

**A COMPARATIVE ANALYSIS OF
MATERNAL HEALTH SITUATION IN 22
STATES AND UNION TERRITORIES: USING
FACTSHEETS OF NATIONAL HEALTH
SURVEY 5 AND 4**

Dissertation Report 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

Ritika Gupta

Under the Supervision and Guidance of

Dr. Vinod Kumar SV

2021

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled The Bonafede record of my original research work is a comparative examination of maternal health in 22 states and union territories, using fact sheets from the National Family Health Survey 5 and 4. 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.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)

Ritika Gupta

Name of Student

19-June-2021

Date

Completion Certification

This is to certify that Ritika Gupta 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 (name of the organization) during March 22, 2021 to June 19, 2021.

Place:

Date:

Preceptor/Head of the Organization

Name of the organization

CERTIFICATE

This is to certify that dissertation titled “A comparative analysis of maternal health situation in 22 States and Union territories using fact sheets of National Family Health Survey 5 and 4” is a record of the research work undertaken by Ritika Gupta 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 her methodologies involved in the research study have been scientific, sincere, and analytical.

Faculty Guide
IIHMR University, Jaipur

Date

School Dean
IIHMR University, Jaipur

Date

ACKNOWLEDGEMENT

Behind every study there stands myriad of people whose help and contribution makes it successful. It has been a remarkable experience to work on this project in guidance of Dr. Vinod Kumar SV. I am gratified to him for his valuable supervision and collaboration during the project.

During the Global disaster like COVID-19 Dr. Vinod Kumar SV has made it easier to carry the project with immense ease and patience and, ushered in such difficult time of crisis. I have been benefited from the project. I would also like to thank my Family and friends for the cordial environment which made it smooth to complete my project in time.

So, this acknowledgement is an attempt to thank each one who was directly or indirectly involved in the preparation of project.

ABSTRACT

Worldwide, Indian women have less access to maternity healthcare than women in other industrialized or emerging countries, subsequent in deprived health and a high rate of maternal fatalities. This proportionate study focuses on the availability and operation of maternal healthcare facilities for Indian women of reproductive age (15-49) across India's key contributing states. According to evidence from various studies and a few articles on maternal health facilities in India shows that Indian women face numerous challenges and issues in accessing maternal healthcare facilities, primarily through pregnancy, childbirth, post-natal care, and antenatal checkups, representing inequity and little accessibility.

Objectives: This comparative study focus

- To study the relationships between full antenatal care and Women empowerment.
- To make a comparative analysis of full ANC across states using NFHS 4 and 5 data
- To compare the progress of ANC indicators with other indicators of maternal health continuum.

Methods: Descriptive Study, based on desk review using secondary data derived from NFHS 4 & NFHS 5 factsheets. Since NFHS 5 has currently released the data for 22 States and Union Territories, only these have been taken into consideration for this analysis. In addition, review of appropriate research publications and reports was done to generate corroborative evidence and relationships.

Results and Discussion: According to NFHS-5 fact sheet, the expansion within the indicators of maternal health within the states and Union Territories of Andaman and Nicobar Island, Andhra Pradesh, Assam, Bihar, Dadra and Nagar Haveli and Daman and Diu, Goa, Gujrat, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Ladakh, Lakshadweep, Maharashtra, Manipur, , Mizoram, Nagaland, Telangana, Tripura, West Bengal except Lakshadweep, Sikkim, Meghalaya, Mizoram, West Bengal, Telangana has improved when compared with NFHS-4.

Conclusions: The study's findings underline the importance of expecting mothers participating in the prenatal phase of their pregnancy as quickly as possible, as well as receiving the full ANC package. It also envisages a higher number of institutional deliveries being carried out by skilled workers and, as a result, a reduced proportion of house deliveries being carried out.

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Table1: Abbreviations

Abbreviations	
ANC	Ante natal Care
ANM	Auxiliary Nurse Midwife
BIMARU	Acronym for states of Bihar; Madhya Pradesh, Rajasthan, and Uttar Pradesh
CHC	Community Health Centre
CS	Caesarean Section
GDP	Gross Domestic Product
IFA	Iron and Folic Acid
LHV	Lady Health Visitor
MCH	Maternal and Child Health
MCP	Mother and Child Protection
MDG	Millennium Development Goals
MHC	Maternal Health Care
MP	Madhya Pradesh
NFHS	National Family Health Survey
PHC	Primary Health Centre
PNC	Post Natal Care
SC	Sub Centre
SC	Scheduled Cast
SDG	Sustainable Development Goals
ST	Scheduled Tribe
TT	Tetanus Toxoid
WHO	World Health Organization

1. INTRODUCTION

The reliability of women throughout pregnancy, childbirth, and the baby blues period is stated to as motherly well-being. It incorporates the over-all service areas of family assembling, beforehand customary gradient, pre-birth, and perinatal deliberation in order to ensure a secure and sustaining experience, much sooner rather than later, and to cut unfortunate events and fatality in other cases.[1] Maternal health is alarmed with the well-being and health of women, particularly during pregnancy, conception, and child rearing. According to the World Health Organization, notwithstanding the fact that motherhood is widely observed as a rewarding and exciting typical experience for mothers, a great numeral of women face frequent encounters, including poor health and in some cases, death. [2] As a result, it is compulsory to devote resources to the advancement of women [3]. The speculation is characteristically accepted out in a variety of ways, the most mutual of which are paying the cost of medical services, providing education on maternal health, facilitating effective family planning, and ensuring dynamic define the state of the strength of women with children. [4]

The happiness of mothers and children is an important aspect of a stable community. It is necessary to enhance the situation of maternal well-being. The UNDP's (United Nations Development Program) Millennium Development Goals (MDG) 4,5 focuses on educating the situation of maternal and child mortality rates (Reduction of kid Mortality and Improvement in Maternal Health). Notwithstanding the fact that numerous international organizations and local governments have made significant efforts, progress has been slow. Maternal and newborn child mortality is caused by a variety of infections, the most shared of which being water-borne illnesses and HIV/AIDS. Apart from illnesses, a variety of social factors have also contributed to maternal mortality, such as poverty, inadequate sanitation, and dirty water, as well as women's societal status, lack of training, and so on. Due to poverty, many people have trouble getting access to quality health-care services during pregnancy, those are normally very costly private clinics. In open clinics, health services must be of high quality, which is especially important when it comes to the treatment of pregnant women. [5]

The rates of maternal and infant death rate are significantly higher in provincial networks. There's a scarcity of disaggregated data on maternal health, and an equal number of nations haven't recognized their populations, and their health condition is to an outsized part unreported. Evidence from developed countries and a couple of developing countries proposes that Indigenous women face a spread of challenges in attaining social equality during their reproductive years, notably during pregnancy and labour, indicating a disparity and gap in their rights to health. People's profitability and skill are legitimately prejudiced by their health situation. Inequitable distribution of services within the community might be a serious source of worry. [6]

The forte of women during the ante-partum, intrapartum, and post-partum periods is mentioned as maternal wellness. The state of the ante-partum phase features a significant impact on the outcomes of the intra- and post-partum periods. (i)Treatment; (ii) pre-birth period; (iii) intra-natal period; (iv) post-natal period; and (v) between conventional period are the five major stages of the maternity cycle. Parenthood, on the unabridged, are often a largely beneficial and joyful interaction with created countries. regardless of the case could also

be, things isn't an equivalent in many developing countries, where parenthood is accompanying with illness, poor health, and even death. According to the World Health Organization, ninety-nine percent of maternal deaths transpire in evolving nations, and roughly 830 women die every day throughout pregnancy and childbirth thanks to preventable causes. Postpartum hemorrhage, pregnancy-induced hypertension, sepsis, premature birth, and clogged labour are the leading causes of mother mortality. In India, there are a spread of reasons for maternal death. The Maternal Mortality Ratio (MMR) may be a statistic which will be used as a robust marker to assess maternal health and is widely utilized in India for policymaking. consistent with the SRS Report for 2016-18, Assam has the very best MMR at 215 and Kerala has rock bottom at 43 per 100,000 live births, respectively, associated to the national rate of 113. [7]

2. LITERATURE REVIEW

Title of the study (Author and year)	Sample size	Objective	Key findings
“Status of Women’s Health in Goa and Sikkim: A Comparative Analysis of State Fact Sheets of National Family Health Survey (NFHS)-3 And 4” (Ranjit Kumar Dehury¹, Janmejaya Samal², Nafisa Vaze Desouza¹, Parthsarathi Dehury)		The main objective of the study was to assess the status of women’s health in Goa and Sikkim based on NFHS-3 and NFHS-4 fact sheets.	- The performance of Goa is relatively better compared to Sikkim. - The indicators analyzed in this study including access to resources strongly influence the health status and the empowerment of women which is linked with reproductive health outcomes. - In addition, both the fact sheets reveal that woman in these two states take part in household decision making.
“Predictors of Maternal Health Services Utilization by Poor, Rural Women: A Comparative Study in Indian States of Gujarat and Tamil Nadu” (Kranti Suresh Vora, Sally A Koblinsky, Marge A Koblinsky, 2015)	1584 and 601 rural women from Gujarat and Tamil Nadu, correspondingly	“To examine the role of JSY/CY and other healthcare system and social factors in predicting poor, rural women's use of maternal health services in Gujarat and Tamil Nadu”.	- The ladies of Tamil Nadu used maternal healthcare services more than the ladies of Gujarat. - Under some system, Tamil Nadu women were entitled to cash assistance for home delivery, implying that JSY had failed to foresee institutional deliveries. - Why Because ANC was not rewarded, programmes like JSY/CY did not

			provide adequate ANC. • Institutional and CS deliveries were predicted by women's education in Tamil Nadu, but husband's education was predicted in Gujarat.
“Rates, Indications, and Outcomes of Caesarean Section Deliveries: A Comparison of Tribal and Non-Tribal Women in Gujarat, India” (Gayatri Desai et. al., 2017)	19923 deliveries Kasturba Maternity Hospital.	• “To estimate and compare rates, determinants, indications and outcomes of caesarean section”. • “To assess how the inequity in Figure utilization can be addressed in a community-based hospital in tribal areas of Gujarat, India”.	• When compared to the non-tribal population, tribal people received significantly less CS. • The CS rates were affected by factors such as the lady's age, the number of pregnancies she had, her history of CS delivery, and her distance from the hospital. • There was no statistically significant difference between the incidence of birth asphyxia and the case death rate in both populations.
“How Equity Is the acceptance of Conditional Cash Handovers for Maternity Care in India? Evidence From the Janani Suraksha Yojana Scheme in Odisha and Jharkhand” (Nattawut Thonkong et. al., 2017)	3,682 births in five districts of Jharkhand and Odisha.	• “To measure and explain socioeconomic inequality in the receipt of JSY benefits”.	• Despite the fact that the majority of the females were aware of the JSY programme, participation in it was minimal. • There were significant district-by-district variances in receiving the benefits of the JSY

			scheme, particularly in Jharkhand. • Within the institutional delivery rate, there were significant pro-rich discrepancies in JSY receipt. • The delivery at a public clinic determined the observed poor-rich discrepancies within the receipt.
“Maternal Health Situation in Bihar and Madhya Pradesh: A Comparative Analysis of State Fact Sheets of National Family Health Survey (NFHS)-3 and 4” (Ranjit Kumar Dehury and Janmejaya Samal, 2016)	NFHS – 3&4 fact sheets of Bihar and MP	• “To assess the maternal health situation of Bihar and MP based on National Family Health Survey (NFHS-3) and 4 fact sheets”.	• Although Madhya Pradesh fared better than Bihar in terms of maternal health. • The state's overall performance was bad at all three levels.
“Are Young Mothers in India Deprived of Maternal Health Care Services? A Comparative Study of Urban and Rural Areas” (N. Kavitha, 2015)	NFHS-3 data	• “To study the effect of age of women at birth on the use of maternal health care services separately for urban and rural areas using data from the National Family Health Survey (NFHS)-3”.	• In both urban and rural sites, women who provided birth during adolescence were less likely to use maternal health facilities.
“Out-of-pocket Expenditure on Prenatal and Natal Care Post Janani	424 mothers who delivered recently from Rajasthan	• “To examine the variation in OOPE in accessing	• Variations in OOPE were determined by factors such as ANC location, type of

Suraksha Yojana: A Case From Rajasthan, India” (Dipti Govil et. al., 2016)		maternal health services” • “To examine the extent to which JSY incentives covered the burden of cost incurred”. • “To understand the differential and determinants of OOPE”.	birth, and delivery complication. • The OOPE public clinic charged US\$44 for a standard delivery and US\$145 for a complicated delivery. • JSY donated to 44, and you are responsible for the total delivery cost. You were bored with conventional delivery 77 times out of 100, and difficult delivery 23 times out of 100. • Factors such as a girl's educational level, her family's economic condition, and pregnancy problems were found to predict OOPE.
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Research Question:

- What is the current status of utilization of antenatal care services in the 22 states and Union Territories of India as per NFHS 4 AND 5 data?
- What is the association between full antenatal care and Women empowerment?

Objectives:

The following are the objectives of the study:

- To study the relationships between full antenatal care and Women empowerment.
- To make a comparative analysis of full ANC across states using NFHS 4 and 5 data
- To compare the progress of ANC indicators with other indicators of maternal health continuum.

3. METHODOLOGY

- **STUDY DESIGN:** Descriptive Study, based on desk review using secondary data derived from NFHS 4 & NFHS 5 factsheets. Since NFHS 5 has currently released the data for 22 States and Union Territories, only these have been taken into consideration for this analysis. In addition, review of appropriate research publications and reports was done to generate corroborative evidence and relationships.
- **DURATION OF STUDY:** Three months
- **DATA ANALYSIS PLAN:** Data analysis will be carried out using MS Excel and SPSS.
- **ETHICAL CONSIDERATIONS:** Deidentified respondent data available in the public domain has been used and therefore the risk of disclosure of personal information of the respondents is avoided.

IMPLICATIONS OF RESEARCH: Will help in giving insights on the comparative performance of States and progress in Antenatal care services

- Of all 22 states and Union Territories, the data was compared to one another (NFHS-4 and NFHS-5) for several maternal welfare indices. These were the indicators:
- Ante-Natal Care (ANC) administrations
- Women Empowerment

Comparison between Percent of women who had their last birth was protected against neonatal tetanus as per NFHS-5 and NFHS-4 facts sheet

Figure 3 displays the percent of women's distribution who were immunized against neonatal tetanus and given IFA doses for the stoppage of anemia. The women in Nagaland whose last birth was sheltered against neonatal tetanus has increased to 81.3 per cent in NFHS-5 from 63.7 per cent in NFHS-4, while in Sikkim it has been declined to 92 per cent in NFHS-5 from 97.2 in NFHS-4.

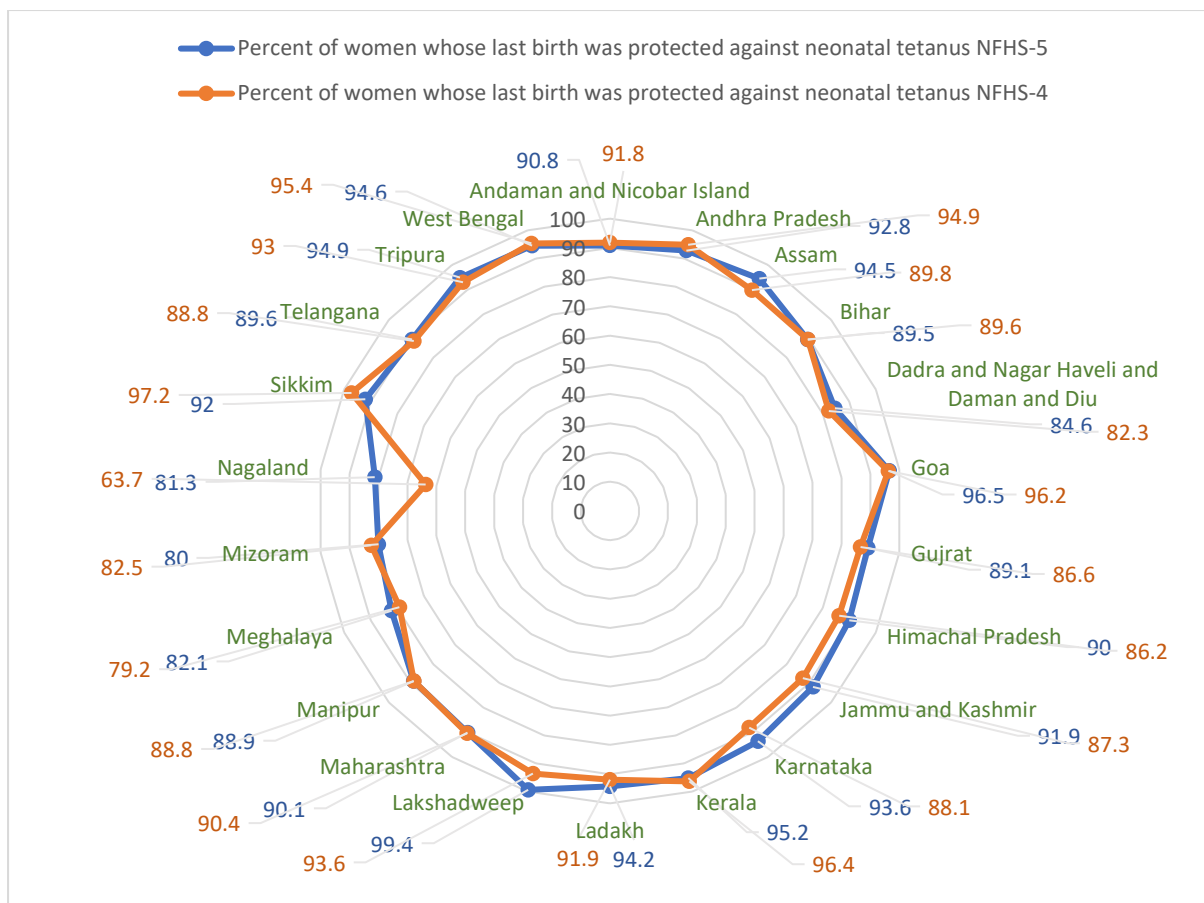


Figure 3: Percent of women who had their last birth was protected against neonatal tetanus

Comparison between Percent of women who had taken IFA for one hundred days when they have been pregnant as per NFHS-5 and NFHS-4 facts sheet

Figure 4 expressions are of percentage of women who nourished on IFA for one hundred days when they have been pregnant in Bihar and West Bengal has increased to 18 per cent and 62.5 per cent in NFHS-5 correspondingly that was folded from 9.7 and 28 per cent respectively in NFHS-5 where as in Ladakh it was reduced to 14.3 from 29.3 per cent in NFHS-5.

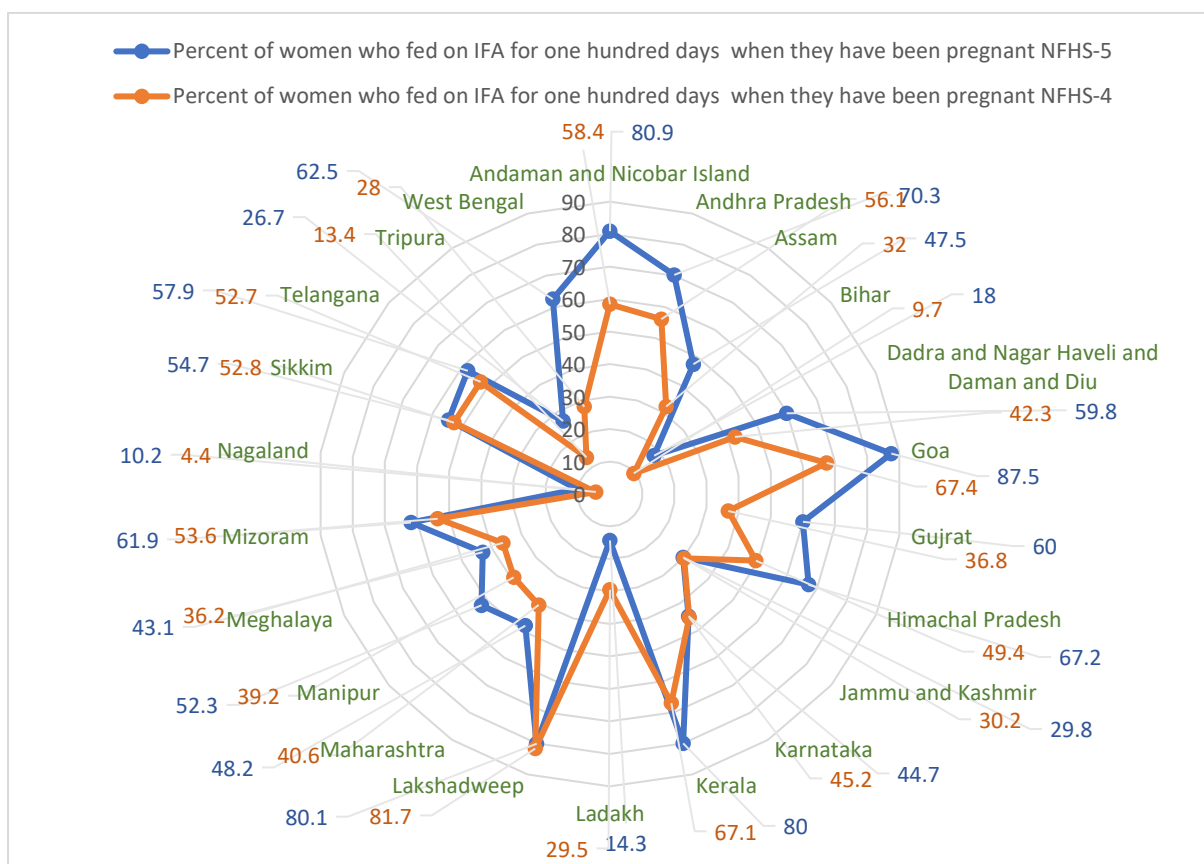


Figure 4: Percent of women who had taken IFA for one hundred days when they have been pregnant

Comparison between Percent of women who had taken IFA for one hundred eighty days when they have been pregnant as per NFHS-5 and NFHS-4 facts sheet

Figure 5 shows Percentage of women who had taken IFA for one hundred days when they have been pregnant in West Bengal has increased to 30 per cent in NFHS-5 that was 6 times higher than from NFHS-4 where as in Jammu and Kashmir and Karnataka it was decreased to 15.9 and 26.7 per cent from 16.7 and 32.6 per cent in NFHS-4 respectively.

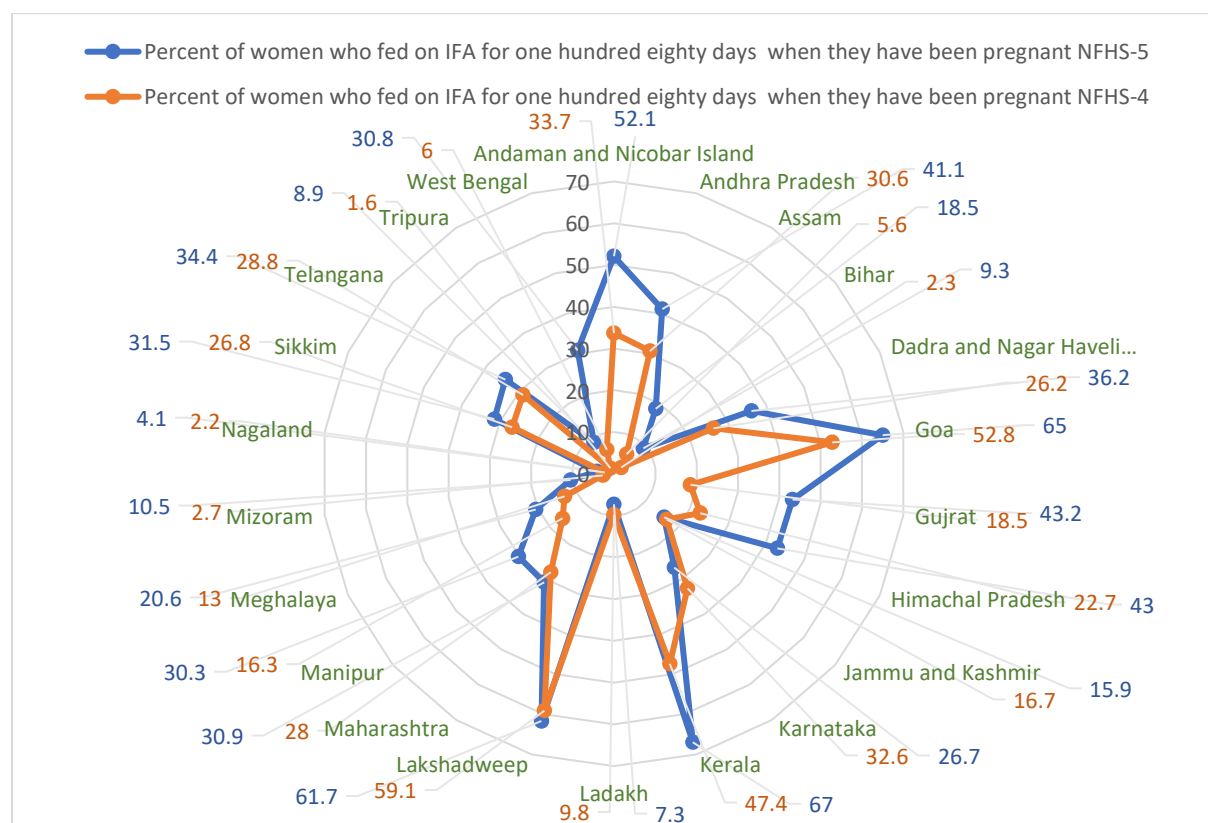


Figure 5: Percent of women had taken IFA for one hundred eighty days when they have been pregnant

Comparison between Percent distribution of registered mother getting the mother and Child protection (MCP) card as per NFHS-5 and NFHS-4 facts sheet

The Mother and Child Protection (MCP) card is chiefly envisioned for more rigorous nursing of maternal health. As a result, assessing the utilization of the MCP card in NFHS-4 data would assess record custody and care compliance. In Manipur it has amplified to 72.9 per cent in NFHS-5 from 32.8 per cent in NFHS-4 whereas in Lakshadweep it has lessened to 77.8 per cent in NFHS-4 from 96.3 per cent in NFHS-5. The data is shown in Figure 6.

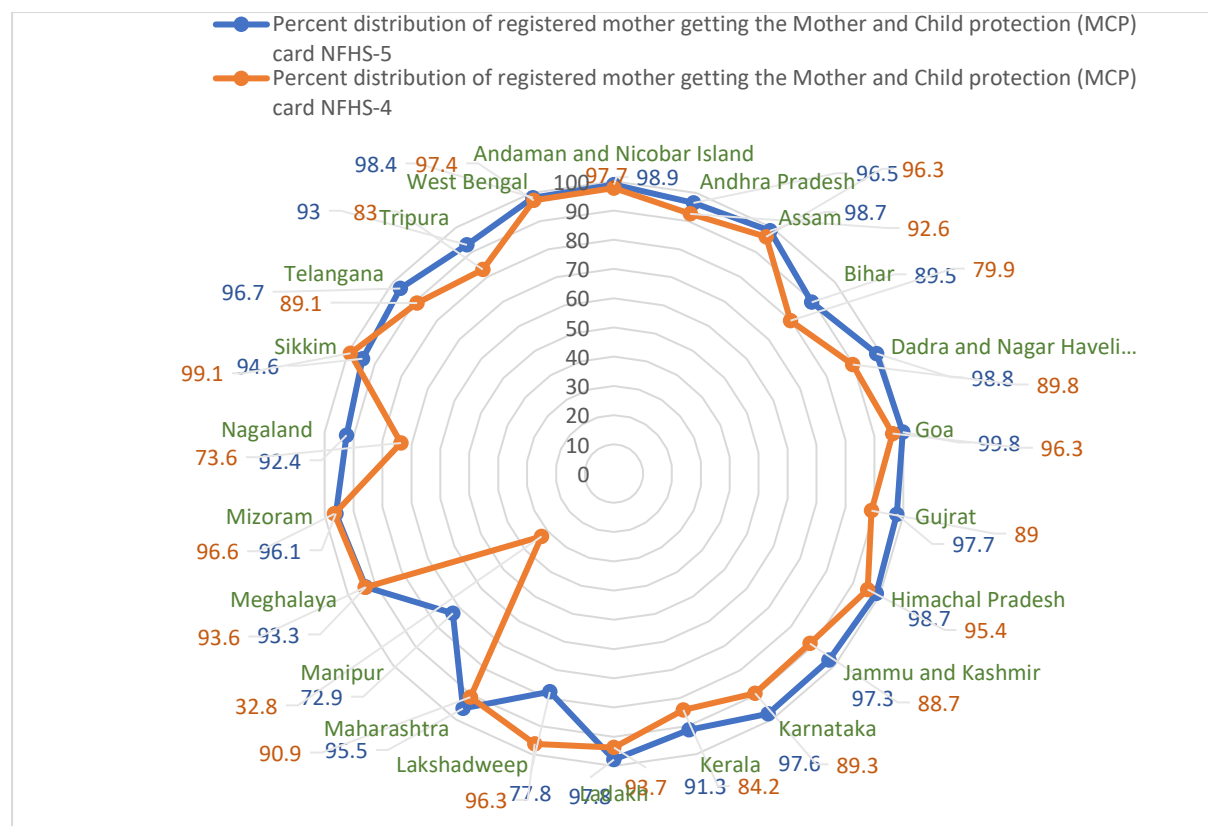


Figure 6: Percent distribution of registered mother getting the mother and Child protection (MCP) card

Comparison between Percent of women accepted postnatal care from any health personnel within two days of delivery as per NFHS-5 and NFHS-4 facts sheet

Accepting post-natal care during the first two days after delivery, according to Aspen, reduces maternal sadness and mortality. Figure 7 depicts the percentage of women who receive postnatal care. It shows that the percentage of women accepted postnatal care from any doctors or nurses within two days of delivery is greatest in both NFHS-4 and NFHS-5 in the state of Kerala.

Both Kerala and Bihar have reported improvements in postnatal care from doctors or nurses, moving from NFHS-5 to NFHS-4.

Despite this, about half of the women were denied early post-natal consideration.

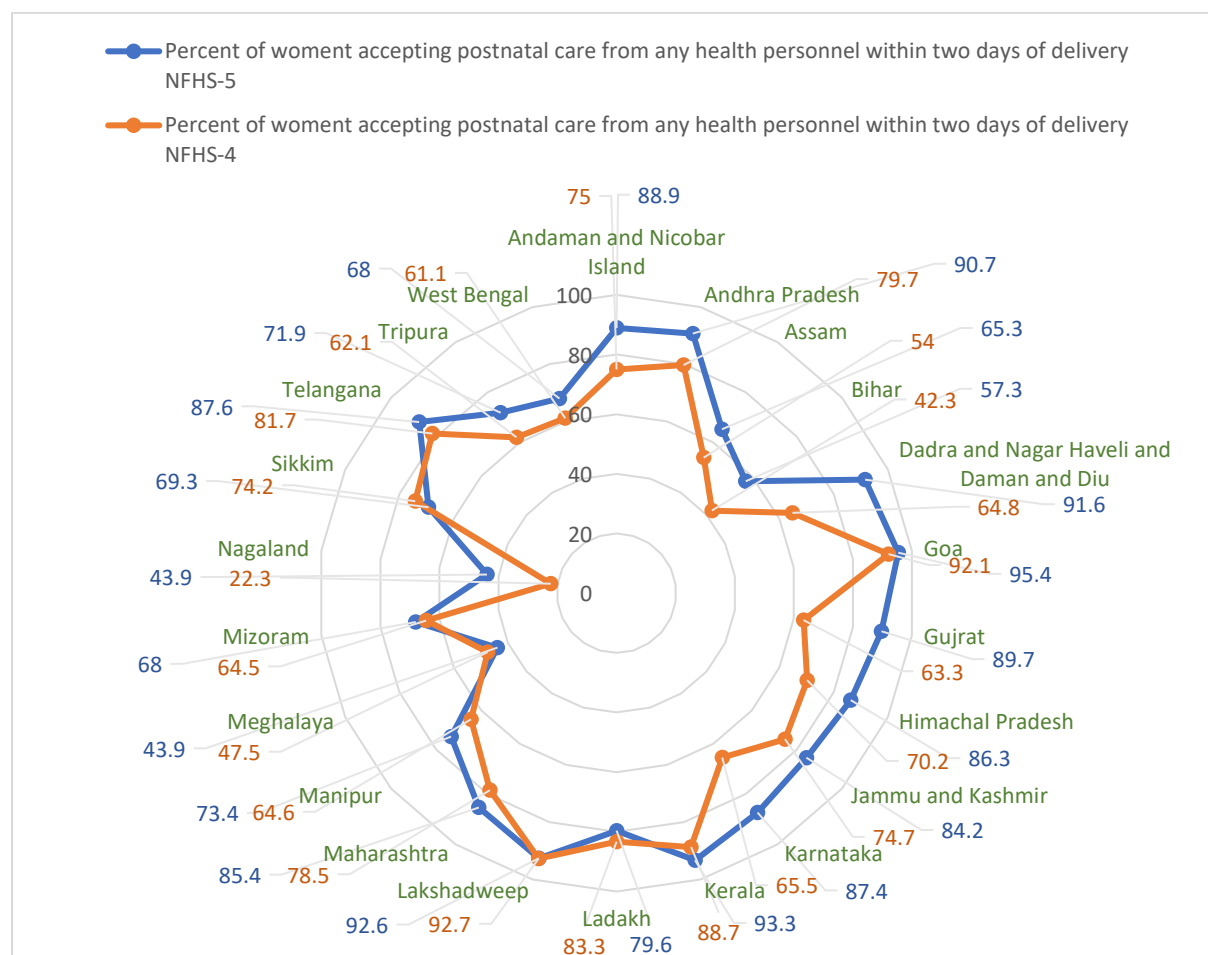


Figure 7: Percent of women accepting postnatal care from any health personnel within two days of delivery

Comparison between Percent of new born delivered at home who were taken to health facility for check-up within 24 hours of birth as per NFHS-5 and NFHS-4 facts sheet

Figure 8 depicts the percentage of newborns who are cared for by trained medical workers. In places like Assam and Bihar, only a small percentage of newborns delivered at home were sent to a health centre for an examination within 24 hours of birth. The growth is minute within NFHS-4 and NFHS-5 While it per cent doubled in Gujrat from 6.9 per cent in NFHS-5 from 3.7 per cent in NFHS-4 increased twice in Jammu and Kashmir, Telangana, Karnataka and approximately increased 5 times in Himachal Pradesh and in Tripura it improved from 0 per cent to 3.6 as per NFHS-5 as compared to NFHS-4. Within two days of delivery, a healthcare expert gives consideration. The NFHS-5 indicator Percent of new born receiving a health check-up after birth from a healthcare professional within two days of delivery and by skilled health care is a new addition. In Figure 8, you can see a point-by-point pattern.

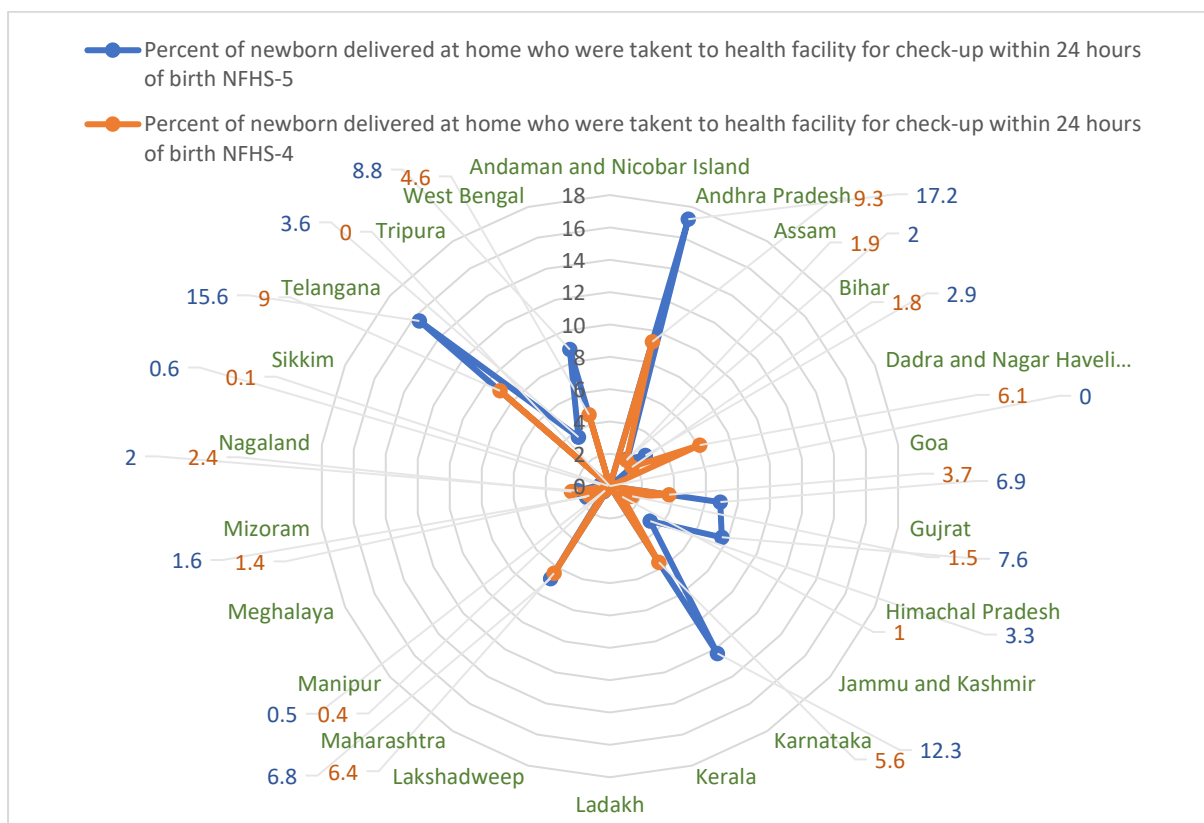


Figure 8: Percent of new born delivered at home who were taken to health facility for check-up within 24 hours of birth

Comparison between Percent of institutional deliveries as per NFHS-5 and NFHS-4 facts sheet

The percent distribution of delivery care is depicted in Figure 9. As noted in NFHS-5, institutional delivery has accelerated significantly in all 22 states and Union territories, in contrast to NFHS-4, which increased during the study period, the NFHS-4 and NFHS-5 data reports that Kerala was ahead in per cent of institutional deliveries among all 22 states and Union territories.

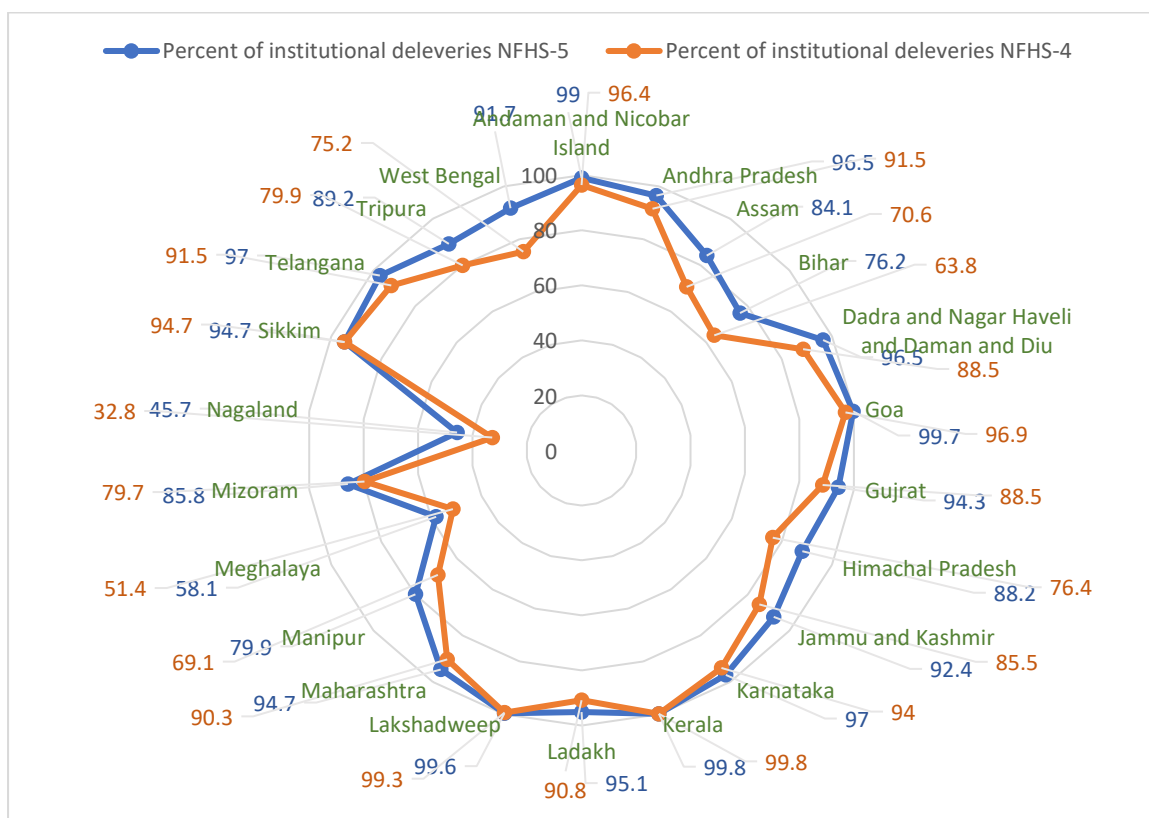


Figure 9: Percent of institutional deliveries

Comparison between Percent of institutional birth in public facilities as per NFHS-5 and NFHS-4 facts sheet

The information on per cent of official deliveries in public amenities presented the analogous pattern, in Kerala in both NFHS-4 and NFHS-5 data reports. The percentage of home distributions were wilted in all 22 states and Union Territories.

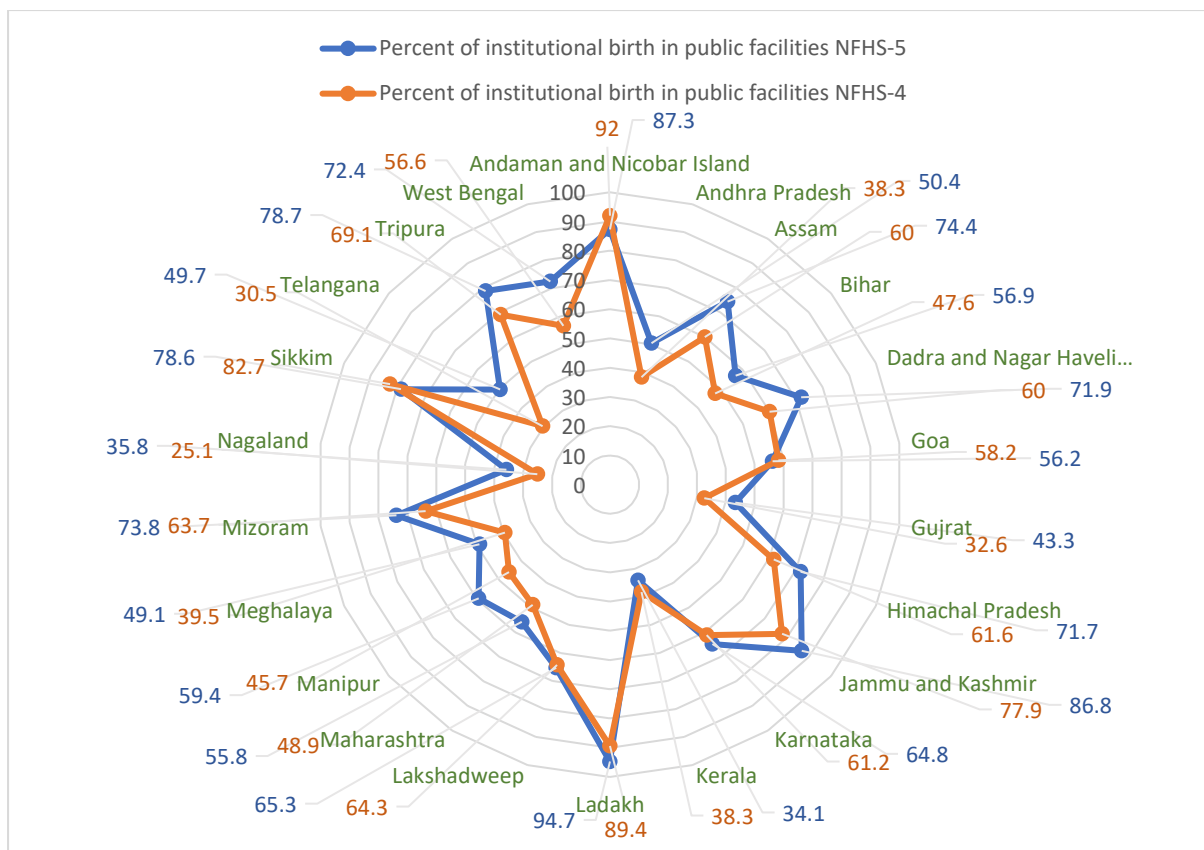


Figure 10: Percent of institutional birth in public facilities

Comparison between Percent of home deliveries conducted by skilled birth attendants as per NFHS-5 and NFHS-4 facts sheet

The percentage of home deliveries conducted by skilled birth attendants a decreased in percentage in most of the states in NFHS-5 as compared to NFHS-4.

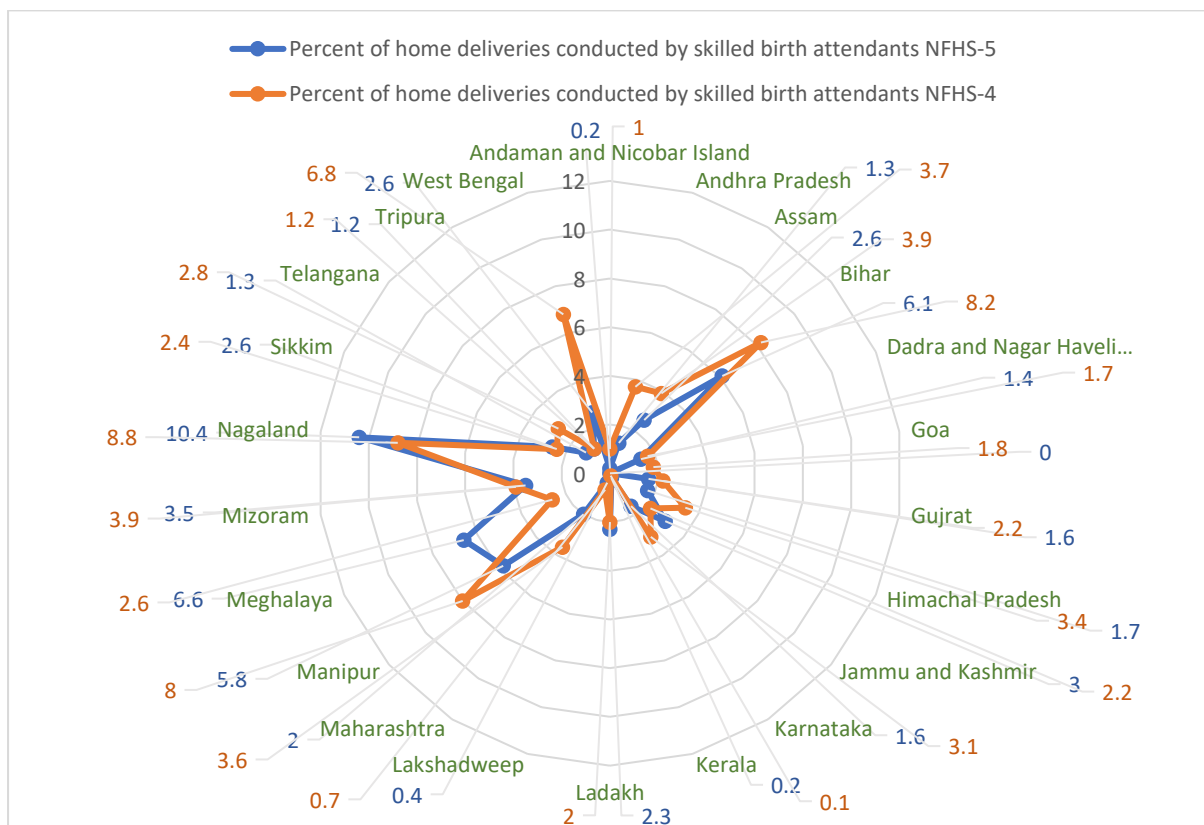


Figure 11: Percent of home deliveries conducted by skilled birth attendants

Comparison between Percent of births assisted by a health personnel as per NFHS-5 and NFHS-4 facts sheet

The percentage of deliveries assisted by health personnel showed a increased in most of the states in NFHS-5 as compared to NFHS-4.

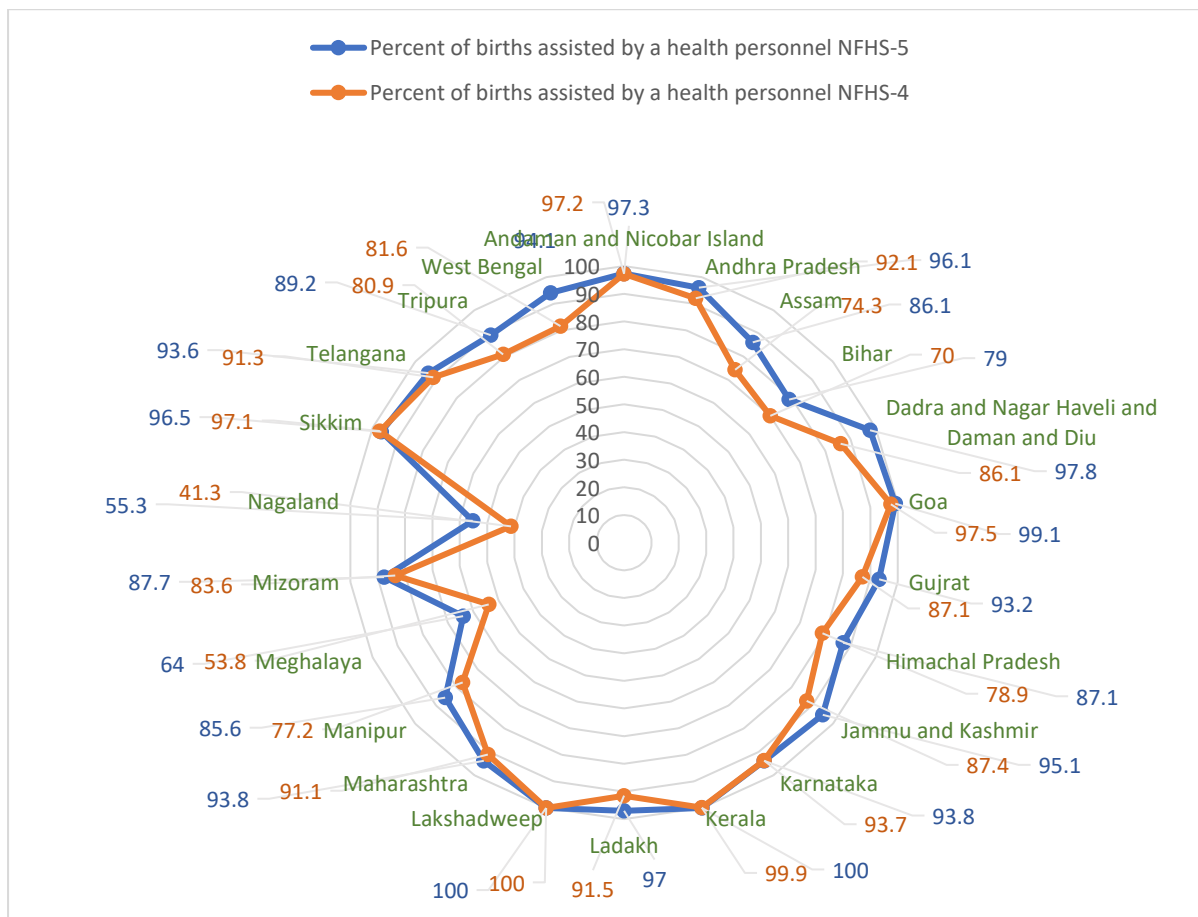


Figure 12: Percent of births assisted by a health personnel

Comparison between Percent of total caesarean section deliveries as per NFHS-5 and NFHS-4 facts sheet

The increase in the caesarean section deliveries in all 22 states and Union territories was very minimal.

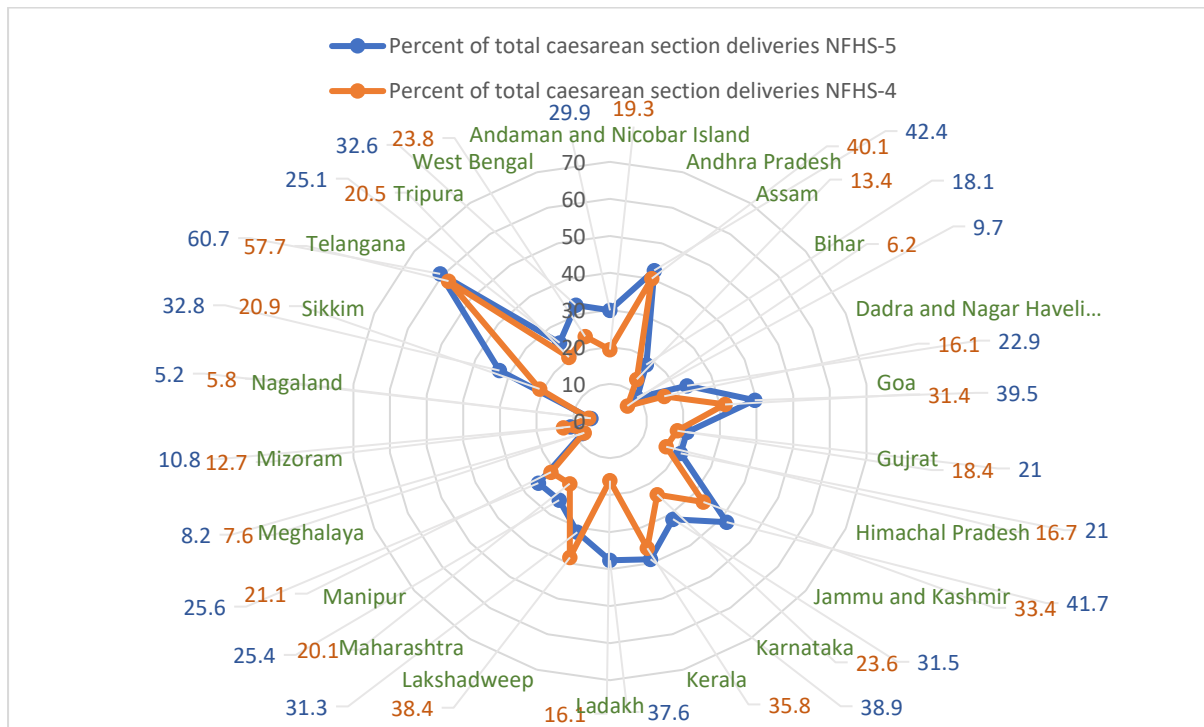


Figure 13: Percent of total caesarean section deliveries

Comparison between Percent of caesarean section in private facilities as per NFHS-5 and NFHS-4 facts sheet; Comparison between Percent of caesarean section public health facilities as per NFHS-5 and NFHS-4 facts sheet

The number of caesarean section deliveries increased just slightly in all 22 states and territories. When CS deliveries for private and public health facilities were analysed, it was shown that in all 22 states and Union territories, CS deliveries increased from NFHS-4 to NFHS-5 in both private and public health facilities. Figures 12.a and 12.b show the pattern in further detail.

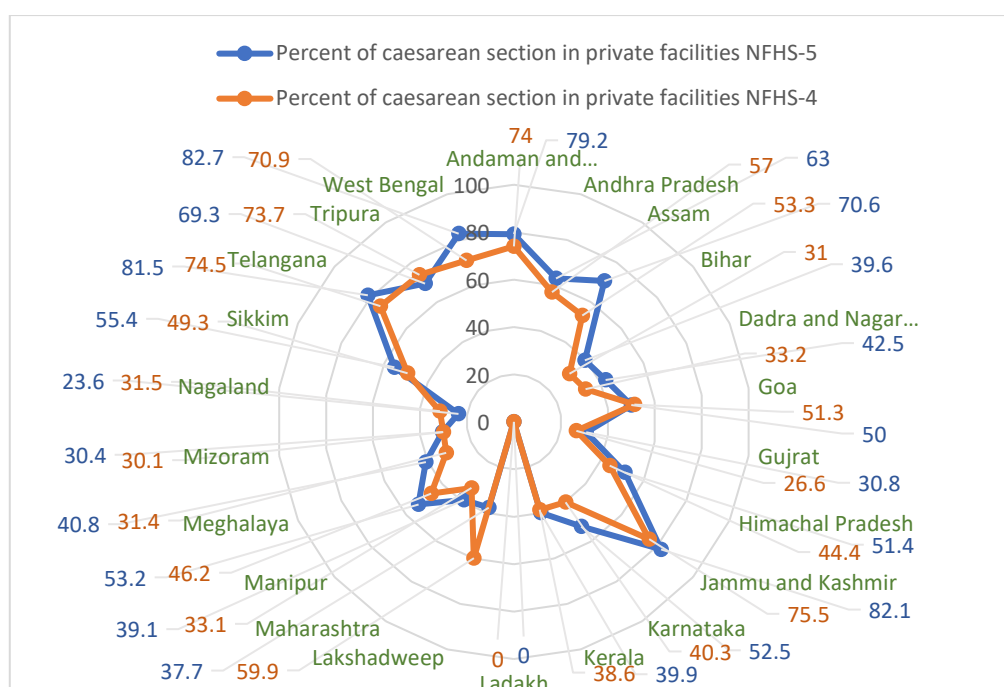


Figure 14.a: Percent of caesarean section in private facilities

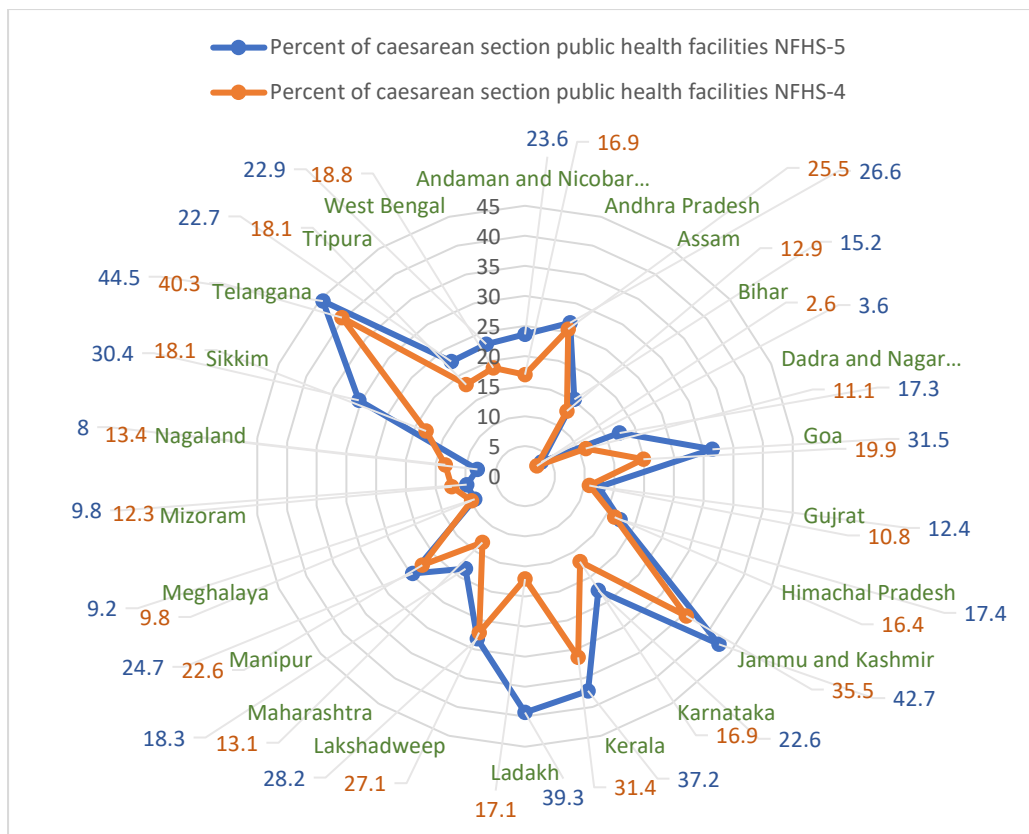


Figure 14.b: Percent of caesarean section public health facilities

Table 2: Full antenatal care of NFHS-5 and NFHS-4

Full antenatal care NFHS-5 and NFHS-4								
	Women having at least 4 antenatal care visits		Percent of women whose last birth was protected against neonatal tetanus		Percent of women who had taken IFA for one hundred days when they have been pregnant		average (Full antenatal care %)	
	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4
Andaman and Nicobar Island	83.4	92.1	90.8	91.8	80.9	58.4	85.03	80.77
Andhra Pradesh	67.5	76.3	92.8	94.9	70.3	56.1	76.87	75.77
Assam	50.7	46.4	94.5	89.8	47.5	32	64.23	56.07
Bihar	25.2	14.4	89.5	89.6	18	9.7	44.23	37.90
Dadra and Nagar Haveli and Daman and Diu	86.2	71.9	84.6	82.3	59.8	42.3	76.87	65.50
Goa	93	89	96.5	96.2	87.5	67.4	92.33	84.20
Gujarat	76.9	70.5	89.1	86.6	60	36.8	75.33	64.63
Himachal Pradesh	70.3	69.1	90	86.2	67.2	49.4	75.83	68.23
Jammu and Kashmir	80.9	81.2	91.9	87.3	29.8	30.2	67.53	66.23
Karnataka	70.9	70.1	93.6	88.1	44.7	45.2	69.73	67.80
Kerala	78.6	90.1	95.2	96.4	80	67.1	84.60	84.53
Ladakh	78.4	87.5	94.2	91.9	14.3	29.5	62.30	69.63
Lakshadweep	88.3	82.3	99.4	93.6	80.1	81.7	89.27	85.87
Maharashtra	70.3	72.2	90.1	90.4	48.2	40.6	69.53	67.73
Manipur	79.4	69	88.9	88.8	52.3	39.2	73.53	65.67
Meghalaya	52.2	50	82.1	79.2	43.1	36.2	59.13	55.13
Mizoram	58	61.4	80	82.5	61.9	53.6	66.63	65.83
Nagaland	20.7	15	81.3	63.7	10.2	4.4	37.40	27.70
Sikkim	58.4	74.7	92	97.2	54.7	52.8	68.37	74.90
Telangana	70.4	74.9	89.6	88.8	57.9	52.7	72.63	72.13
Tripura	52.7	64.3	94.9	93	26.7	13.4	58.10	56.90
West Bengal	75.8	76.4	94.6	95.4	62.5	28	77.63	66.60

Below 50% : Red , 50-69 :% Orange , 70-84% :yellow , 85+% : green

In Table 1 Average of women having at least 4 antenatal care visits, Percent of women whose last birth was protected against neonatal tetanus, Percent of women who had taken IFA for one hundred days when they were pregnant was taken to take out full antenatal care.

Table 3: Composite data of women empowerment NFHS-5

composite data of women empowerment NFHS-5									
States	Women who are literate (%)	25%	Currently married women who usually participate in three household decisions (%)	25%	Women having a bank or savings account that they themselves use (%)	25%	Women having a mobile phone that they themselves use (%)	25%	100%
Andaman and Nicobar Island	86	21.5	94.5	23.625	89.2	22.3	80.8	20.2	87.63
Andhra Pradesh	68.6	17.15	84.1	21.025	81.8	20.45	48.9	12.225	70.85
Assam	84.3	21.075	92.1	23.025	78.5	19.625	57.2	14.3	78.03
Bihar	57.8	14.45	86.5	21.625	76.7	19.175	51.4	12.85	68.1
Dadra and Nagar Haveli and Diu	93.4	23.35	91.9	22.975	83.6	20.9	60.5	15.125	82.35
Goa	93	23.25	93.1	23.275	88.3	22.075	91.2	22.8	91.4
Gujarat	76.5	19.125	92.2	23.05	70	17.5	48.8	12.2	71.88
Karnataka	91.7	22.925	93.9	23.475	83.1	20.775	79.5	19.875	87.05
Jammu and Kashmir	77.3	19.325	81.6	20.4	84.9	21.225	75.2	18.8	79.75
Karnataka	76.7	19.175	82.7	20.675	88.7	22.175	61.8	15.45	77.48
Kerala	98.3	24.575	94.1	23.525	78.5	19.625	86.6	21.65	89.38
Ladakh	76.8	19.2	80.4	20.1	88.4	22.1	81.2	20.3	81.7
Lakshadweep	96.5	24.125	92.2	23.05	66.9	16.725	84	21	84.9
Maharashtra	84.6	21.15	89.8	22.45	72.8	18.2	54.8	13.7	75.5
Manipur	87.6	21.9	94.8	23.7	74	18.5	72.2	18.05	82.15
Meghalaya	88.2	22.05	92.3	23.075	70.4	17.6	67.5	16.875	79.6
Mizoram	94.4	23.6	98.8	24.7	80.7	20.175	82.3	20.575	89.05
Nagaland	85.8	21.45	99.2	24.8	63.7	15.925	82.5	20.625	82.8
Sikkim	88.9	22.225	89.7	22.425	76.4	19.1	88.6	22.15	85.9
Telangana	66	16.5	87.2	21.8	84.4	21.1	60	15	74.4
Tripura	80.6	20.15	90.9	22.725	76.9	19.225	53.1	13.275	75.38
West Bengal	76.1	19.025	88.9	22.225	76.5	19.125	50.1	12.525	72.9

In Table 3 Proportionate of 25% each were taken of NFHS-5 Women who are literate4 (%), Currently married women who usually participate in three household decisions25 (%), Women having a bank or savings account that they themselves use (%), Women having a mobile phone that they themselves use (%) for Composite data of women empowerment NFHS-5.

Table 4: Composite data of women empowerment NFHS-4

composite data of women empowerment NFHS-4									
States	Women who are literate4 (%)	25%	married women who usually	25%	having a bank or savings	25%	having a mobile phone	25%	100%
Andaman and Nicobar Island	84.1	21.025	92.6	23.15	81.8	20.45	66.9	16.725	81.35
Andhra Pradesh	62.9	15.725	79.9	19.975	66.3	16.575	36.2	9.05	61.33
Assam	63	15.75	87.4	21.85	45.4	11.35	46	11.5	60.45
Bihar	37	9.25	75.2	18.8	26.4	6.6	40.9	10.225	44.88
Dadra and Nagar Haveli and Daman and Diu	83.1	20.775	81.5	20.375	46.5	11.625	46	11.5	64.28
Goa	83.6	20.9	93.8	23.45	82.8	20.7	80.9	20.225	85.28
Gujarat	63.8	15.95	85.4	21.35	48.6	12.15	47.9	11.975	61.43
Himachal	79.5	19.875	90.8	22.7	68.8	17.2	73.9	18.475	78.25
Jammu and Kashmir	53.9	13.475	84	21	60	15	53.9	13.475	62.95
Karnataka	59.7	14.925	80.4	20.1	59.4	14.85	47.1	11.775	61.65
Kerala	93	23.25	92.1	23.025	70.6	17.65	81.2	20.3	84.23
Ladakh	74	18.5	87.6	21.9	75.9	18.975	71.2	17.8	77.18
Lakshadweep	95.6	23.9	82.1	20.525	74.4	18.6	64.9	16.225	79.25
Maharashtra	70.3	17.575	89.3	22.325	45.3	11.325	45.6	11.4	62.63
Manipur	72.6	18.15	96.2	24.05	34.8	8.7	63.1	15.775	66.68
Meghalaya	69.5	17.375	91.4	22.85	54.4	13.6	64.3	16.075	69.9
Mizoram	94	23.5	96	24	57.1	14.275	77	19.25	81.03
Nagaland	75.2	18.8	97.4	24.35	38.8	9.7	70.4	17.6	70.45
Sikkim	72.3	18.075	95.3	23.825	63.5	15.875	79.8	19.95	77.73
Telangana	65.5	16.375	81	20.25	59.5	14.875	47.4	11.85	63.35
Tripura	68.5	17.125	91.7	22.925	59.2	14.8	43.9	10.975	65.83
West Bengal	58.8	14.7	89.9	22.475	43.5	10.875	41.8	10.45	58.5

In Table 4 Proportionate of 25% each were taken of NFHS-4 Women who are literate4 (%), Currently married women who usually participate in three household decisions25 (%), Women having a bank or savings account that they themselves use (%), Women having a mobile phone that they themselves use (%) for Composite data of women empowerment NFHS-4.

Table 5: Correlation between women empowerment composite index and other maternal health indicators as per NFHS-5 and NFHS-4 facts sheet

NFHS Correlations																					
		Women Empowerment Composite Index		Women Who had Full ANC during First Trimester		Women Having at least 4 ANC during Pregnancy		Proportion of Women who fed on IFA for 100 days during their pregnancy		Proportion of Institutional Deliveries		Women age 15-24 years who use hygienic methods of protection during their menstrual period		Pregnant women age 15-49 years who are anaemic - NFHS 5		Proportion of ever-married women age 18-49 years who have experienced physical violence during any pregnancy - NFHS 5		Proportion of Women having Full ANC - NFHS 5		Percent of women accepted PNC from any health personnel within two days of delivery	
		NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4
Women Empowerment Composite Index	Pearson Correlation	1	1	0.192	.465*	0.344	.507*	.428*	.561**	0.1	-.566**	.647**	0.304	-.553**	.794**	-.584**	-.637**	0.398	.536*	0.191	.472*
	Sig. (2-tailed)			0.392	0.029	0.117	0.016	0.047	0.007	0.657	0.006	0.001	0.169	0.008	0.00	0.004	0.001	0.067	0.01	0.396	0.027
Women Who had Full ANC during First Trimester	Pearson Correlation	0.192	.465*	1	1	.786**	.882**	.500*	.785**	.717**	0.064	.533*	.842**	-0.07	.558**	-0.09	-0.17	.711**	.914**	.784**	.939**
	Sig. (2-tailed)	0.392	0.029			0.00	0.00	0.018	0.00	0.00	0.777	0.011	0.00	0.77	0.007	0.696	0.456	0.00	0.00	0.00	0.00
Women Having at least 4 ANC during Pregnancy	Pearson Correlation	0.344	.507*	.786**	.882**	1	1	.664**	.702**	.772**	0.056	.600**	.848**	0.043	.538**	0.031	-0.09	.902**	.934**	.829**	.896**
	Sig. (2-tailed)	0.117	0.016	0.00	0.00			0.001	0.00	0.00	0.804	0.003	0.00	0.848	0.01	0.893	0.683	0.00	0.00	0.00	0.00
Proportion of Women who fed on IFA for 100 days during their pregnancy	Pearson Correlation	.428*	.561**	.500*	.785**	.664**	.702**	1	1	.583**	0.07	.699**	.719**	-0.28	.796**	-0.09	-0.12	.910**	.892**	.634**	.799**
	Sig. (2-tailed)	0.047	0.007	0.018	0.00	0.001	0.00			0.004	0.757	0.00	0.00	0.208	0.00	0.693	0.586	0.00	0.00	0.002	0.00
Proportion of Institutional Deliveries	Pearson Correlation	0.1	-.566**	.717**	0.064	.772**	0.056	.583**	0.07	1	1	.492*	0.191	0.264	-0.19	0.195	.746**	.774**	0.065	.893**	0.088
	Sig. (2-tailed)	0.657	0.006	0.00	0.777	0.00	0.804	0.004	0.757			0.02	0.394	0.235	0.388	0.383	0.00	0.00	0.776	0.00	0.697
Women age 15-24 years who use hygienic methods of protection during their menstrual period	Pearson Correlation	.647**	0.304	.533*	.842**	.600**	.848**	.699**	.719**	.492*	0.191	1	1	-0.41	0.401	-0.11	0.078	.696**	.886**	.603**	.907**
	Sig. (2-tailed)	0.001	0.169	0.011	0.00	0.003	0.00	0.00	0.00	0.02	0.394			0.057	0.064	0.639	0.73	0.00	0.00	0.003	0.00
Pregnant women age 15-49 years who are anaemic	Pearson Correlation	-.553**	.794**	-0.07	.558**	0.043	.538**	-0.28	.796**	0.264	-0.19	-0.41	0.401	1	1	0.376	-0.32	-0.118	.644**	0.072	.542**
	Sig. (2-tailed)	0.008	0.00	0.77	0.007	0.848	0.01	0.208	0.00	0.235	0.388	0.057	0.064			0.085	0.153	0.601	0.001	0.749	0.009
Proportion of ever-married women age 18-49 years who have experienced physical violence during any	Pearson Correlation	-.584**	-.637**	-0.09	-0.17	0.031	-0.09	-0.09	-0.12	0.195	.746**	-0.11	0.078	0.376	-0.32	1	1	-0.031	-0.095	0.122	-0.12
	Sig. (2-tailed)	0.004	0.001	0.696	0.456	0.893	0.683	0.693	0.586	0.383	0.00	0.639	0.73	0.085	0.153			0.891	0.674	0.588	0.583
Proportion of Women having Full ANC	Pearson Correlation	0.398	.536*	.711**	.914**	.902**	.934**	.910**	.892**	.774**	0.065	.696**	.886**	-0.12	.644**	-0.03	-0.1	1	1	.815**	.942**
	Sig. (2-tailed)	0.067	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.776	0.00	0.00	0.601	0.001	0.891	0.674			0.00	0.00
Percent of women accepting PNC from any health personnel within two days of delivery	Pearson Correlation	0.191	.472*	.784**	.939**	.829**	.896**	.634**	.799**	.893**	0.088	.603**	.907**	0.072	.542**	0.122	-0.12	.815**	.942**	1	1
	Sig. (2-tailed)	0.396	0.027	0.00	0.00	0.00	0.00	0.002	0.00	0.00	0.697	0.003	0.00	0.749	0.009	0.588	0.583	0.00	0.00		
*. Correlation is significant at the 0.05 level (2-tailed).																					
**. Correlation is significant at the 0.01 level (2-tailed).																					
Note:			Significant Positive Correlation																		
			Significant Negative Correlation																		

Table 5 shows Correlation between women empowerment composite index and other maternal health indicators as per NFHS-5 and NFHS-4 facts sheet where Correlation is significant at or below 0.05 level. Significant Positive correlation is marked with green and Negative correlation with red color

Comparison between full antenatal care and composite data index of women empowerment NFHS-5 and NFHS-4

Figure 13 shows Comparison between full antenatal care and composite data index of women empowerment NFHS-5 and NFHS-4. As per NFHS-4 states and Union Territories like Gujrat, Andhra Pradesh, West Bengal along with Lakshadweep, Telangana, Karnataka, Maharashtra, Jammu and Kashmir, and Daman and Diu percent of full antenatal was higher than that of Composite data index of women empowerment while in NFHS-5 states like Gujrat, Andhra Pradesh, West Bengal is percent of full antenatal is higher than that of Composite data index of women empowerment.

As per Pearson correlation it is positively corelated in NFHS-4 with significance value 0.01 whereas in NFHS-5 significance value is more than 0.05.

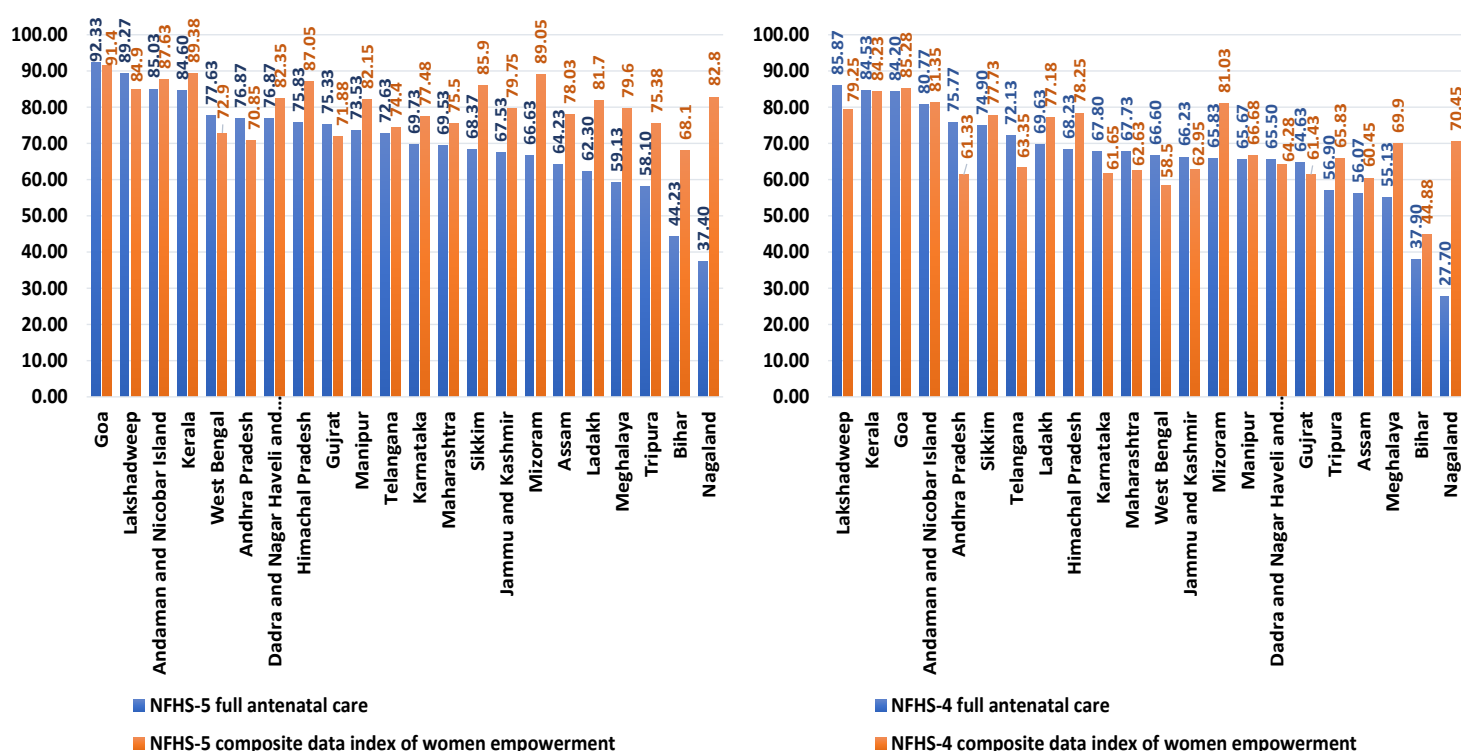


Figure 15: Comparison between full antenatal care and composite data index of women empowerment NFHS-5 and NFHS-4

Comparison between full antenatal care and Percent of Women age 15-24 years who use hygienic methods of protection during their menstrual period26 (%) NFHS-5 and NFHS-4

Figure 14 Comparison between full antenatal care and Women age 15-24 years who use hygienic methods of protection during their menstrual period26 (%) NFHS-5 and NFHS-4. As per NFHS-4 states and Union Territories like Andhra Pradesh, Ladakh, West Bengal, Tripura Assam, percent of full antenatal was higher than that of Percent of Women age 15-24 years who took hygienic methods of protection during their menstrual period while in NFHS-5 only in Gujrat has percent of full antenatal is higher than that of Percent of Women age 15-24 years who took hygienic methods of protection during their menstrual period.

As per Pearson correlation it is positively corelated in NFHS-4 and NFHS-5 with significance value 0.00.

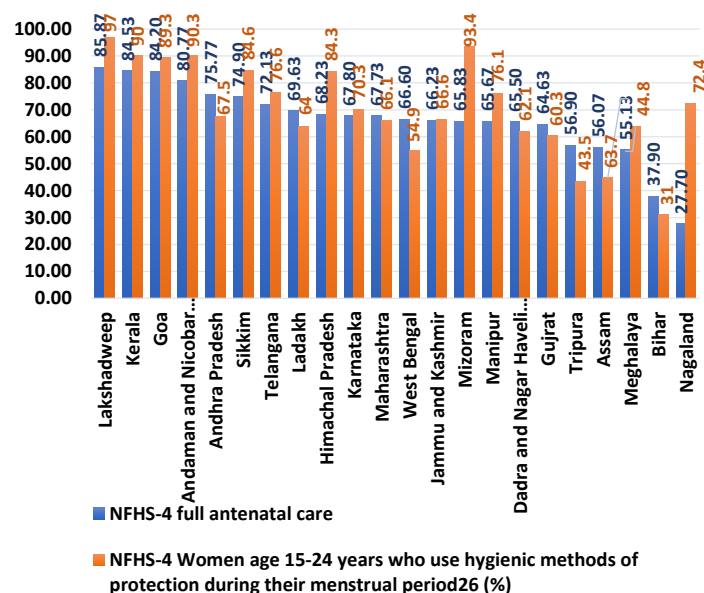
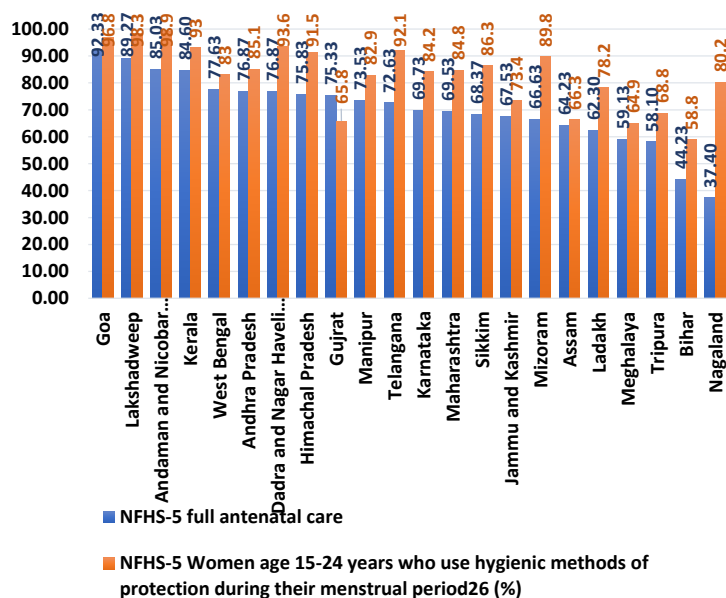


Figure 16: Comparison between full antenatal care and Women age 15-24 years who use hygienic methods of protection during their menstrual period26 (%) NFHS-5 and NFHS

Comparison between full antenatal care and Percent of women accepted postnatal care from any health personnel within two days of delivery NFHS-5 and NFHS-4

Figure 15 Comparison between full antenatal care and Percent of women accepted postnatal care from any health personnel within two days of delivery NFHS-5 and NFHS-4. As per NFHS-4 states and Union Territories like Karnataka, West Bengal, Mizoram, Manipur, Daman and Diu, percent of full antenatal is higher than that of Percent of women accepting postnatal care from any health personnel within two days of delivery while in NFHS-5 in the percentage of women receiving full prenatal care in Meghalaya and West Bengal is higher than the percentage of women accepted postnatal care from any health personnel within two days of delivery.

As per Pearson correlation it is positively correlated in NFHS-4 and NFHS-5 with significance value 0.00.

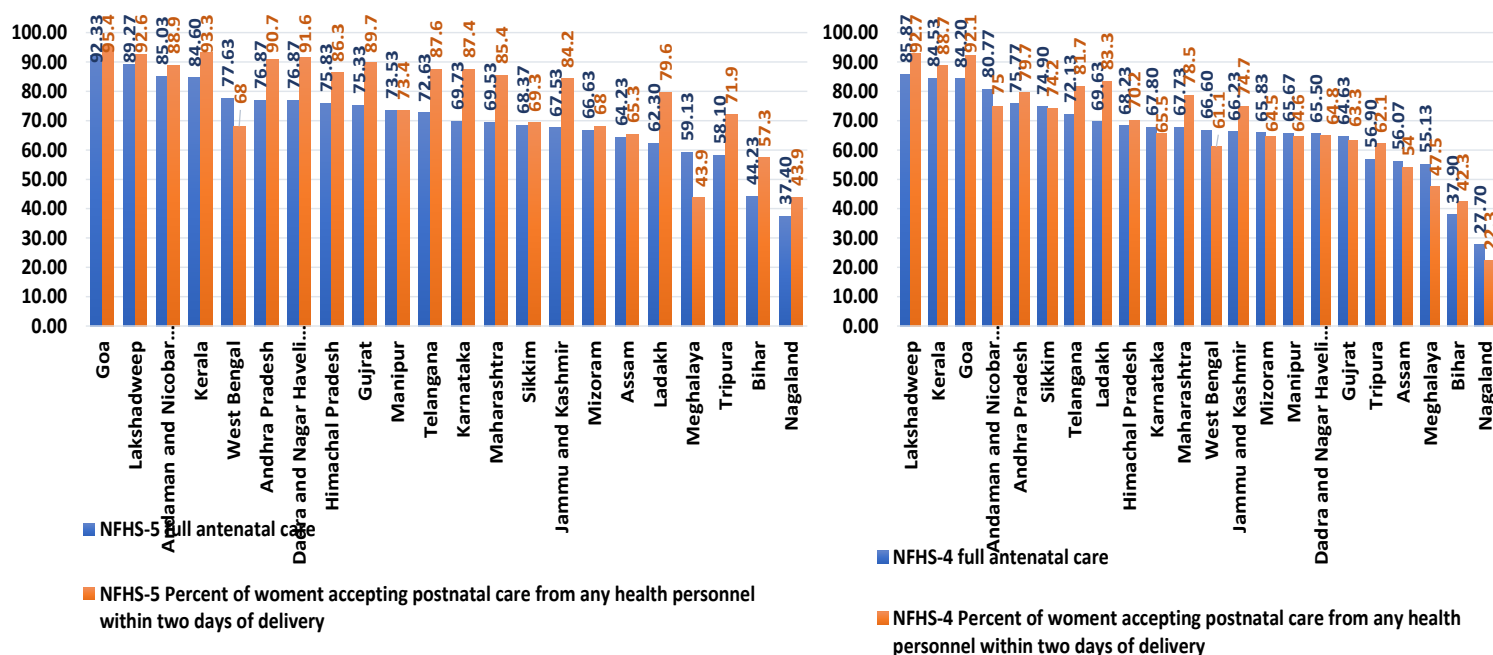


Figure 17: Comparison between full antenatal care and Percent of women accepting postnatal care from any health personnel within two days of delivery NFHS-5 and NFHS-4

Comparison between full antenatal care and Percent of institutional deliveries NFHS-5 and NFHS-4

Figure 16 Comparison between full antenatal care and Percent of institutional deliveries NFHS-5 and NFHS-4. As per NFHS-4 and NFHS-5 in all 22 states and Union Territories percent of full antenatal is lower than that of Percent of institutional deliveries.

As per Pearson correlation it is positively correlated in NFHS-5 with significance value 0.00 whereas in NFHS-4 significance value is more than 0.05.

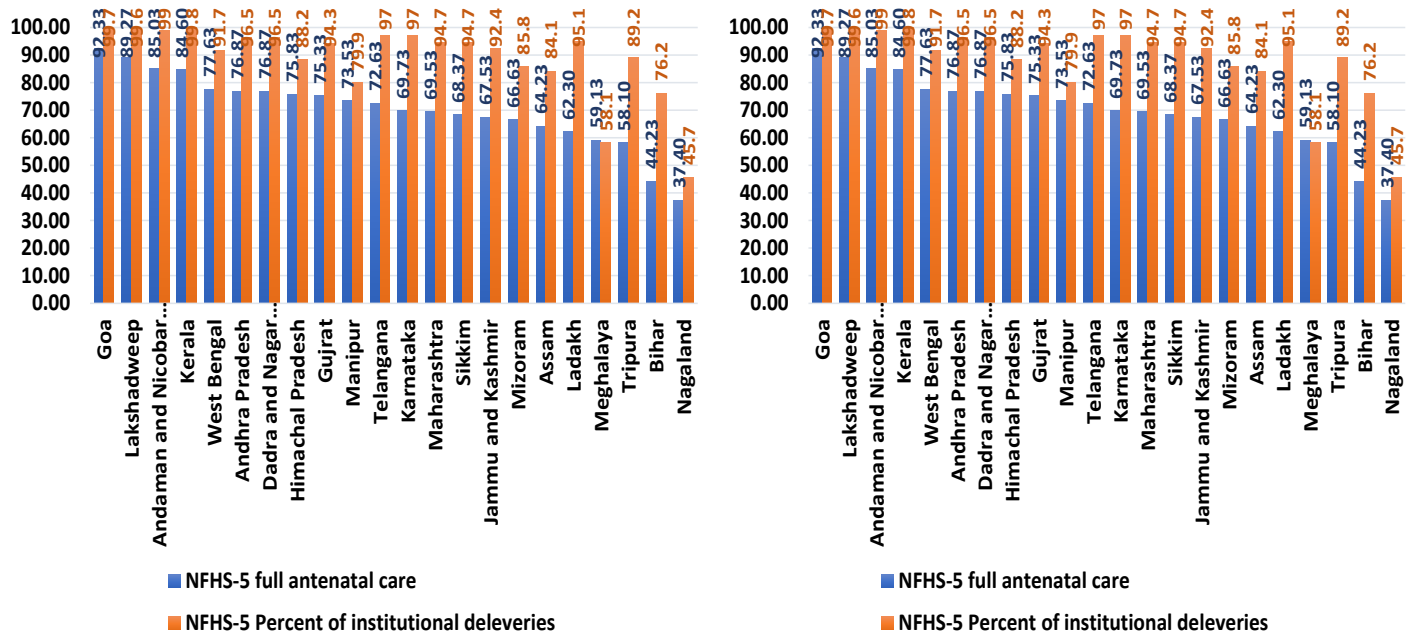


Figure 18: Comparison between full antenatal care and Percent of institutional deliveries NFHS-5 and NFHS-4

Comparison between composite data index of women empowerment and Percent of Women having full antenatal check-up in the first trimester NFHS-5 and NFHS-4

Figure 18 Comparison between composite data index of women empowerment and Percent of Women having full antenatal check-up in the first trimester NFHS-5 and NFHS-4. As per NFHS-4 states and Union Territories like Goa, Andaman Nicobar, Mizoram, Himachal Pradesh, Sikkim, Nagaland, Meghalaya, Assam, West Bengal, Bihar had higher percent of composite data index of women empowerment than Percent of Women having full antenatal check-up in the first trimester while in NFHS-5 states and Union Territories like Goa, Andaman Nicobar, Mizoram, Himachal Pradesh, Sikkim, Nagaland, Manipur, Meghalaya, Assam, Karnataka, Maharashtra, Tripura, Bihar has higher percent of composite data index of women empowerment than Percent of Women having full antenatal check-up in the first trimester.

As per Pearson correlation it is positively correlated in NFHS-4 with significance value 0.029 whereas in NFHS-5 significance value is more than 0.05

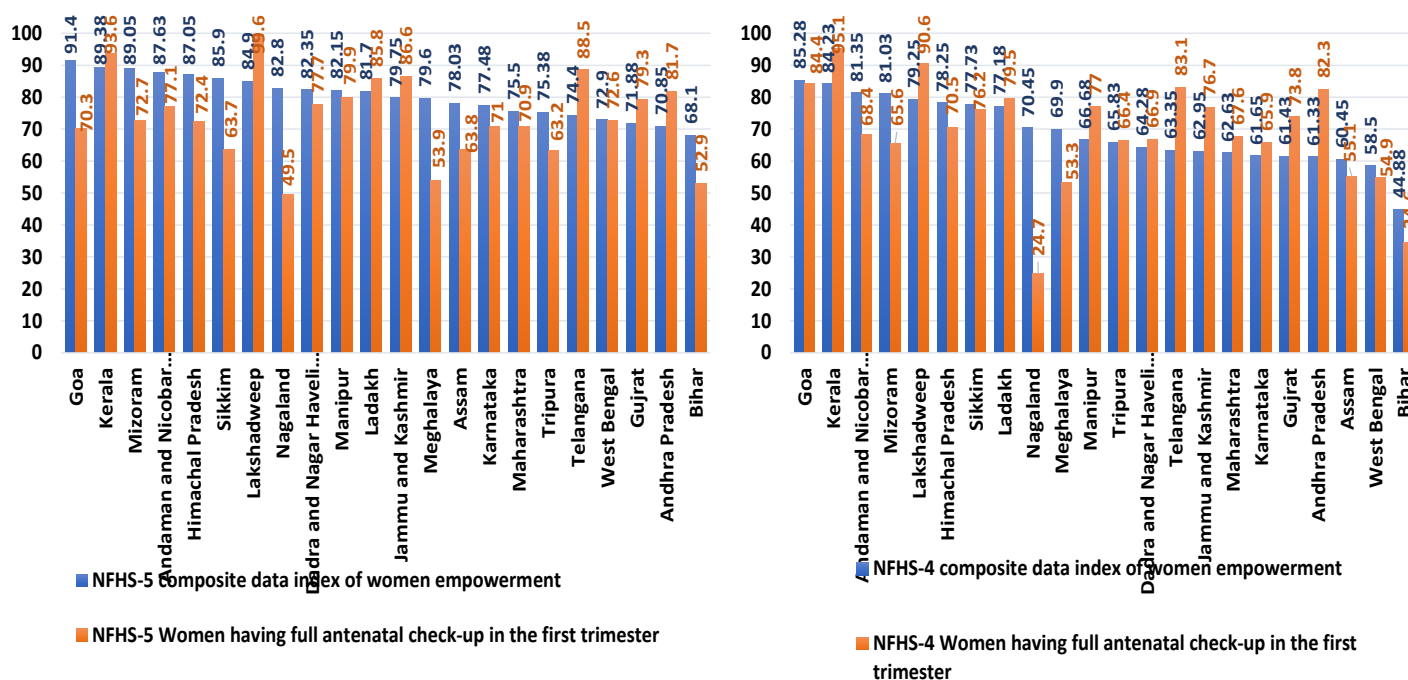


Figure 19: Comparison between composite data index of women empowerment and Percent of Women having full antenatal check-up in the first trimester NFHS-5 and NFHS-4

Comparison between composite data index of women empowerment and Percent of women who had taken IFA for one hundred days when they have been pregnant NFHS-5 and NFHS-4

Figure 19 composite data index of women empowerment and Percent of women who fed on IFA for one hundred days when they have been pregnant NFHS-5 and NFHS-4. As per NFHS-4 in all 22 states and Union Territories except Lakshadweep composite data index of women empowerment was higher than Percent of women who fed on IFA for one hundred days when they have been pregnant while as per NFHS-5 in all 22 states and Union Territories composite data index of women empowerment is higher than Percent of women who fed on IFA for one hundred days when they have been pregnant.

As per Pearson correlation it is positively correlated in NFHS-4 and NFHS-5 with significance value 0.007 and 0.047 respectively.

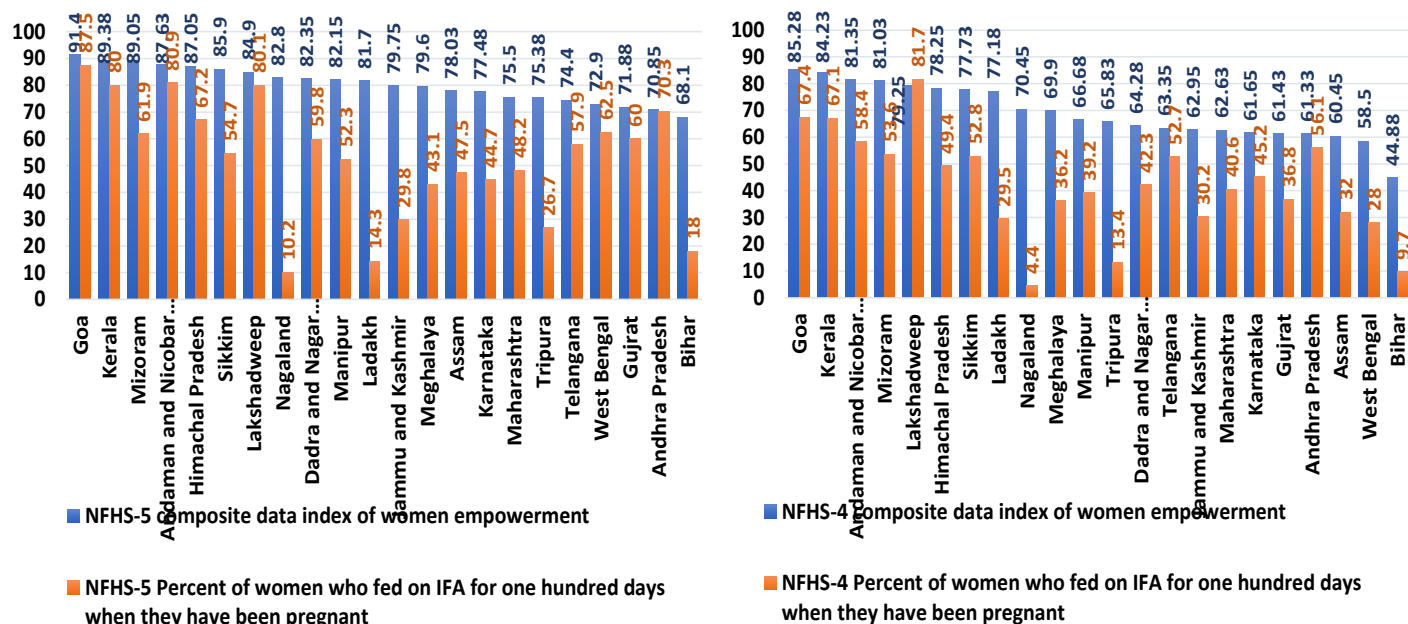


Figure 20: Comparison between composite data index of women empowerment and Percent of women who fed on IFA for one hundred days when they have been pregnant NFHS-5 and NFHS-4

5. DISCUSSION

According to NFHS-5 fact sheet, the expansion within the indicators of maternal health within the states and Union Territories of Andaman and Nicobar Island, Andhra Pradesh, Assam, Bihar, Dadra and Nagar Haveli and Daman and Diu, Goa, Gujrat, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Ladakh, Lakshadweep, Maharashtra, Manipur, Mizoram, Nagaland, Telangana, Tripura, West Bengal except Lakshadweep, Sikkim, Meghalaya, Mizoram, West Bengal, Telangana has improved when compared with NFHS-4. When it comes to maternal health, the Union Territories continue to have a positive image. In contrast to Union Territories, States, on the other hand, showed a progressive end. In the event of a maternal health scenario in any state or union territory, improvement in the discussed maternal health indicators is critical. The provision of ANC is critical to the preservation of safe motherhood. An accurate and regular ANC is typically a pointer to early action in the event of a pregnancy problem. A minimum of four ANC examinations are required at various stages of pregnancy to ensure this. In India, for example, different anemia therapies are being implemented at various levels of pregnancy. Many anemia therapies, for example, are carried out in India during various stages of pregnancy. TT injections and IFA capsules/syrups are commonly given to help with pregnancy maintenance and well-being.

Institutional deliveries are more successful than home deliveries in terms of avoiding or minimizing maternal problems. However, due to circumstances such as a lack of resources, a lack of understanding, and the stigma connected with it, deliveries made at reception are still common throughout the country, particularly in hard-to-reach areas. The NFHS-5 statistics reveal that both states have improved their performance in terms of institutional deliveries when compared to NFHS 4, but home deliveries are still being carried out with no or minimum support from the SBA, or other health personnel in states and union territories such as the Andaman and Nicobar Islands, Assam, Bihar, Dadra and Nagar Haveli and Daman and Diu, Goa, Gujrat, Himachal Pradesh, Karnataka, Lakshadweep, Maharashtra, Manipur, Mizoram, Telangana, and West Bengal. In NFHS-5, the percentage of home deliveries by competent birth attendants fell as compared to NFHS-4. Despite extensive training of health care professionals under the Integrated Management of Childhood Illnesses (IMNCI) and neonatal and skilled birth attendants, performance at the grass-roots level is appalling, affecting the health of pregnant women in rural areas and leading to increased maternal mortality and morbidity.

Neonatal care is critical for both the health of the mother and the survival of the newborn. The neonate's survival depends on what happens in the first 28 days following delivery. As a result, institutional and thus relevant professional support is critical for the newborn's optimal health. In this regard, the position of states and union territories in NFHS-5 as compared to NFHS-4 shows an increased achievement in neonatal care within the first two days of delivery, with the exception of Ladakh, Lakshadweep, and Meghalaya.

According to the NFHS-4 and 5 data, "Caesarean Section (CS) deliveries occurred more frequently in private hospitals, suggesting an excessive contrast to the norms set with the support of WHO." The relatively high frequency of caesarean birth deliveries in private hospitals indicates that private institutions have a financial incentive to do CS deliveries. Another explanation is that the lower proportion of CS births in public health institutions is due to a lack of resources or qualified personnel. As a result, significant steps must be taken to increase the number of human resources required so that caesarean delivery deliveries can be scheduled as needed.

Comparison between composite data index of women empowerment and Percent of women accepting postnatal care from any health personnel within two days of delivery NFHS-5 and NFHS-4 As per Pearson correlation it is positively correlated in NFHS-4 with significance value 0.029 whereas in NFHS-5 significance value is more than 0.05

Comparison between composite data index of women empowerment and Percent of women who had full ANC during first trimester. As per Pearson correlation it is positively correlated in NFHS-4 with significance value 0.002 whereas in NFHS-5 significance value is more than 0.05

Comparison between composite data index of women empowerment and Proportion of ever-married women age 18-49 years who have experienced physical violence during any pregnancy As per Pearson correlation it is negatively correlated in NFHS-5 and NFHS-4 with significance value 0.004 and 0.001 respectively Which shows when the women empowerment will increase Proportion of ever-married women age 18-49 years who have experienced physical violence during any pregnancy will decrease.

Comparison between composite data index of women empowerment and Pregnant women age 15-49 years who are anemic As per Pearson correlation it is negatively correlated in NFHS-5 with significance value 0.008 Which shows when the women empowerment will increase Pregnant women age 15-49 years who are anemic will decrease.

6. CONCLUSION

The maternal health situation in all 22 States and Union Territories suggests that there is a need to indulge more in maternal health-related activities. In order to achieve maternal health goals, a great degree of progress is required in maternal health care. Every stage of pregnancy and delivery necessitates this advancement. Furthermore, the average age of marriage in both states, which is lower than the majority of marriages in the country, is a source of worry in terms of maternal health services. The age at which a person marries can have an impact on both the maternal and newborn health, as well as cause preterm deliveries, which can lead to complications for both the mother and the child.

The study's findings underline the relevance of pregnant women's participation in the antenatal phase of their pregnancy, as well as the importance of obtaining the whole ANC package. It also assumes that skilled workers will do a higher number of institutional deliveries, resulting in a smaller proportion of home deliveries.

Also focusing on women empowerment maternal health indicator can be improved Kerala is the best example for this. This analysis also shows the same that the states where women empowerment index was high has better maternal health indicators.

7. REFERENCES

1. Arvind Sharma, Pritesh Singh Thakur, Rajesh Tiwari, Richa Sharma; Utilization of antenatal care services in tribal area of Madhya Pradesh: a community based cross sectional study; Int J Community Med Public Health. (2019) Jun;6(6):2465-2471 DOI: <http://dx.doi.org/10.18203/23946040.ijcmph20192306>.
2. Dr. Rambooshan Tiwari, Sneha Gupta; SPATIAL INEQUALITIES IN MATERNAL HEALTH CARE UTILIZATION IN MADHYA PRADESH; Journal of Rural Development Review Vol.-V, No.-5, April -Jun. (2018); ISSN No. 2456 -7191.
3. Jat, T.R., Ng, N. & San Sebastian, M. Factors affecting the use of maternal health services in Madhya Pradesh state of India: a multilevel analysis. Int J Equity Health **10**, 59 (2011). <https://doi.org/10.1186/1475-9276-10-59>.
4. F. Ram, Usha Ram, and Abhishek Singh; FUTURE DEMAND FOR MATERNAL AND CHILD HEALTH SERVICES FROM PUBLIC HEALTH FACILITIES IN UTTAR PRADESH; The Journal of Family Welfare; Vol. 56, Special Issue (2010).
5. LUCKY SINGH, RAJESH KUMAR RAI and PRASHANT KUMAR SINGH; ASSESSING THE UTILIZATION OF MATERNAL AND CHILD HEALTH CARE AMONG MARRIED ADOLESCENT WOMEN: EVIDENCE FROM INDIA; January (2012); Journal of Biosocial Science, 44, pp 1-26; doi:10.1017/S0021932011000472
6. Sample Registration System-16-18
https://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS%20Bulletin_2018.pdf
7. Anita Gupta, Pragti Chhabra, AT Kannan, Gayatri Sharma; DETERMINANTS OF UTILIZATION PATTERN OF ANTENATAL AND DELIVERY SERVICES IN AN URBANIZED VILLAGE OF EAST DELHI; July –December, (2010); Indian J. Prev. Soc. Med Vol. 41 No.3 & 4; ISSN: 0301-1216.
8. Maternal and Newborn Health toolkit
<http://nhsrcindia.org/sites/default/files/Maternal%20%20Newborn%20Health%20Toolkit.pdf>
9. Indian Journal of Public Health
<http://www.ijph.in/article.asp?issn=0019-557X;year=2016;volume=60;issue=4;spage=294;epage=297;aulast=Doke9>
10. NFHS Factsheet-4
http://rchiips.org/nfhs/factsheet_NFHS-5.shtml
11. NFHS Factsheet-5
http://rchiips.org/nfhs/factsheet_nfhs-4.shtml