs too much	654(19.1)
Facility not open	300(8.8)
Too far/no transportation	548(16.0)
Don't trust facility/poor quality service	162(4.7)
No female provider	83(2.4)
Not the first child	164(4.8)
The child's mother did not think it was necessary	384(11.2)
He did not think it necessary/did not allow	251(7.3)
The family did not think it necessary/did not allow	459(13.4)
Other	313(9.1)
Total	3424(100)

Table 4: Reasons reported by male members for not choosing health facility for delivery (n=3424).

Background Variable		% Hospital delivery	P value of Chi-Square	Unadjusted Odds Ratio	P value	Adjusted Odds Ratio	P value
Age	15-19	0.30%	<0.001*	4.448(1.815-10.900)	0.001*	3.910(1.503-10.174)	0.005*
	20-24	10.10%		2.910(2.065-4.101)	<0.001*	2.490(01.706-3.634)	<0.001*
	25-29	31.80%		3.152(2.266-4.384)	<0.001*	2.300(1.599-3.311)	<0.001*
	30-34	31.60%		3.368(2.420-4.687)	<0.001*	2.282(1.585-3.285)	<0.001*
	35-39	17.50%		2.777(1.987-3.876)	<0.001*	2.104(1.455-3.014)	<0.001*
	40-44	6.20%		2.312(1.629-3.281)	<0.001*	1.912(1.301-2.810)	0.001*
	45-49	2.00%		1.322(0.908-1.926)	0.145	1.355(0.894-2.053)	0.152
	50-54	0.60%		Ref		Ref	

Education Level	No education	12.30%	<0.001*	0.118(0.099-0.140)	<0.001*	0.395(0.324-0.481)	<0.001*
	Primary	13.50%		0.177(0.148-0.211)	<0.001*	0.476(0.390-0.581)	<0.001*
	Secondary	56.40%		0.348(0.296-0.411)	<0.001*	0.580(0.485-0.693)	<0.001*
	Higher	17.70%		Ref		Ref	
Type of place of residence	Urban	35.90%	<0.001*	2.207(2.219-2.413)	<0.001*	1.084(0.971-1.210)	0.15
	Rural	64.10%		Ref		Ref	
Wealth Index	Poorest	15.90%	<0.001*	0.102(0.087-0.119)	<0.001*	0.175(0.144-0.214)	<0.001*
	Poorer	19.60%		0.217(0.185-0.255)	<0.001*	0.317(0.262-0.383)	<0.001*
	Middle	21.80%		0.368(0.311-0.434)	<0.001*	0.483(0.400-0.583)	<0.001*
	Richer	21.30%		0.649(0.541-0.779)	<0.001*	0.783(0.645-0.950)	0.013*
	Richest	21.40%		Ref		Ref	

Table 5: Hospital delivery by husband's background variables and results for tests of association (n=20,266).

Table 5 highlights the prevalence of institutional deliveries among women, categorized by their husbands' sociodemographic factors, along with the respective chi-square values. Institutional delivery rates were highest among husbands aged 25-34 years (63.4%), those with a secondary education (56.4%), and those residing in rural areas (64.1%). Moreover, the likelihood of institutional delivery increased with rising economic status. All sociodemographic factors, including age, education, residence, and wealth index, were significantly linked to husbands' involvement in institutional deliveries ($p \leq 0.05$). The table further presents both univariate and multivariate logistic regression analyses. All factors from the univariate analysis were carried forward into the multivariate model since their p-values were below 0.2.

Husbands aged 20-24 years were nearly 2.5 times more likely to have institutional deliveries compared to those aged 50-54 years [aOR: 2.490 (1.706-3.634)]. Regarding education, institutional deliveries were 60.5% more frequent among men with higher education compared to those with no education [aOR: 0.395 (0.324-0.481)]. On the other hand, husbands in the wealthiest quintile had 82.5% greater odds of institutional deliveries compared to those in the poorest quintile [aOR: 0.175 (0.144-0.214)].

Discussion

This study reveals that between NFHS-3 and NFHS-5, the proportion of women receiving adequate ANC increased significantly, rising from 77% to around 90% in NFHS-4, and ultimately reaching 96% by 2019-21. Similarly, the percentage of institutional deliveries saw remarkable growth, jumping from 42.8% in NFHS-3 to 91.6% in NFHS-5.

Analysis found that 79% of husbands accompanied their wives during ANC Visits. The husbands' presence during ANC visits was significantly higher among those aged 45-49, living in urban places, having higher education, and belonging to the richest wealth quantile. The study also reports that 83% of institutional deliveries of the youngest child. The institutional delivery were significantly higher among women whose husbands were aged 20-24, had higher education, and were in the richest wealth quantile. There was no significant association between Institutional delivery and the husband's place of residence. Based on the findings, similar sociodemographic factors influence both the outcome variables under the study that is ANC visits and institutional delivery. Research indicates that various factors influence the use of these services among minority communities, including limited knowledge of sexual and reproductive health, lower educational attainment, and the impact of cultural and religious practices [18].

Higher education and urban residence were positively associated with increased utilization of maternal health services. This can be attributed to the fact that individuals with higher education tend to have a better understanding of health complications, and many educated individuals reside in urban areas [19]. Additionally, utilization was higher among those in the richest wealth quantile, likely due to better affordability. In our study, the primary reasons for low utilization, as reported by husbands, were the high costs of healthcare and their perception that maternal care is unimportant.

In low- and middle-income countries (LMICs) such as India, husbands often serve as the key decision-makers. The majority of costs associated with essential healthcare services, transportation to medical facilities, purchasing clean clothes for the mother and baby, and arranging skilled care before and after childbirth largely depend on men. Therefore, it is crucial to involve husbands in maternal care [20-22].

Strengths and Limitation

This study utilizes data from the national survey; therefore, the results can be generalized regarding male involvement in healthcare utilization. However, it excluded women who had no antenatal care visits, resulting in a lack of data on spousal involvement for this group. It is likely that these women, who did not engage with the healthcare system during pregnancy, often have lower education levels and belong to the most vulnerable socio-economic groups. Consequently, the overall findings of this study may not apply to this sub-population.

Conclusion

In India, maternal health outcomes have significantly improved over the past two decades, alongside a notable increase in spousal involvement. The study highlights that spousal involvement during ANC and institutional deliveries was significantly higher among women whose husbands had favorable factors such as economic status, education, age, and place of residence, all of which emerged as significant determinants. If enhanced maternal health outcomes are to be furthered, then it is essential to implement structural changes that promote and prioritize men's involvement in perinatal care. The concept of fatherhood begins from the moment a couple plans for a child and so must the responsibilities of the father. This involvement can be nurtured through inclusive decision-making, targeted interventions, and supportive policy initiatives.

Declaration

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Conflicts of interest/Competing interests: None

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Consent to participate: NA

Consent for publication (consent statement regarding publishing an individual's data or image): NA

Availability of data and material (data transparency): NA
Code availability (software application or custom code)

Authors' contributions: MM, AM, and SB conceptualized the study and were involved in manuscript writing. AM and MM were involved in data analysis and literature search.

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