

The maternal health situation in Odisha and Rajasthan: A comparative analysis of state reports from National Family Health Survey (NFHS)-4 and 5

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree

of Master of Business Administration (MBA)

in

Hospital and Health Management

by

S. Soumya Priya

Under the Supervision and Guidance of

Dr Alok Mathur

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “The maternal health situation in Odisha and Rajasthan: A comparative analysis of state reports from National Family Health Survey (NFHS)-4 and 5” is the bonafide record of my original researchwork. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)
Soumya Priya
Date



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22nd May 2023
Hyderabad

To

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Flat no. 304, SV Arcade, road no.1, Doctors colony,
saroornagar, Hyderabad, Telangana - 500 035.

Dear **Ms. Somayajula**

Internship Experience Letter

This letter also certifies that **Ms. Soumya Priya Somayajula** is doing internship with Orbees Business Solutions Pvt Ltd from **21st February 2023** to **till date** and her role is Intern – Associate Consultant

We wish her all the best for her future endeavors.

For **Orbees Business Solutions Pvt. Ltd**

Rakesh Valluru
Sr. Manager - Operations



CERTIFICATE

This is to certify that S. Soumya Priya in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her/his internship at Orbees Medical during February 20- May 19, 2023.

Place:
Date:

Preceptor/Head of the Organization
Name of the organization

CERTIFICATE

This is to certify that dissertation titled “ The maternal health situation in Odisha and Rajasthan: A comparative analysis of state reports from National Family Health Survey (NFHS)-4 and 5” is a record of the research work undertaken by S. Soumya Priya in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

Alok Mathur
Faculty Guide
IIHMR University
Date

Dr. (Col) Mahender Kumar
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IIHMR University
Date

ABSTRACT

Submitted by: S. Soumya Priya
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Submitted to: Dr Alok Mathur

Title: The maternal health situation in Odisha and Rajasthan: A comparative analysis of state reports from National Family Health Survey (NFHS)-4 and 5

Background

Women are strong pillars of any vibrant society. Sustained development of the country can thus be achieved only if holistic care is taken of its women and children. Massive and strategic investments have been made under the NHM for the improvement of maternal health. Maternal health is an important aspect of the development of any country in terms of increasing equity and reducing poverty. Mothers' survival and well-being are central to solving broader, economic, social, and developmental challenges. While lowering maternal mortality is an important objective, minimizing maternal injury and impairment is crucial to improve general health and well-being. The sheer fact that women make it through pregnancy and delivery shouldn't be used as the primary indicator of effective maternal healthcare. This study aims to determine how the maternal health situation changed in Odisha and Rajasthan between NFHS-4 and NFHS-5.

Methodology:

A descriptive analysis of maternal health indicators obtained from the National Health Family Survey 4 & 5 Datasheet was used in the study. Data from maternal health indicators from both states' NFHS 4 and NFHS 5 fact sheets were compared and interpreted based on data improvement and downfall. The duration of the study is for 70 days from March 1st to May 10th. Major indicators such as Maternal Mortality Ratio (MMR), Antenatal care coverage, Skilled birth attendance, and Postnatal care utilization were analyzed.

Data were extracted, compiled, and compared using the data analysis tool MS Excel between the two surveys to identify any significant changes in the maternal health situation. The analysis will also explore the contextual factors and determinants associated with the performance of each indicator.

Results

In Odisha and Rajasthan, the percentage of women who had at least four antenatal care visits increased by 26 percent and 44 percent, respectively. In Odisha, however, the rate of pregnant women using 180 IFA tablets/syrup jumped sixfold, while the percentage of anaemic pregnant women increased by 30 percent. MCP cards are successfully issued to nearly all pregnant women in both states. According to NFHS 5, the percentage of institutional deliveries climbed by 8% in Odisha and 13 percent in Rajasthan, resulting in roughly 95% in both states. Furthermore, the OOPE per delivery in Rajasthan public health institutions has been cut in half, whereas the OOPE in Odisha remains high despite the adoption of JSY. Despite a 13 percent increase in the number of mothers obtaining PNC in Rajasthan, approximately 40 percent of them lack access to treatment.

Conclusion

When compared to NFHS 4 and 5, Rajasthan and Odisha both performed well in terms of maternal health. However, there is still much opportunity for development in several areas. Odisha outperformed Rajasthan in terms of pregnant women obtaining at least four ANC checks, although anaemia rates were higher in Odisha. Despite doing better in terms of the proportion of pregnant women who consume IFA, Odisha scored poorly because of the rise in anaemic pregnant women from NFHS 4 to 5.

It envisions a higher share of institutional deliveries by skilled workers and a reduced number of house deliveries. There is a significant rise in cesarean deliveries in both states but Odisha outnumbered Rajasthan resulting in an increase in OOPE.

Some important strategies that play a crucial role in improving maternal health services are health system strengthening, stronger political will, and community mobilization.

Keywords:

Maternal health, ANC, NFHS, OOPE, Postnatal care, Empowered Action Groups

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to Dr. P.R. Sodani, President, IIHMR University, Jaipur for providing me with a platform to gain enough knowledge and skills in different aspects of health and hospital management. I am grateful to Dr. (Col) Mahender Kumar School Dean, IIHMR University, Jaipur.

My sincere thanks to my Faculty Guide, Alok Mathur, Associate Professor, IIHMR University, Jaipur, for his support throughout the project. I will strive to use the gained skills and knowledge in the best possible way throughout the journey. Without his guidance and persistent help this dissertation would not have been possible. Furthermore, I would like to thank my professors at IIHMR University for providing me with invaluable advice during my studies

Lastly, I would appreciate all the researchers, scholars & authors whose work I have referred to and cited in this report.

Sincerely,

S. Soumya Priya

(MBA-HM, 1411)

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ABBREVIATIONS

NFHS	National Family Health Survey
AMS	Academy of Management Studies
IIHMR	Indian Institute of Health Management Research
WHO	World Health Organization
MMR	Maternal mortality Ratio
IMR	Infant Mortality Ratio
SDG	Sustainable Development Goals
RGI	Registrar General India
SRS	Sample Registration System
EAG	Empowered Action Group
JSY	Janani Suraksha Yojana
JSSK	Janani Shishu Suraksha Karyakaram
MOHFW	Ministry of Health and Family Welfare, Government of India
ANC	Antenatal Care
PNC	Postnatal Care
LPS	Low Performing State
HPS	High Performing State
IFA	Iron Folic Acid
DLHS	District-Level Household and Facility Survey
AHS	Annual Health Survey
PHC	Primary health care
SBA	Skilled Birth Attendant
MCP	The Mother and Child Protection
OOPE	Out Of Pocket Expenditure
TT	Tetanus Toxoid
AWC	Anganwadi Centre
AWW	Anganwadi workers
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
LHV	Lady Health Visitor
CS	Cesarean Section

CHAPTER 1: INTRODUCTION

Women are strong pillars of any vibrant society. Sustained development of the country can thus be achieved only if comprehensive care is taken for the women and children. Under the NHM, significant and well-planned investments have been made to improve maternal health. Women's health and maternal health are critical aspects of the development of any country in terms of increasing equity and minimizing poverty. Mothers' survival and well-being are fundamental to solving wider aspects of social, economic, and developmental challenges.

Maternal health is known as women's strength during the antepartum, intrapartum, and postpartum periods. It is essential to provide an optimal environment for health and growth for both the mom and the newborn. Despite recent major advancements, many maternal deaths are still occurring globally. A considerable number, 287,000, of women are predicted to die in 2020 during, following, or as a result of maternity and delivery..

Maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

The results of the during-delivery and after-delivery phases are significantly influenced by the prior-to-delivery stage. The pregnancy cycle is divided into 5 main phases: (1) medical care; (2) prenatal; (3) perinatal; (4) postnatal; and (5) between conception. In industrialized countries, becoming parents. is, for the most part, a fulfilling and enjoyable relationship. The situation is different in many undeveloped countries, where having children is related to illness, poor health, and even fatality.

While lowering maternal mortality is an important objective, it is also crucial to minimize maternal injury and impairment to improve general health and well-being. The sheer fact that women make it through pregnancy and delivery shouldn't be used as the primary indicator of effective maternal healthcare. It is important to address the underlying causes of health disparities, particularly regarding sex and reproduction health, gender equality, and reproductive rights. Equal access to professional and competent maternity care is essential if we are to guarantee positive health outcomes for all women.

One of the most significant indices of maternal mortality is the MMR which is calculated as

the number of maternal deaths per 100,000 live births within a specific time frame. The UN's SDG 3.1 aims to bring down maternal deaths worldwide to under 70 per 100,000 live births. All countries are expected to achieve MMR below 70 per 100,000 live births by 2030, with no country having MMRs above 140 per 100,000 live births, according to the global SDG targets. NHM has introduced several maternal health initiatives, including “Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), and Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)”. The study can measure the impact of these programs by evaluating changes in maternal health indicators between NFHS 4 and NFHS 5.

The risk factors contributing to MMR include existing or pre-pregnancy medical history (cardiovascular disease, obesity, asthma, or a compromised immune system), age, nutritional status, delivery technique, late referral, lack of proper spacing, preeclampsia, gestational diabetes, ANC examination, occupational status and lifestyle changes such as smoking.

The main causes of maternal harm and death include excessive bleeding, infections, hypertension, unsafe abortions, and difficult labor. Indirect causes like anaemia, malaria, and heart disease have an impact on maternal death rates as well. The majority of maternal deaths can be prevented with immediate and proficient healthcare management.

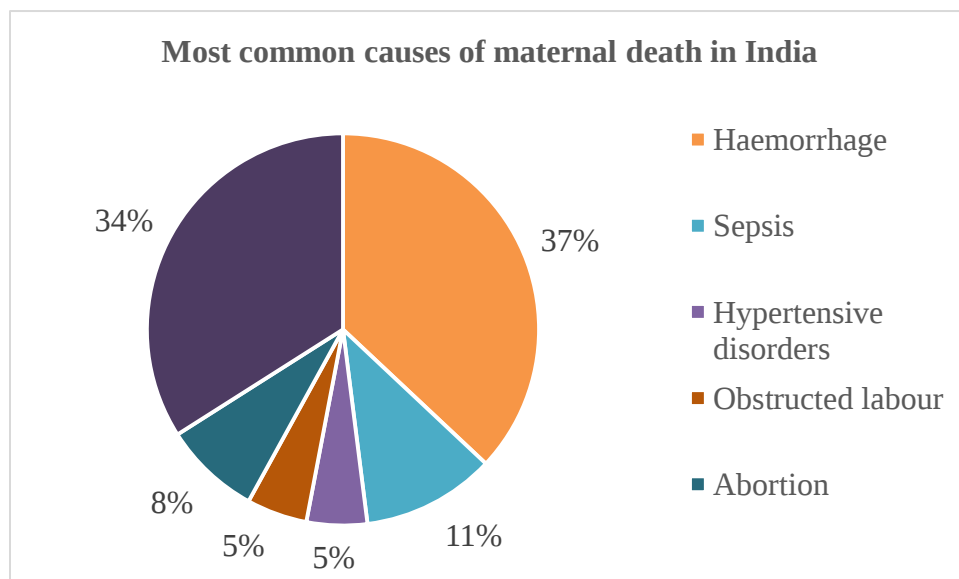


Figure 1: Causes of maternal deaths in India.

Source: RGI SRS

States have been separated into three groups to better comprehend the nation's maternal mortality situation and chart the changes that have occurred: "Empowered Action Group" (EAG) States, which include Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Odisha, Rajasthan, Uttar Pradesh & Uttarakhand, and Assam; "Southern" States, which include Andhra Pradesh, Telangana, Karnataka, Kerala, and Tamil Nadu.

The graph below illustrates the decline in the Maternal Mortality Ratio in India over the past few years, from 103 in 2017–19 to 97 in 2018–20, which is promising.

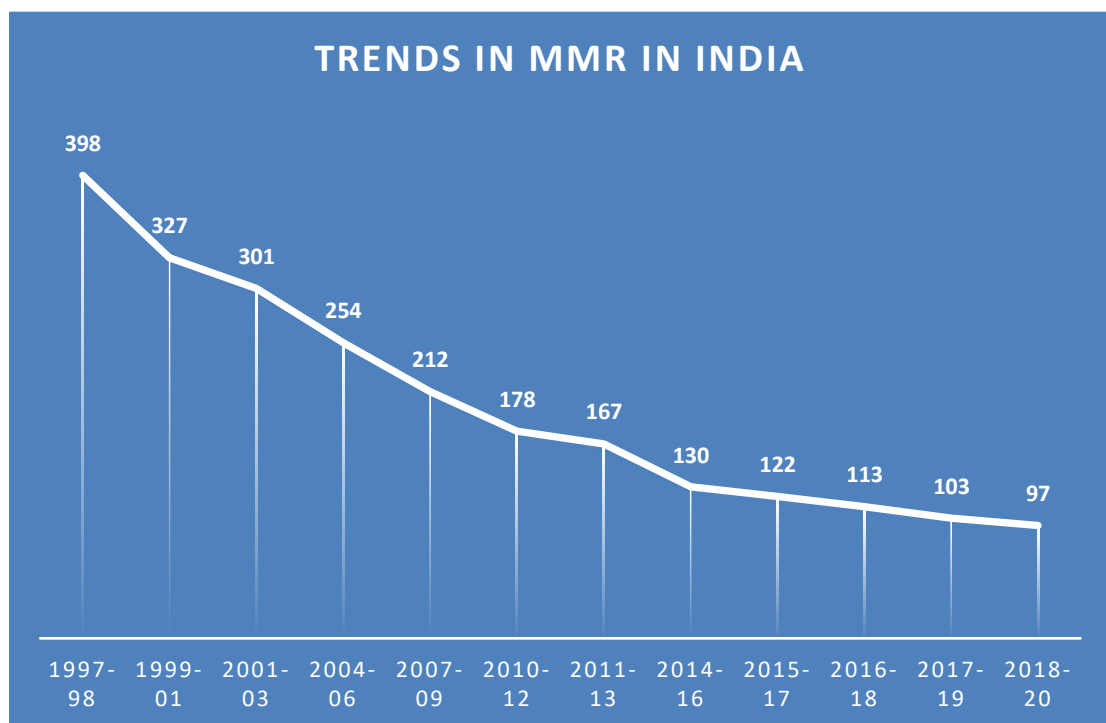


Figure 2 Trends in MMR in India

Source: RGI SRS.

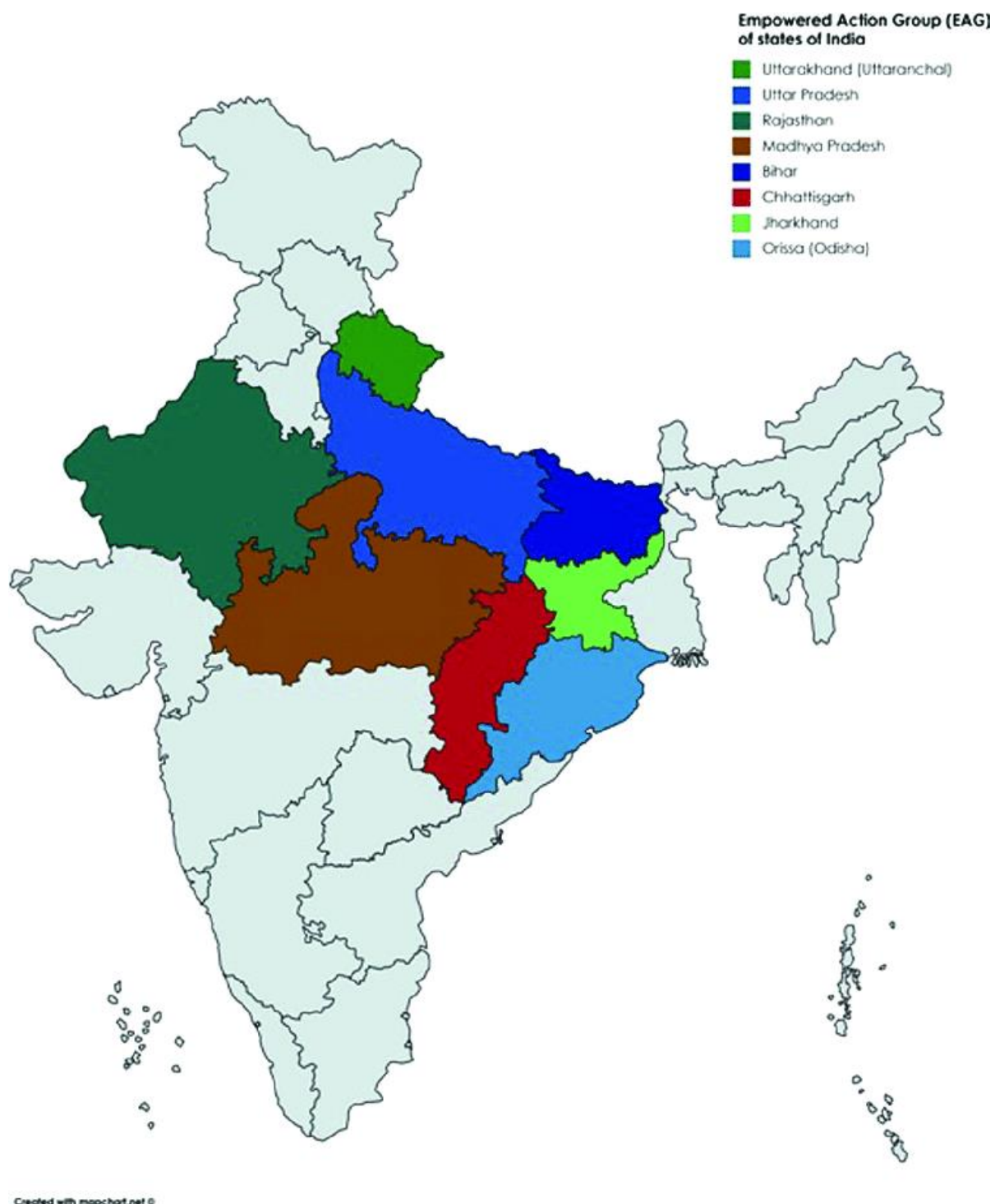


Figure 3: Map showing EAG states of India.

Source:

https://www.researchgate.net/publication/347126441_Maternal_health_situation_in_Empowered_Action_Group_of_states_of_India_A_comparative_analysis_of_state_reports_from_National_Family_Health_Survey_NFHS-3_and_4

In 1990, India had an oddly high MMR, with 556 women demise during childbirth per hundred thousand live births.

Due to complications during pregnancy and childbirth, more than 1.38 lakh women die away annually. The global MMR was 385 at the time, significantly lower. However, India has seen an accelerated pace of MMR reduction. MMR in the country has fallen to 167 (2011-13) compared to a global MMR of 216 (2015).

At the national level, institutional births have increased significantly from 79% to 89%. Along with a rise in institutional births, there has been a significant increase in C-section deliveries in several states and territories, particularly in private health institutions.

Teenagers (15-19 years) account for roughly 16% of the nation's overall fertility, whereas women aged 15 to 25 account for 45% of all maternal deaths, per the national surveys.

Teenage girls have a huge unmet demand for contraception, which puts them at risk for STIs, HIV, and unintended pregnancy - approximately 27% among married teenagers (15-19 years) - and low condom use in general. Unsafe abortions and infections contribute to maternal morbidity and mortality.

Country/ State	MMR (2018-20)
India	97
Odisha	119
Rajasthan	113

AIMS AND OBJECTIVES

Aim:

To determine how has the maternal health situation changed in Odisha and Rajasthan between NFHS-4 and NFHS-5

Objectives:

1. To examine and compare the maternal health indicators in Odisha and Rajasthan based on the NFHS-4 and NFHS-5 state reports.
2. To determine if the performance of maternal health indicators in these states has

improved or declined over time.

3. To highlight areas for enhancement in the implementation of maternal health-related activities in both states based on the findings.

CHAPTER 2: RATIONALE OF THE STUDY:

Maternal health continues to be an aspect of concern for public health professionals and policymakers in India. NRHM was established with the intention of delivering fair, accessible, and high-quality health care to rural people, particularly those from low-income families. The NRHM Empowered Action Group received a special focus to improve these states' health care. EAG's two states are Odisha and Rajasthan, both of which have a sizable rural population. The current study analyzed Odisha and Rajasthan using various indicators to see the changes in maternal health conditions from NFHS 4 to NFHS 5 factsheets in order to determine the changes in maternal health conditions. Many programs have been undertaken under NHM to enhance the healthcare system, with a particular focus on EAG states.

Maternal mortality rates in Odisha and Rajasthan have been identified as high. The study's goal is to compare state reports from NFHS-4 and NFHS-5 for Odisha and Rajasthan to discover changes in maternal health indicators over time and analyze the maternal mortality ratio (MMR) in these states. The purpose of this study is to give evidence-based suggestions to improve maternal health outcomes in these states and to close the socioeconomic gap in maternal health care utilization.

CHAPTER 3: REVIEW OF LITERATURE:

Author	Methodology	Key Features
Papia Raj Nilanjana Gupta	A systematic review of literature for 134 articles.	- comprehensive trends in research on maternal health issues in India, considering the information from the National Family Health Survey (NFHS)'s five rounds of data collection. - The importance of education as a social factor, particularly in relation to maternal health, is reaffirmed by this. - Literacy or community-level education is crucial for expectant moms to understand the effects of pregnancy, take care of themselves, and the role of midwives and nurses in having a safe pregnancy
Sutapa Agrawal JasmineFledderjohann Sukumar Vellakkal David Stuckler	- Study design: Cross-sectional study from NFHS 3 - Sample size:	studied the relationship between an appropriately diversified diet, prenatal iron, and folic acid supplementation, and

	39657 aged 15-49 who had had a live birth in the five years preceding the survey	symptoms of PE or E in Indian women.
Marianne Vidler Umesh Ramadurg Umesh Charantimath Geetanjali Katageri Chandrashekhar Karadiguddi Diane Sawchuck Rahat Qureshi et al	• Study location: Karnataka • Sampling technique: Purposive sampling • Research type: 23 focus groups and 12 individual interviews with community and health system representatives	• Described the patterns and variables influencing the utilization of routine and emergency maternal health care in rural areas of Karnataka • Rural south Indian people reported using medical services frequently for pregnancies and deliveries. • To promote early pregnancy disclosure and sensitize the public about the value of facility-based treatment, community-based activities should be strengthened. • The infrastructure of rural Karnataka's health facilities needs to be updated as well to guarantee a steady supply

		of electricity and better ward hygiene.
Balhasan Ali Shekhar Chauhan	• Descriptive statistics, the concentration index (CI), and the Wagstaff decomposition approach were used. • Data collected from NFHS 2005 - 2015	• There is significant inequality at the regional, geographic, economic, and social levels, and numerous socioeconomic factors contribute to a very large share of inequality in maternal healthcare utilization in India. • Recommended that the NRHM maternal and child health care program be extended and focused on lower socioeconomic groups and marginalized mothers in order to eliminate maternal health services inequality, notably in the component of full ANC.
Gunjan Kumar, Tarun Shankar Choudhary, Akanksha Srivastava, Ravi Prakash Upadhyay, Sunita Taneja, Rajiv Bahl, Jose Martines, Maharaj Kishan Bhan et al	• Sample size: 190,898 women from India's NFHS 4. • Multivariable logistic regression model was carried out.	• Only about one-fifth of expectant mothers have received complete ANC in the past 20 years. • The lower number of ANC visits is the cause of the IFA tablet's low consumption.

		• Participation of the father, social media, and counselling may boost the use of ANC.
Arabinda Ghosh Rohini Ghosh	• NFHS 1, 2, 3 & 4 • Multivariable logistic regression model was carried out	• Women in the wealthiest households are nearly four times more likely than those in the lowest to have at least four ANC visits. • ANC has increased from NFHS 1 to 4.
Sukumar Vellakkal Adyya Gupta Zaky Khan David Stuckler Aaron Reeves Shah Ebrahim Ann Bowling Pat Doyle	• NFHS 1, 2, 3, & 4 • AHS 2011 - 2012	• NRHM led to a rise in maternal healthcare use and a decrease in socioeconomic disparities in high-focus states. • With the practically complete implementation the and greatest outreach, public health programs in developing nation contexts will have bigger equity implications. • For universal access to healthcare, it is essential to focus on underprivileged people and establish public

		health initiatives that include maternal and child healthcare components.
Ria Saha Pintu Paul	• Study design: a cross-sectional study has been conducted from NFHS 4 data • Sample size: 112,518 women • Bivariate and multivariate regression analysis techniques were used	• Despite various government-initiated 'Safe Motherhood' initiatives, the MMR in LPS remains higher than the national norm. • While states such as Madhya Pradesh, Odisha, and Rajasthan have improved their institutional delivery coverage, states such as Chhattisgarh, Jharkhand, Bihar, Uttar Pradesh, and Uttarakhand remain behind. • While studies have shown that the JSY monetary incentive is beneficial and motivating for delivering in a health institution, increased targeted attention to the quality of care is required for far better results.
Suyash Mishra Sanjay K. Mohanty	• Sample size: NFHS 4 data	• The amount of distress finance on institutional

		delivery was significant in LPS of Bihar and Odisha, as well as in Telangana, which had the highest rate of cesarean birth. • Mothers who had cesarean births, delivered in private health centers, and had a high OOPE on institutional delivery were more likely to suffer distress financing. • Increasing the usage of PHC, reducing cesarean deliveries, and enhancing access to drugs and diagnostic services can all help to minimize the scope of distress financing in India.
Anns Issac Susmita Chatterjee Aradhana Srivastava Sanghita Bhattacharyya	• Study design: Cross-sectional analysis • Sample size: 558 recently delivered women who have delivered at four public health facilities. • Study location:	• The women had to pay a substantial OOPE, which fluctuated depending on the complexities of the delivery. • .The fundamental aim of the conditional cash transfer plan will be compromised if a woman is required to pay nearly

	Uttar Pradesh	half of the monetary incentive in order to access services that are intended to be free of charge. • OOPE on obtaining care at public health facilities is an essential indicator of service utilization that, if not addressed by the health system, can discourage women from delivering in public health facilities in the future, despite the payment incentive plan.
Dipti Govil Neetu Purohit Shiv Dutt Gupta Sanjay Kumar Mohanty	• Sample size: A community-based study, 424 childbearing women • Study Location: Rajasthan • Descriptive analysis using logistic regression was carried out	• Factors such as ANC location, type of birth, and delivery complications all contributed to variations in OOPE. • OOPE public clinic charged us\$44 for a standard delivery and us\$145 for a complex delivery. • OOPE was found to be predicted by factors such as a girl's educational level, her family's

		economic situation, and pregnancy issues.
Nattawut Thongkong Ellen van de Poel Swati Sarbani Roy Shibanand Rath Tanja A J Houweling	• Sample size: 3,682 births (in 2009-2010) from a demographic surveillance system in five districts in Jharkhand and Odisha	• Regardless of having discovered that the majority of ladies were aware of JSY, participation was quite low. • Currently, the JSY system is unable to close the institutional delivery rate difference between the rich and the poor • There are still significant barriers to institutional delivery that must be overcome, and low-performing states and districts require more support.
Sameera A. Talegawkar Yichen Jin Erica Sedlander Rohini Ganjoo Satyanarjan Behera et al	•	• The RANI Project is designed to bring down anaemia in all women of reproductive age (15-49 years) by increasing the intake of foods rich in nutrients and iron supplements based on societal norms. • Women who received more intervention

		reported better diet quality. These findings highlight the preliminary efficacy of a social norm-based intervention for increasing nutritional quality.
Suman Chakrabarti Anwesha Pan Parvati Singh	• Sample size: NFHS 1 2 and 3	• When compared to other Indian states, exposure to the Mamata CCT program was linked to higher rates of pregnant and lactating women in Odisha seeking ANC visits, lactation support, and child immunization. • Compared to reference groups, the prevalence of anaemia during pregnancy among Odisha women decreased after the Mamata plan, indicating improved maternal nutrition. • Following the implementation of the Mamata plan, Odisha's U5 child stunting and anaemia rates were also lower than those of other states.

CHAPTER 4: METHODOLOGY

Study design: The study used a descriptive analysis of maternal health indicators taken from the NFHS 4 and 5 Datasheet.

Study setting: Odisha and Rajasthan

Sample size: NFHS 4 and NFHS 5 fact sheets of Odisha and Rajasthan

Duration of the study: 70 days from March 1st to May 10th

Data collection method: Secondary data

Data collection and analysis tool: MS Excel

The selected indicators for analysis include:

- Maternal Mortality Ratio (MMR)
- ANC coverage
- Skilled birth attendance (SBA)
- Postnatal care utilization

Ethical considerations: Deidentified respondent data from the public domain was used, avoiding the possibility of respondents' personal information being disclosed.

Data was extracted, compiled, and compared between the two surveys to identify any significant changes in the maternal health situation. The analysis will also explore the contextual factors and determinants associated with the performance of each indicator.

CHAPTER 4: RESULTS

Along with the maternal health situation marital trends, family planning methods use, and unmet needs are explored as well.

Table 1 describes marriage and fertility trends. Teenage marriage is a marriage in which both partners are under the legal marriage age. In India, women must be 18 years old to marry legally. According to the data in Table 1, the proportion of women aged twenty to twenty-four who marry before the age of 18 has noticed a downfall in both Rajasthan and Odisha between the NFHS-4 and NFHS-5 surveys. Only about a quarter women of age 20-24 is married under the legal age in Rajasthan but in Odisha less than Quarter proportion of women got married under legal age which shows improvement and increased awareness from NFHS 4 to 5.

The TFR in Rajasthan has dipped from 2.4 to 2 representing a major milestone in population stabilization whereas in Odisha, TFR dropped from 2.1 to 1.8 which is slightly lower than the goal of achieving the TFR of 2.1.

Table 1 Trends of marriage and fertility		
State	NFHS-4	NFHS-5
Woman who is between 20 and 24 years old and got married before turning 18 (%)		
Rajasthan	35.4	25.4
Odisha	21.3	20.5
Overall fertility rate (Children for women) (%)		
Rajasthan	2.4	2.0
Odisha	2.1	1.8

women between the ages of 15 and 19 who were already parents or expecting children at the time of the survey (%)		
Rajasthan	6.3	3.7
Odisha	7.6	7.6

Child marriage has been associated with increased fertility, unexpected or untimely pregnancy, and pregnancy termination.

However, the drop in early marriage in Rajasthan and Odisha may not necessarily result in a decline in fertility rates, as declining fertility rates have been recorded throughout India, regardless of the legal age of marriage.

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

Figures 4,5,6 and Table 2 represent the utilization of birth-control methods in both states. According to the data in the table, in Rajasthan, the use of any birth control technique increased from 59.7 percent to 72.3 percent, while in Odisha, the use of any birth control method increased from 57.3 percent to 74.1 percent. In Rajasthan, the use of any contemporary birth control technique grew from 53.5 percent to 62.1 percent, and in Odisha, it increased from 45.4 percent to 48.8 percent.

The overall use of any form of birth control has increased in both states, with Odisha exhibiting a greater increase than Rajasthan. The use of any contemporary birth control method has increased in both states, but the growth in Rajasthan is greater. In both states, sterilization of women is the most frequently used procedure, with Rajasthan having a higher use rate than Odisha.

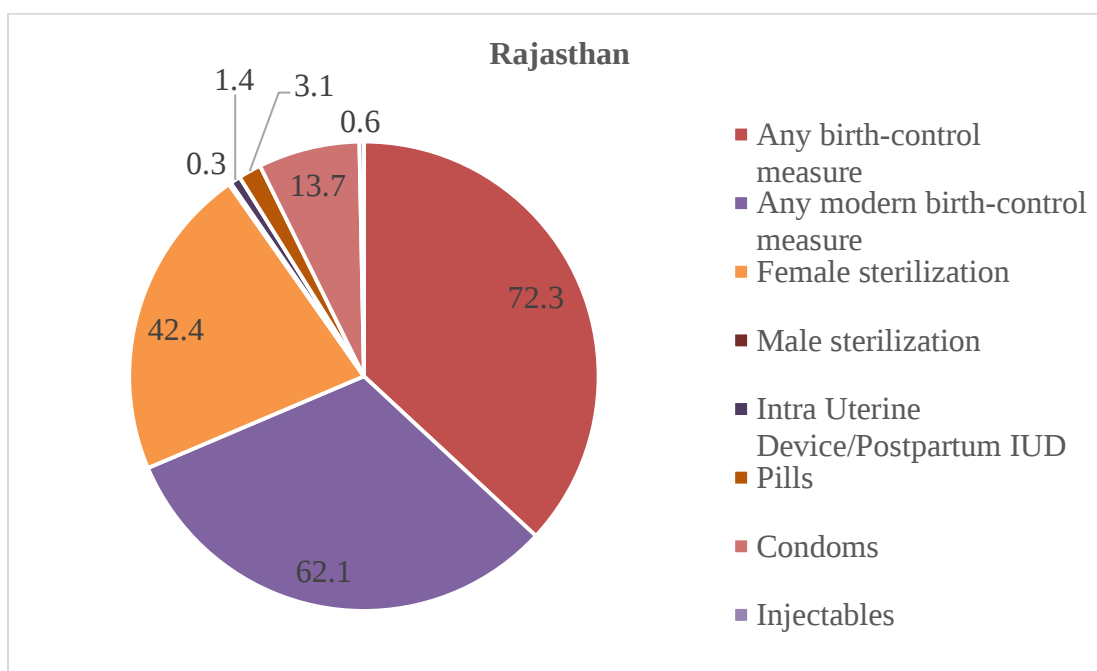


Figure 4 Utilization of birth-control methods in Rajasthan

Source: NFHS 5

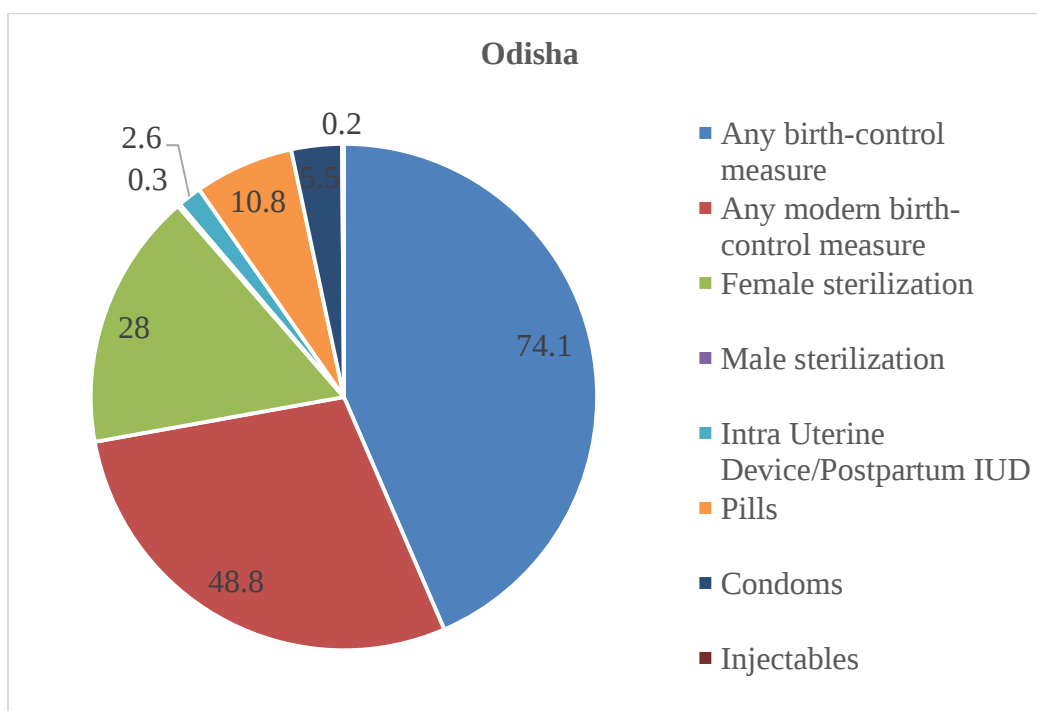


Figure 5 Utilization of birth-control methods in Odisha

Source: NFHS 5

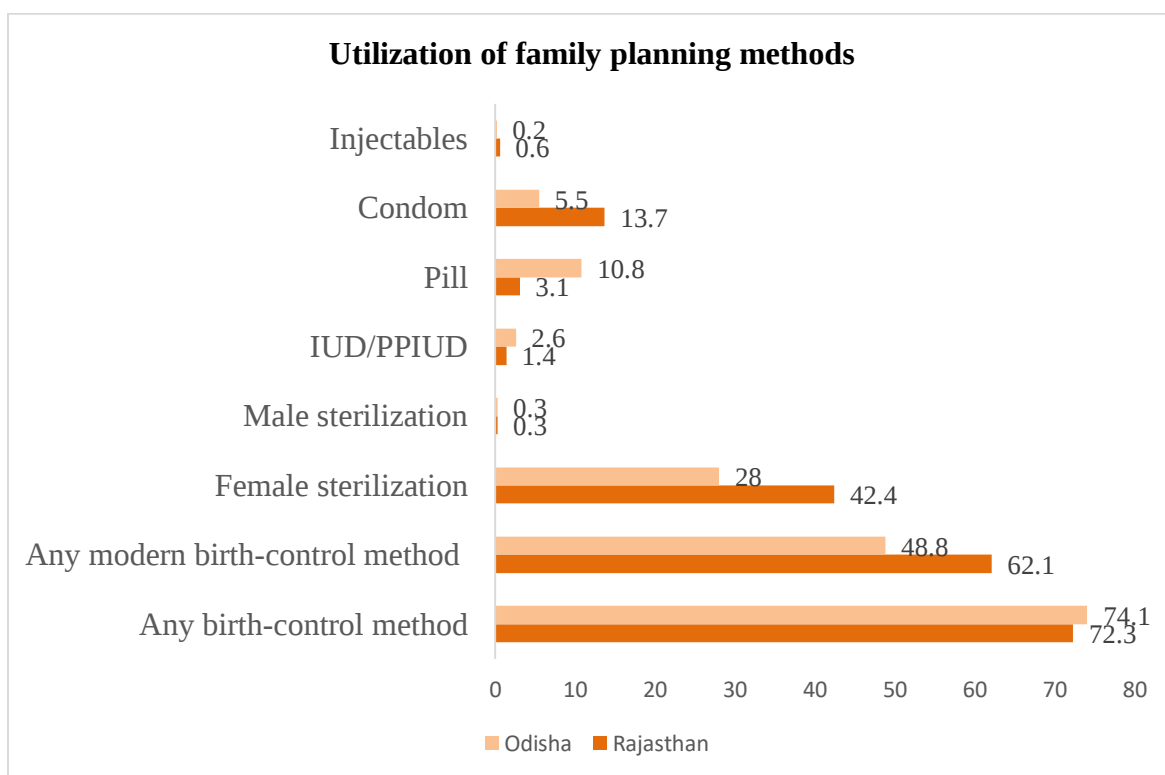


Figure 6 Utilization of family planning methods in both states

Source: NFHS 5 Fact sheets of Odisha and Rajasthan

Table 2 Utilization of family planning methods		
State	NFHS-4	NFHS-5
Any birth-control method which is not shown separately (%)		
Rajasthan	59.7	72.3
Odisha	57.3	74.1
Any Modern birth-control method which is not shown separately (%)		
Rajasthan	53.5	62.1
Odisha	45.4	48.8
Percentage of women who had undergone Sterilization (%)		
Rajasthan	40.7	42.4
Odisha	28.2	28

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

Table 3 represents the overall unmet need for birth control in both states. Both Rajasthan and Odisha showed a significant downfall in unmet needs from 12.3 percent to 7.6 percent and from 13.6 percent to 7.2 percent respectively. Rajasthan witnessed about a 40 percent decrease in unmet needs, whereas Odisha exceeded Rajasthan by decreasing by roughly half from NFHS 4 to 5.

Fecund women who do not use contraception but want to space out their births or limit their childbearing are said to have unmet contraceptive methods. Women who: are at risk of pregnancy, are not using contraceptive measures, and either don't want to get pregnant within the next 2 years or is undecided if she wants to get pregnant or when.

Table 3 Unmet needs in contraceptive methods		
State	NFHS-4	NFHS-5
Overall unmet need for birth control (%)		
Rajasthan	12.3	7.6
Odisha	13.6	7.2

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

PRENATAL CARE:

The prenatal examination is one of the best indicators to evaluate the maternal health situation of pregnant women. The full ANC package of pregnant care consists of 3 things,

1. At least 4 ANC visits
2. Intake of 100/180 IFA tablets/syrup
3. 2 TT injections

Table 4 shows the proportion of the utilization of ANC services by a woman who is pregnant in both states. ANC is crucial for both the mother and the fetus since it aids in the diagnosis of any conditions that may later in the pregnancy affect the mother and the child. WHO recommends that every pregnant woman who is in excellent health and does not have any major medical issues get at least four antenatal checkups. Following the confirmation of the

pregnancy, the first visit should occur between eight and twelve weeks later, the second between twenty-four and twenty-six weeks, the third between thirty-two weeks, and the fourth between thirty-six and thirty-eight weeks.

Antenatal checkups of the first trimester have increased in Rajasthan and Odisha by 21 percent and 20 percent from NFHS 4 to NFHS 5 respectively. In Rajasthan, only over half of women received 4 prenatal care visits, despite the fact that 76 percent of women got their antenatal checkup in the first trimester. Given that the percentage of women in Odisha who had at least 4 ANC visits exceeds the proportion of women who have had antenatal check-up in their first trimester (78.1 and 76.9, respectively), the situation there is better than it is in Rajasthan.

Table 4 – Pregnant women who utilized ANC services		
State	NFHS-4	NFHS-5
Pregnant women who had a first-trimester prenatal check-up (%)		
Rajasthan	63.0	76.3
Odisha	64.0	76.9
Pregnant women who received at least four ANC visits (%)		
Rajasthan	38.5	55.3
Odisha	61.9	78.1

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

Table 5 displays the mother's protection against new-born tetanus and anaemia status in Rajasthan and Odisha. In terms of women who had their most recent child vaccinated against neonatal tetanus, Odisha and Rajasthan performed well; more than 90% of pregnant women in both states are protected against tetanus. According to NFHS 5, Odisha has the highest rate of pregnant women with anaemia in India. Despite a nearly 6-fold spike in IFA tablet consumption for 180 days, the percentage of pregnant women in NFHS 4 to 5 continues to rise by 30 percent, which is a cause of concern in Odisha. Rajasthan did not perform well in

the anaemia challenge, as there has been no change (decreased by only 1 percent), leaving nearly half of the pregnant women anaemic, while the percentage of IFA consumption for 180 days increased 1.4-fold from NFHS 4 to 5. Both states performed very well in the consumption of IFA tablets for 180 days by pregnant women.

Table 5 Mother's protection against new-born tetanus and anaemia status		
State	NFHS-4	NFHS-5
Mothers who had their most recent child vaccinated against neonatal tetanus (%)		
Rajasthan	89.7	93.4
Odisha	94.3	95.2
Mothers who have consumed IFA for 180 days or more when they were pregnant (%)		
Rajasthan	6	14.4
Odisha	4.2	34.4
Pregnant women of reproductive age who are anaemic (%)		
Rajasthan	46.6	46.3
Odisha	47.6	61.8

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

Table 6 indicates the proportion of MCP cards issued to all registered mothers. The MCP Card is used to follow a pregnant woman's ANC visits, to explain the need for institutional deliveries, to describe the services available at AWCs, to track children's vaccines, and so on. The MCP card is very important for the mother, and she should keep it safe because it contains all of the information about her services, such as ANC visits and vaccine records, and so on. ASHA and AWW keep track of MCP cards and update the card for every visit. Distribution of MCP cards was successful in Odisha and Rajasthan, reaching nearly 100 percent in NFHS 5 with increases of 6% and 2%, respectively, from NFHS 4 to 5.

Table 6 MCP card distribution		
State	NFHS-4	NFHS-5
MCP card distributed to Pregnant women at the time of ANC registration (%)		
Rajasthan	92.3	98.1
Odisha	97.2	99.4

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

POSTNATAL CARE

Table 7 represents the proportion of women receiving PNC and new-born receiving care at a healthcare facility within 24 hours of home delivery.

The postnatal phase is essential for encouraging positive habits, imparting knowledge and life skills, aiding breastfeeding, counseling women on family planning options, fostering good mental health, and avoiding and managing complications associated with giving birth.

A doctor, nurse, Lady Health Visitor, ANM, midwife, or other healthcare professional will typically provide PNC.

The percentage of women receiving PNC treatment from any healthcare professional in Rajasthan and Odisha has increased by 34 percent and 21 percent from NFHS 4 to 5. Odisha and Rajasthan are doing well, with over 90% and 85% of pregnant women receiving PNC care, respectively, lowering maternal mortality. Both states fare poorly in terms of providing care to a newborn who is taken to a healthcare facility within twenty four hours of birth. When compared to Rajasthan, Odisha is doing better, having increased its provision of newborn care by 50%. However, when assessed separately, just 1.3 percent and 10.5 percent of new babies in Rajasthan and Odisha, respectively, receive care, which is an exceedingly low ratio.

Table 7 Women and new-born receiving PNC		
State	NFHS-4	NFHS-5
Women who receive PNC treatment from any healthcare practitioner within two days of giving birth (%)		
Rajasthan	63.7	85.3

Odisha	73.2	88.4
New-borns who are born at home and sent to a health facility within 24 hours of delivery for a check-up (%)		
Rajasthan	1.2	1.3
Odisha	6.9	10.5

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

Table 8

The institutional delivery in both Rajasthan and Odisha has accelerated reaching almost 95 percent, as indicated by NFHS-5, in comparison to NFHS-4 due to the successful implementation of JSY. Home births have been sliced by more than half in Rajasthan, while they have been reduced by nearly half in Odisha from NFHS 4 to 5. Almost 95 percent of the deliveries in both states have been aided by SBA resulting in minimizing the complications in delivery. Total C-section deliveries have climbed by more than 50 percent in Odisha and by 21 percent in Rajasthan, respectively. Almost three-quarters of C-section births in Odisha are performed in private settings, whereas Rajasthan accounts for only 30 percent, leading in a rise in OOPS in Odisha. C-section deliveries in Rajasthan and Odisha are quite low when compared to a private setting which is 7.2 and 15.3 respectively.

Table 8 Care during the delivery of a pregnant women		
State	NFHS-4	NFHS-5
Institutional deliveries (%)		
Rajasthan	84	94.9
Odisha	85.3	92.2
Institutional births in government facilities (%)		
Rajasthan	63.5	77
Odisha	75.8	78.7
Home births that were carried out by SBA (%)		
Rajasthan	3.2	1.4

Odisha	3.3	1.9
Births that are aided by trained medical personnel (%)		
Rajasthan	86.6	95.6
Odisha	86.5	91.8
Overall deliveries by C-section (%)		
Rajasthan	8.6	10.4
Odisha	13.8	21.6
C-section deliveries in a private setting (%)		
Rajasthan	23.2	26.9
Odisha	53.7	70.7
C-section deliveries in government facilities (%)		
Rajasthan	6.1	7.2
Odisha	11.5	15.3

Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

OUT-OF-POCKET EXPENDITURE:

Figure 7 represents the proportion of women who receive JSY aid but must pay out of pocket. The NRHM's JSY is a safe maternity initiative. The goal of NHM is to shrink maternal and infant mortality by uplifting pregnant women to have children born at a hospital. The approach is being executed in all states and UT, with a concentration on states that are underperforming. According to NFHS-5 figures, Rajasthan fared more fairly than Odisha in providing JSY benefits to pregnant mothers. Rajasthan has much lower OOPE on prenatal and delivery care in public health centres than Odisha, with a 31 percent decrease in OOPE per delivery in a government setting from NFHS 4 to 5. Rajasthan outperformed Odisha by around fifty percent in NFHS 5. Despite the implementation of JSY in Odisha, the OOPE stands at 4,139, which is cause for concern.

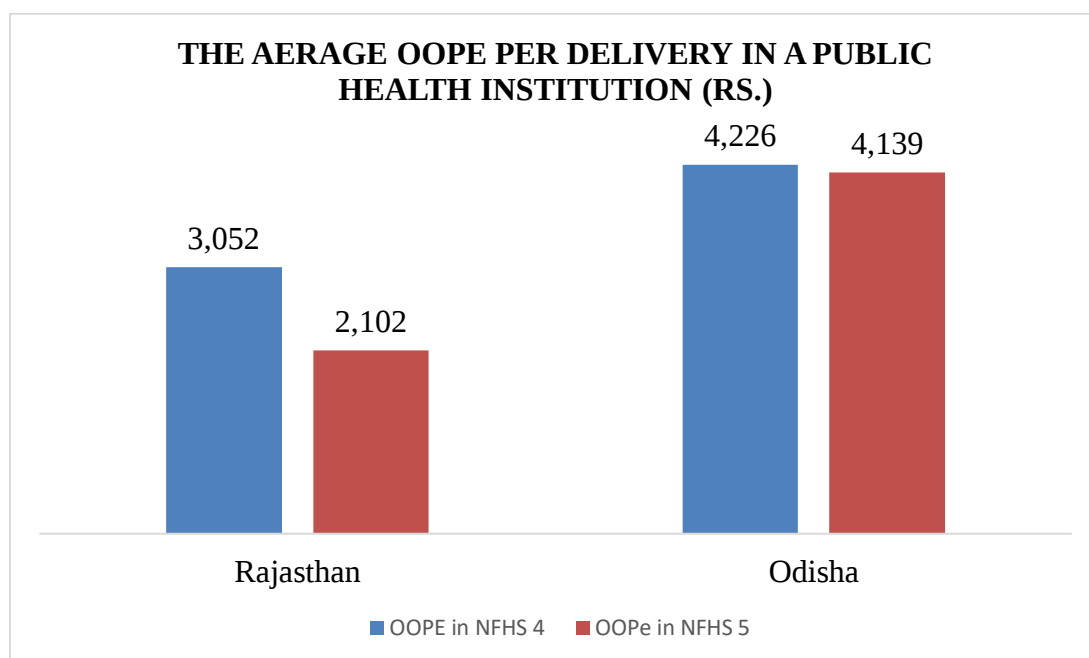


Figure 7 Average OOPe for each delivery in a public healthcare facility
Source: NFHS 4 and 5 Fact sheets of Odisha and Rajasthan

Figure 8 shows data on the Maternal Mortality Ratio (MMR) for India and two individual states, Odisha and Rajasthan, from 2014-2016 to 2018-2020. MMR in India was 130 in 2014-16. India's MMR steadily decreased throughout the following time periods, from 2015-2017 to 2018-2020. It dropped to 122, then 113, 103, and finally 97, suggesting a downward trend in maternal mortality in the country.

Throughout the entire period, the MMR in Odisha was higher than the national average. Odisha had an MMR of 180 in 2014-2016, which subsequently declined to 168, 150, 136, and 119 in successive time periods. Although the MMR in Odisha declined over time, it remained higher than the national average, indicating that the state faces a bigger difficulty in addressing maternal health issues than the country.

Rajasthan has the highest MMR of the three entities. The MMR in Rajasthan was 199 in 2014-2016, then 186, 164, 141, and ultimately 113 in successive time periods. Despite the dip, Rajasthan maintained a significantly higher MMR than the national average and Odisha.

Overall, the results suggest a downward trend in maternal mortality in India. However, there is substantial variety in MMR across states, with Odisha and Rajasthan having higher rates than the national average. These figures show the importance of focusing efforts to improve

maternity healthcare and minimize maternal mortality in these states.

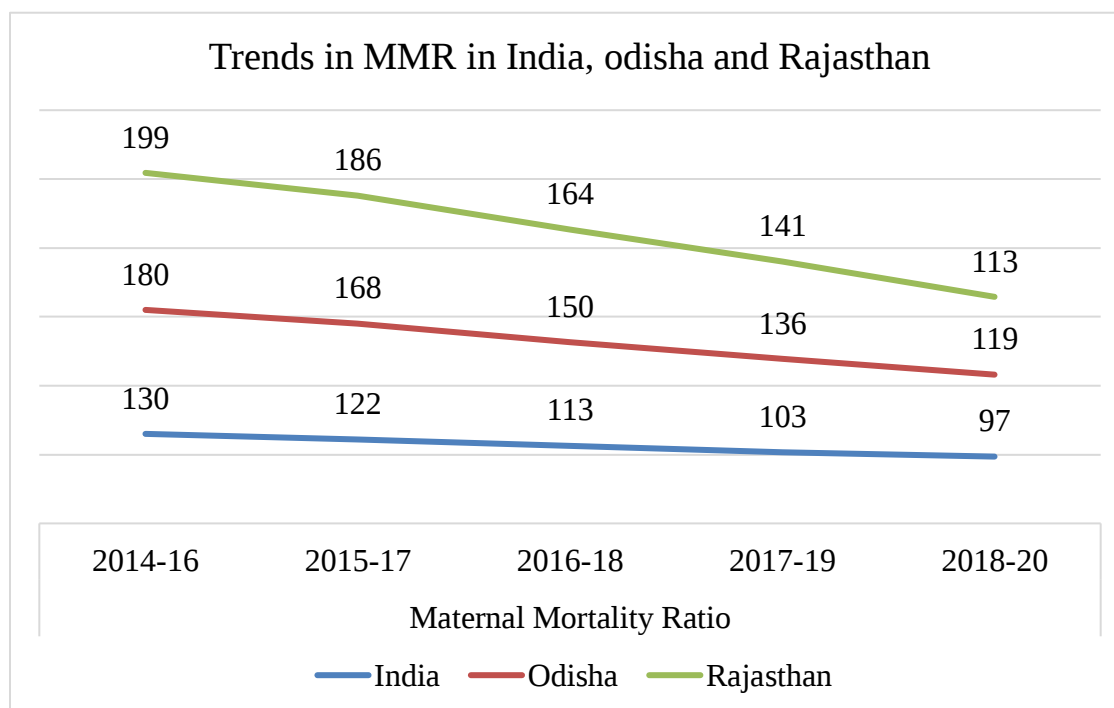


Figure 8 Trends in MMR in Rajasthan, Odisha in comparison to India

Source: RGI SRS

CHAPTER 5: DISCUSSION

There are several indicators to determine the maternal health situation in states or in the nation, and in the current study, we used a few indicators to compare the maternal health conditions in Odisha and Rajasthan, and we discovered that both states are progressing toward better maternal health care, with Rajasthan outperforming Odisha.

Teenage marriages have declined significantly in the Indian states of Rajasthan and Odisha in recent years. the proportion of women aged twenty to twenty-four who marry before the age of 18 has noticed a downfall in both states, according to data from the NFHS. The consequences of child marriage affect not just the girls, but also their families and communities. Girls typically drop out of school due to social pressure, endure domestic violence, and issues in reproductive health may result in death. Early marriage has been linked to a variety of reproductive health issues, including higher fertility, untimely pregnancies, and pregnancy terminations.

ANC is important for both the mother and the fetus since it aids in the diagnosis of any disorders that may impact the mother and child later in the pregnancy. WHO recommends that every pregnant woman who is in good health and has no major medical concerns have at least four antenatal examinations. Antenatal checkups in the first trimester increased in Rajasthan and Odisha from NFHS 4 to NFHS 5. In contrast to the previous study of inequality in maternal health utilization in rural India, where only about one-fifth of pregnant women received complete ANC in the past 20 years, 76 percent of women had their antenatal checkup in the first trimester, and slightly more than half of women in Rajasthan received four prenatal care visits. Odisha's position is better than Rajasthan's since the proportion of women who have had at least four prenatal care visits exceeds the proportion of women who have had antenatal check-ups in the 3 months of their pregnancy. When it comes to women who received a neonatal tetanus vaccination for their most recent child, Odisha and Rajasthan did well. Contrary to prior literature that claimed that anaemia has decreased as a result of the implementation of the MCP program, Odisha has India's highest percentage of pregnant women who are anaemic despite the MCP cards being distributed at a rate of almost entirely. The proportion of women seeking PNC treatment from any medical professional has increased in Rajasthan and Odisha. Odisha and Rajasthan are doing well in

terms of maternal mortality reduction, with more than ninety percent and 85 percent of pregnant women receiving PNC therapy, respectively. Both states do poorly when it comes to caring for a newborn who is brought to a medical facility within twenty-four hours of birth. Odisha is doing better than Rajasthan, having raised neonatal care provision by fifty percent, while Rajasthan still has space to enhance PNC treatment overall.

Despite the implementation of JSY in Odisha, the OOPE in the state is higher than in Rajasthan, which is cause for concern. The government should lower OOPE so that more pregnant women choose institutional births over home births. Similar findings were observed in an Uttar Pradesh study, where the women were required to pay significant OOPE related to the complexity of delivery in public healthcare facilities. If the OOPE is huge, this may hinder women from giving birth in institutions.

A shift towards institutional deliveries and potentially higher utilization of SBA is observed. Furthermore, the percentage of births attended by skilled health employees increased overall, indicating enhanced availability of trained medical experts during deliveries. The data also shows there is a rise in cesarean section deliveries, which could indicate changes in medical practices or mothers' health conditions but also seems to have high out-of-pocket expenses.

CHAPTER 6: CONCLUSION

The maternal health status in Rajasthan and Odisha implies that there is a need for authorities to invest more in maternal health programs. To attain maternal health goals, a significant amount of progress in maternal health care is required. This advancement is essential during all stages of pregnancy and delivery. Overall health system development increased political commitment, and community mobilization are some essential ways for improving maternal health services. Furthermore, the mean age of marriage in both states is lower than the legal age of marriage in the country, which is an area of concern in terms of maternal health services. The age of marriage can have an impact on both mother and infant health, as well as lead to preterm labor, which can result in maternal and newborn challenges as well.

When compared to NFHS 4 and 5, Rajasthan and Odisha both performed well in terms of maternal health. However, there is still much opportunity for development in several areas. Odisha outperformed Rajasthan in terms of pregnant women obtaining at least four ANC checks, although anaemia rates were higher in Odisha. Despite doing better in terms of the proportion of pregnant women who consume IFA, Odisha scored poorly because of the rise in anaemic pregnant women from NFHS 4 to 5.

Despite a 45 percent increase in women getting four prenatal checkups, just 55 percent of pregnant women got four antenatal care visits. Despite the use of IFA tablets/syrup, anaemia in pregnant women in Odisha had grown by 30 percent. The study's findings emphasize the need of enhancing pregnant women's involvement in the antenatal phase of their pregnancy, as well as the impact of receiving the whole ANC package. It also envisions a higher share of institutional deliveries by skilled workers and a reduced number of house deliveries.

CHAPTER 7: RECOMMENDATIONS

Several initiatives are being taken aimed at lowering the MMR. These include schemes and outreach programs like the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), Pradhan Mantri Matru Vandana Yojana (PMMVY), Labour Room Quality Improvement Initiative (LaQshya), Janani Suraksha Yojana (JSY), Surakshit Matratva Ashwasan (SUMAN), and others that provide pregnant women with awareness, financial assistance, nutrition, and healthcare. In India, the Maternal Mortality Surveillance Review (MDSR) is used to identify and research the causes and other factors that contribute to maternal mortality at both the facility and community levels. This allows for the implementation of focused actions to address the issue.

Objective 1:

- Increase access to skilled prenatal care, especially in Odisha where the percentage is lower than in Rajasthan.
- Encourage women to have at least four antenatal care visits in order to protect their health and the health of their unborn children.
- To reduce anaemia and other issues, pregnant women should take iron and folic acid supplements.
- Conduct additional analysis to pinpoint regions with very poor maternal health indicators and create focused initiatives to address these problems.
- To improve maternal health outcomes in Rajasthan and Odisha, policymakers must focus on expanding access to and using maternal health care services, addressing socioeconomic disparities, and creating tailored policies based on the most recent NFHS 4 and 5 data.

Objective 2:

- Antenatal care is critical to maternal health, and both states should prioritize its good management, particularly in rural areas. In addition to boosting institutional deliveries, encouraging deliveries by SBA, especially in rural and underserved areas

such as tribal areas, can assist reduce maternal mortality and morbidity.

- Health services can be promoted by activities such as the provision of iron folic acid pills, micronutrients, and immunization, which can be assisted by frontline workers. These workers can also engage in community counseling utilizing a variety of information, education, and communication (IEC) methods to increase the use of maternal health care.
- Avoiding unnecessary cesarean section (CS) deliveries can help improve maternal health outcomes. This can be accomplished by ensuring that CS cases are handled by qualified medical personnel and minimizing needless CS deliveries. Such measures not only enhance the health of women but also have a significant impact on the socioeconomic well-being of families. Efficient private-sector management is critical for avoiding superfluous CS delivery and ensuring proper resource utilization.
- The government ought to maintain the necessary staff, medicines, beds, and other resources on hand so that more deliveries can take place in government hospitals. And this could assist in reducing the number of CS deliveries in hospitals other than government facilities, given the proportion of CS deliveries in private hospitals is relatively high in both states.
- An increase in qualified personnel handling the mother's postnatal care and caring for the newborn child following delivery at home when brought to any medical facility.

Objective 3:

- In Odisha and Rajasthan, the introduction of maternal health schemes such as the Janani Suraksha Yojana (JSY) has demonstrated considerable improvement in lowering maternal mortality rates (MMR) and inequality since 2005. However, the coverage of these programs must be expanded in order to serve more women and enhance maternal health outcomes.
- Although there has been an important shift in maternal health care services in rural India, there is still a significant disparity in utilization across socioeconomic classes. As a result, there is an urgent need to increase the utilization of maternal health care services, particularly among underserved communities.

- Participation in the Utkrisht DIB has resulted in quality improvements in private hospitals in Rajasthan. To improve maternal health outcomes, both Rajasthan and Odisha must increase the quality of maternal health care services.
- The Take-Home Rations (THR) program is an important initiative in India for improving child and maternal nutrition. The program must be improved to ensure that it reaches its intended beneficiaries and improves mother and child nutrition.
- Despite the fact that Odisha's consumption of IFA is higher than Rajasthan's, Anaemia Mukht Bharat implementation must be aggressive because a high percentage of pregnant women have anaemia.

Overall recommendations:

- Both states should seek to reduce teen marriages because early marriages may adversely affect both the mother and the newborn, resulting in complications during and after delivery.
- Rajasthan and Odisha need to work to ensure that pregnant women with ANC registration receive a comprehensive ANC package.
- Steps should be taken in reducing anaemia in pregnant women, particularly in Odisha.
- Measures to be taken in improving the mother's postnatal care and care for the newborn child following delivery at home when brought to any medical facility.
- Avoiding unnecessary cesarean section (CS) deliveries can help improve maternal health outcomes.
- Significant steps must be taken to improve the CS deliveries at public health institutions rather than in private institutions in both states, especially in Odisha.

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