Summer Internship Report

At

Piramal Swasthya Management and Research Institute (Patna, Bihar)



(April 1st – June 30th,2025)

A Report

By

Ayush Vardhan

On

Antenatal care and Birth-preparedness among rural women in Bihar.

Under guidance of

Dr. Anandhi Ramachandran

PGDM (Hospital and Health Management)

2025-2026



International Institute of Health Management Research, New Delhi

(Completion of Summer Internship from Piramal Swasthya)

The certificate is awarded to

Name: Ayush Vardhan

In recognition of having successfully completed his Internship in the department of

Research, monitoring, Learning and Evaluation

and having successfully completed his Project Titled:

Antenatal care and Birth-preparedness among rural women in Bihar

Date: 30/06/2025

Organization: Piramal Swasthya Management and Research Institute

He comes across as a committed, sincere, proactive, engaged & diligent person w a strong drive & zeal for learning, excellent communication skills, teamwork & leadership potential

We wish him all the best for future endeavors

Organization Supervisor

Director Data & Learning
Core Team Member
Research and MLE

Head-HR/Department Head

Manager-Human Resource

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CERTIFICATE OF APPROVAL

The Summer Internship Project of titled "Antenatal care and Birth-preparedness among rural women in Bihar." at Piramal Swasthya Management and Research Institute is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

Name of the Mentor

(Dr. Anandhi Ramachandran)

Designation

Professor

IIHMR, Delhi

Signature.....

FEEDBACK FORM
(IIHMR Mentor)

Name of the Student: Ayush Vardhan

Summer Internship Institution: Piramal Swasthya Management and Research Institute

Area of Summer Internship: Antenatal care and Birth-preparedness among rural women in Bihar.

Attendance: Perfect adherence to internship norms.

Objectives met: Learnt Literature Review, Evidence Table Generation, Reference Management, Epidemiological concepts, Determining the Themes and Sub-themes, Developing Indicator Matrix, Data Collection, Data Management, Basic Quantitative Analysis and Thematic Extraction of Information from Qualitative Data.

Deliverables: SOGI Project – Qualitative Study Report ,Carried out desk-review on "Antenatal Care and Birth-Preparedness among rural women in rural Bihar", Compiled literature into an evidence summary table, Carried out data-analysis using SAS software on some key indicators in the context of Bihar based on literature review, Field visits of VHSND pharsa Bihar, Prepared a detailed report on Antenatal care and Birth-preparedness among rural women in Bihar. Developed the basic concepts of Data Cleaning, Data Management and Research Methodology.

Strengths

self motivated, proactive

Suggestions for Improvement

More clarity required in explaining.

Signature of the Officer-in-Charge (Internship)

Date: 18/07/2025
Place: N. Delhi.

Ayush Vardhan ST report

ORIGINALITY REPORT

6%	4%	4%	1%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Erasmus University Rotterdam Student Paper	<1%
2	Maina, Rose. "Maternal Antenatal Care Access and Attendance: A Qualitative Study of Midwives' and Pregnant Women's Experiences in Kilifi, Kenya.", University of Salford (United Kingdom) Publication	<1%
3	bmcwomenshealth.biomedcentral.com Internet Source	<1%
4	Ahmed, Abdirahman. "A Multilevel Analysis of Disparities in Association Between Antenatal Care and Delivery Settings in Somaliland.", National Yang Ming Chiao Tung University, 2024 Publication	<1%
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ACKNOWLEGEMENTS

I am deeply grateful for the invaluable learning and career development opportunity I received during my internship with the **Piramal Swasthya Foundation in Bihar**. Being part of this initiative was a truly enriching experience, and I consider myself fortunate to have engaged with such dedicated professionals and experts who supported me throughout this journey.

I would like to extend my heartfelt thanks to **Dr. Tanmay Mahapatra** (Director, Data and Learning, Piramal Swasthya Management and Research Institute), **Dr. Devashish Singh**, **Dr. Irshad**, and **Mr. Saurabh Kumar** (Senior RMLE leaders) for their consistent guidance, encouragement, and valuable insights. Their mentorship played a vital role in the successful completion of my project, and I am sincerely appreciative of their contributions.

I am also thankful to **Dr. Shuchi Sree Akhouri** for his supervision and to **Mr. N.S. Reddy**, **Mr. Kunal Roy**, and **Mr. Ashish Kashyap** for their assistance, collaboration, and support in providing the data and direction necessary for this study.

A special note of gratitude to my mentor, **Dr. Anandhi Ramachandran** (Assistant Professor, IIHMR Delhi), whose continuous support was instrumental in shaping both the academic and field components of my work. I also wish to thank **Dr. Sutapa Bandyopadhyay Neogi** (Director, IIHMR Delhi) and **Dr. Sumesh Kumar** (Associate Dean, Academics and Student Affairs, IIHMR Delhi) for their encouragement and valuable feedback.

This internship has been a significant milestone in my professional development. I am committed to applying the knowledge and skills I have gained and will continue striving for excellence in my future endeavors. I look forward to future opportunities to collaborate with many of you again.

Ayush Vardhan

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ACRONYMS/ABBREVIATIONS

ANC - Antenatal Care

BPCR - Birth Preparedness and Complication Readiness

SBA - Skilled Birth Attendant

PNC - Postnatal Care

MMR - Maternal Mortality Ratio

IMR - Infant Mortality Rate

NMR - Neonatal Mortality Rate

RMNCH+A - Reproductive, Maternal, Newborn, Child, and Adolescent Health

NHM - National Health Mission

AWW - Anganwadi Worker

JSY – Janani Suraksha Yojana

JSSK – Janani Shishu Suraksha Karyakram

ICDS – Integrated Child Development Services

ASHA – Accredited Social Health Activist

ANM – Auxiliary Nurse Midwife

NFHS – National Family Health Survey

SC/ST – Scheduled Castes / Scheduled Tribes

CI – Confidence Interval

SD – Standard Deviation

SAS – Statistical Analysis System

OBSERVATIONAL LEARNING

ORGANIZATION PROFILE:

Piramal Foundation creates creative answers to problems that stand in the way of India's economic potential being fully realized. India has started the process of guaranteeing universal health coverage, and Piramal Swasthya is helping with that by using its experience and knowledge of creating ground-breaking solutions that have a big impact. The goal of Piramal Swasthya is to close the gaps in public healthcare by supporting and enhancing the Government of India's plan to achieve universal health coverage. One of the biggest non-profits in India's primary public healthcare sector, Piramal Swasthya focuses on non-communicable diseases, maternal health, and child and adolescent health.

With more than ten years of expertise, Piramal Swasthya has managed a number of healthcare innovations at scale that are meeting the primary healthcare requirements of the majority of India's underprivileged and marginalized communities. Through 35 creative public healthcare delivery schemes, Piramal Swasthya operates in 21 Indian states and has provided services to over 112 million beneficiaries to date. Over 2500 workers, including more than 250 physicians, are employed by Piramal Swasthya and collaborate with Seva Bhav.

The Group's key values—Knowledge, Action, Care, and Impact—direct the organization as it fulfills its social obligations.

INTERNSHIP JOURNEY

During my two-month internship I gained practical knowledge in data cleaning along with management of data and research methodologies. This experience encompassed several key areas, each contributing to a comprehensive understanding of the field.

SAS Software: I learned the basics of SAS software, focusing on SAS syntax, recoding, and data analysis. This included practical exercises that helped me understand how to manipulate and analyze data using SAS, a critical tool for any data analyst.

Microsoft excel: My training in Microsoft Excel covered data management techniques, including the use of IF Function, pivot tables, conditional formatting, VLOOKUP, HLOOKUP, and data validation. These skills are crucial for organizing and analyzing large datasets efficiently.

Epidemiology and Research Methodology: I gained knowledge in epidemiology and various research methodologies This required learning about a variety of study designs, such as case-control, cohort, and cross-sectional studies. I also learned about key epidemiological concepts like relative risk, incidence, and prevalence. Understanding these methodologies is fundamental for conducting robust and credible research.

Field visit: Health and Wellness Centre, Parsa, Bihar helps to observe staffing patterns and their adequacy and Identify challenges faced by the centre, helps in observation the infrastructure and facilities available at the HWC also provides opportunity to gain knowledge by interaction with ANM and ASHA at ground level.

Additional Project: SOGI Project, that helps to understand and work in the field of qualitative study from transcription to final thematic extraction and lastly preparation of findings in the form of summary.

FIELD VISIT OF VHSND

Field Visit Report: Health and Wellness Centre, Parsa, Bihar

Date of Visit: 07/05/2025

Location: Parsa Block, Saran District, Bihar

Panchayat: Bali

AWC No. :126141
Prepared by: Kokil Agrawal and Ayush Vardhan.
Designation: Intern's
Organization: Piramal Foundation

Facilitator: Uttam Sir and Abir Sir

1. Introduction

The Health and Wellness Centre in Parsa is one of the health facility setups under the Ayushman Bharat scheme that will provide essential and comprehensive primary healthcare to the rural population. The visit has been undertaken to evaluate the infrastructure, services, and staffing and functionality of the centre.

2. Objectives of the Visit

- Observe the infrastructure and facilities available at the HWC.
- Assess the range and quality of healthcare services provided.
- Observe staffing patterns and their adequacy.
- Identify challenges faced by the centre.
- Observation of VHSND

3. Observations

a. Infrastructure

- The HWC is currently operating from a **single-room structure**, which is inadequate for the comprehensive primary healthcare services it is expected to deliver.
- The space serves for multiple purposes like consultation, medicine storage, and patient waiting area and ultimately leading to overcrowding and lack of privacy.
- Basic facilities like electricity and clean water are available but limited; there are no dedicated areas for immunization or maternal care.

b. Services Offered

During the visit, the following services were actively being provided:

- **Antenatal Checkups (ANC):** Basic ANC services including blood pressure measurement, weight monitoring, Height Measurement, blood glucose test and iron-folic acid distribution were observed.
- **Immunization:** Routine immunization sessions for children were being conducted, supported by ASHA and ANM workers.
- **Basic Diagnostic Services:** Simple diagnostics like blood pressure, haemoglobin, and blood sugar tests were available.
- **Essential Medicines:** A limited range of free essential medicines was being distributed.

These services approximately align with the 12 service packages outlined under the Ayushman Bharat scheme.

c. Staffing

1. The centre is managed by a Community Health Officer (CHO) and supported by an Auxiliary Nurse Midwife (ANM) but there is No CHO present that time during the tenure of visit.

2. There is no laboratory technician posted at the centre and basic test are performed without using hand gloves and other essential precautions during the test like hand sanitization.

3. one ANM, one ASHA and one male worker was present.

4. Services Observed During Visit

During the visit, **five patients** were attended at the centre:

- **Three Antenatal Checkups (ANC):**

    - All pregnant women were given routine ANC checkups including weight and blood pressure monitoring
    - Each was provided with **calcium tablets** and **iron-folic acid (IFA)** supplementation.
- **Two Immunizations:**
    - **First child (7 months old):** Received **Penta 2** during this visit. The child had a **delay of 2 months**, and **Penta 3** was scheduled for the next visit.
    - **Second child (4 months old):** Received **Penta 3** on time, following the immunization schedule.
- **Demonstration:**
    - By Uttam_Sir "How to maintain Child weight-height graph in MCH card."

d. Patient Footfall:

- The centre caters to approximately 8-10 patients during each VHSND, primarily women and children. But centre open only 2 times a week.
- Common ailments treated include respiratory infections, gastrointestinal issues.

4. Challenges Identified

- **Staffing Shortages:** The absence of a full-time medical officer limits the range of services.
- **Infrastructure Gaps:** Lack of dedicated spaces for specific services hampers efficiency.
- **Supply Chain Issues:** Occasional shortages of essential medicines and diagnostic kits.
- **Community Awareness:** Limited awareness among locals about the services offered, leading to underutilization.
- **ANM doesn't properly guide patients (pregnant women) about dietary habits, benefits of IFA ca2+ tablets and also importance of immunization.**

5. Recommendations

- **Recruitment:** Appoint a full-time medical officer to enhance service delivery.
- **Infrastructure Development:** Upgrade facilities to include dedicated rooms for maternal care and diagnostics.
- **Supply Chain Management:** Ensure a consistent supply of medicines and diagnostic tools.
- **Community Engagement:** Conduct awareness campaigns to inform the community about available services.

6. Exit Interviews

Two exit interviews were conducted:

a. Preeti Kumari – 3rd ANC Visit

- She received the basic ANC checkup and medicines.
- However, **no information** was provided about:
    - **Handwashing practices**
    - **Toilet use and sanitation**
    - **Condom usage or spacing methods**
    - **Blood testing for anaemia/infections**

b. Rajni – Child Vaccination (4 months old)

- She was satisfied with the immunization service.
- But again, **no health education or counselling** was provided about:
    - **Hygiene and sanitation**
    - **Family planning methods**
    - **Nutritional advice or infection prevention**

  Both patients reported an **"okay" experience** but lacked awareness due to missed opportunities for health education and counselling.

c. Exit Interview With ANM:

- **Basic questions about work description.**
- **Personnel details about ANM.**
- **Regarding family planning work.**
- **Regarding various ANM apps like ANMOL app.**
- **Regarding child nutrition.**
- **Regarding ABDM importance.**

7. Conclusion

Despite serious infrastructure and staffing limitations, the Health and Wellness Centre in Parsa continues to provide critical services such as antenatal care, immunization, and basic diagnostics. The dedication of the existing staff is commendable. However, to truly meet the objectives of Ayushman Bharat, investments in infrastructure, staffing, and outreach are urgently needed.

8. Pictures



Picture:1

SESSIONS LEARNING DURING INTERNSHIP

Week 1

- Installed and set up SAS software for data work.
- Installed and learned to use EndNote to manage references.
- Understood the basics of cleaning and managing data.
- Learned how to review research papers and write a literature review.
- Attended a session on key research terms like prevalence, incidence rate, and risk ratio.
- Learned about different types of interviews (structured, semi-structured, unstructured).
- Practiced making an evidence table to summarize research findings.

Week 2

- Explored how SAS software works, including its main windows (log, result, code).
- Learned how to import data in SAS.
- Continued learning about risk ratio, incidence, and population at risk.
- Learned to use MeSH terms for research article searches.
- Practiced basic Excel functions.
- Created drop-down menus in Excel using data validation.
- Used EndNote to add references to documents.
- Learned how to estimate population size for research.

Week 3

- Practiced SAS procedures like sorting data, finding frequencies, and calculating averages.
- Learned how to design a questionnaire for health surveys.
- Reviewed questionnaires used in maternal and child health research.
- Had a mentor meeting to finalize the research topic and plan further steps.

Week 4

- Used Excel conditional formatting to highlight important data.
- Learned to recode variables in SAS.
- Studied different study designs like cohort, case-control, cross-sectional, and ecological.
- Attended a class on how to transcribe interviews in qualitative research.
- Learned about common research issues like ecological fallacy, recall bias, data accuracy, precision, incubation/latency period, and timing in research.
- Learned about the causal pie model used in explaining disease causes.

Week 5

- Practiced data validation in Excel to restrict incorrect entries.
- Learned how to build an indicator matrix from health survey tools.
- Understood the logic behind recoding variables in SAS.
- Practiced using DELETE and DROP commands in SAS to manage data.
- Continued discussing and understanding different public health study designs.

Week 6

- Used Excel functions like SUBTOTAL, SUM, MAX, MIN, and AVERAGE.
- Recoded and analyzed sociodemographic indicators using SAS.
- Learned more about the causal pie model and its role in epidemiology.
- Attended public health sessions on high-risk anemia and contraceptive methods.
- Studied services like BMONC and CMONC (emergency obstetric care).
- Discussed nutrition needs of children in different age groups.
- Learned about health infrastructure and public health systems in India.

Week 7

- Created and reviewed an indicator matrix from survey variables.
- Learned more about incidence rates and how to handle confounding variables.

- Got introduced to regression analysis in SAS.
- Attended a mentor session to match indicators with research questions.
- Learned about horizontal and vertical summation in SAS for variable calculation.

Week 8

- Used Excel functions like COUNTIF, SUMIF, and IF to handle data with conditions.
- Performed descriptive and statistical analysis in SAS.
- Learned how to calculate Wealth Index in SAS using household asset data.

LIMITATIONS:

Within the two-month internship period, it is challenging to finish a research project on time. Even though we have access to the data collection needed for our research topic, doing proper analysis in a short amount of time is challenging. As part of our observational learning, we conducted home surveys at VHSND Parsa. Accordingly, we have been working with the questionnaire instrument for a certain age group, although we are unaware of its development. Some limitations were noted during the study in relation to my research project on maternal health , namely the antenatal care and birth preparedness, among infants aged 0 to 5 months.

ADDITIONAL PROJECT

SOGI Project: Qualitative Study Report

Districts: Bihar and Rajasthan

Date: 12-05-25 to 4-06-25
Organization: Piramal foundation

1. Introduction

This qualitative study was conducted under the SOGI (Sexual Orientation and Gender Identity) initiative to explore the livelihood experiences, challenges, and perspectives of individuals from sexual and women disparities in livelihood in the states of **Bihar** and **Rajasthan**.

The objective was to gain a deep understanding of regional sociocultural contexts, discrimination, healthcare access, safety, and policy implications affecting SOGI populations.

These barriers are deeply rooted in factors such as gender, caste, geography, and socio-economic status. They are further compounded by the widening digital divide, which restricts women's access to digital services, skilling programs, and livelihood platforms that are increasingly central to economic participation.

1.1 Objectives of the Study

• To outline the current status of livelihood opportunities for rural women and girls.

• To identify the unmet needs and challenges they face in accessing services, rights, and digital skills.

• To evaluate how government programs, especially SRLM, are tackling these barriers and where gaps still exist.

2. Methodology

2.1 Study Design

The study adopted a qualitative, immersive methodology aimed at gaining a deep, contextual understanding of community experiences, perceptions, and interactions with local governance and development processes. Rather than relying on quantitative data, the approach focused on capturing narratives, insights, and lived realities through direct engagement.

2.2 Data Collection

- **Participants:** SHG leaders, community men and women and govt. officials

- **Tools Used:** in-depth interview and FGDs for local context.
- **Languages:** Hindi and local dialects (Maithili, Bhojpuri, Rajasthani)

2.3 Transcription & Translation

All interviews and discussions were transcribed verbatim in the original language and then translated into Hinglish.

I:जो बेशक अपनी मर्जी से शादी करते हैं या करना चाहते हैं, उनके बारे में आपके क्या विचार है? चाहे वह जाति, धर्म या आर्थिक स्थिति से जुड़ा?

R; जाति देखकर ही करना चाहिए, नहीं तो नहीं करना चाहिए, अन्य जाती नहीं।

I:स्वतंत्रता पुरुष और महिलाओं के लिए समान होनी चाहिए या पुरुषों के लिए अलग महिलाओं के लिए अलग।

R:पुरुष महिला दोनों के लिए बराबर बात एक है।

I:आपका समुदाय में कम उम्र में यह जबरदस्ती की गई शादी को कैसे देखा जाता?

R:अब के समय में ऐसा नहीं होता है। ना कम उम्र में शादी होता है ना जबरदस्ती शादी।

2.4 Labelling and Coding

- Each transcript was labelled with unique participant IDs and location tags.
- A manual coding approach was used, supported by qualitative data analysis software.

Q501 Do you think that women's safety, and fear of violence against women's affect their participation in livelihood opportunities? If so, how? Probe: workplace safety issues, safe roads, transportation facilities, etc	Safety concerns limit participation; group travel, safe transport, and local venues help, no
Q502 Do you think sanitation and hygiene related issues affect women's participation in livelihood opportunities? Probe: poor hygiene facilities, lack of awareness on sanitation and hygiene practices, etc.	No, Yes, attention paid specifcially to the availability of proper sanitation facilities at training centers.
Q503 Do you think menstruation has an impact on a women's participation in educational and livelihood opportunities? Why or Why not? If yes, are there any steps taken to address the problem?/ Probe: What additional support do you think can be provided to overcome such barriers?	Yes, has an impact. No, does not have an impact, Awareness campaigns, Distribution of hygiene products and kits, special leaves
Q504 How does access to safe and reliable transportation affect women's participation in livelihood opportunities under NRLM/SRLM?oProbe: Are there specific challenges related to mobility in your intervention area?/oProbe: What measures, if any, have been taken to improve women's access to safe transport?/	Yes, *No*, Should provide transport, organize training locally, provide safe accomodation, link helplines in Pink buses, redressal mechanisms
Q506 What facilities (e.g., toilets, water) are available to support women's participation in NRLM/SRLM activities?/	Toilet, Drinking water, help desk. Trying to pilot creches, Some things not available
507 Has NRLM/SRLM taken steps to ensure the safety and security of women participating in these programs? If yes, what are they	One stop centers, Didi Adhikaar Kendra, Mahila helpline, Mahila Police thana, Trainining during daytime, Close to women's home
Q508 What support systems are available for women who face any form of violence in your area?/	One stop centers, Didi Adhikaar Kendra, Mahila helpline, Mahila Police thana, Emergency funds for survivors, government support,internal cell,

Picture: 2

2.5 Thematic Extraction & Color Coding

Themes were extracted inductively based on the frequency, emotion, and depth of recurring patterns.
Color coding was applied for clarity:



309 Has participating in NRLM/SRLM programs influenced women's role in household decision-making? If so, how.Probe: children's education, or household purchases etc. Can you share any example, or some success story based on your experience	310 Do you see any gaps in NRLM/SRLM programs in supporting women's livelihood opportunities? If yes, can you tell us about those gaps?/ oProbe: challenges in program design, implementation, or outreach etc	311 In what ways can NRLM/SRLM programs be improved to better support women's livelihood opportunities.oProbe: scope of convergence, specific training, access to capital, or networking opportunities etc	312 How and in what ways, is digital literacy and technology important for women's livelihood?/	312_A: Are any tech-based trainings or capacity building sessions organised for the women?	313: What role does climate ch livelihoods, and what adaptati
es, change is seen in decision making	Haan to mujhe lagta hai ki I think kuchh area hai vahi advanced training area hain we should focused more I mean obviously jo food processing hain agriculture hain commercial sector hain apperal hain jo advanced focused hain in chijon me vo achha kar hi rahi hain but jo hai kafi focus hua hai uspe but going forward I think at might be more recruitment agar vo advanced course me industries 4.2 me mahilayon ka hai jo contribution badhe aur hamare infact ye hua ki educational system aur vocational ecosystem vala courses hai to meet to come together we meet to participate of woman in ITI in technical institute	hum, they are doing tot this its not only SRLM or NRLM needs to work in tendum with industries department aur phir bihar contact BSDM jo bhi state ke liye mission hoga so that you know the kind of training kind of capacity building so ek hi framework ke hisab se mapti customize ho hai jaisa jaisa jo hai work ho rahi hai jo opportunities nikal ke aa rahi hai uske hisab se any infact that is true not only woman beneficiary true for all skilling factory jo supply crate ho rahi hai vo demand ke hisab se creat ho jo	Without Digital literacy think about it is also important on the personal growth abhi 21 century jo hai abhi aap jo online karten hain ya karna chah rahi hai untill unless digital literacy with you jo government ke scheme ko access karna hai aapko aadhar card update karan hai whatever any case vo sari suvidha online hi hai. I was certain amount of digital literacy & you will actually accept insect manage time varne aap unhi lino me unhi usme fasen rahenge so that any ways yur reduce of productivity . Absouletly, aap dekhenge ki wall ki painting hoti hai jo conventaly hamne dekhe the chote me vo painting vo le ke baithen hain do din 3 din kar rahen hain leke baithe hain she my fertiliser		So,there are sector jahan par i posibly kam hoga agriculture is climate change hota hi hai livli I guess kabhi fluid hai kabhi sul training hoti hai kaise aap drow harvesting ke process ko maka happening agriculture departn kendra hai jo unke through trai happening so usme to I fill ki cl banki renawble energy ki baat bhi kafi sara bhi attraction hai. hamara kafi sara investment on bihar vo renewble energy gr

Picture: 3

For example:

- **Red** – Discrimination & Violence
- **Green** – Healthcare Access
- **Blue** – Identity & Expression
- **Yellow** – Community & Support
- **Purple** – Institutional Response

3. Key Findings

BIHAR – major themes

-Introduction and Livelihood

Women, mostly uneducated due to poverty, are primarily engaged in domestic tasks like cooking, cleaning, and childcare. Only a small number participate in SHG-led activities such as goat rearing, door-to-door marketing, tailoring, or tuition.

"Pariwarik zimmedariyon ke chalte rukna pada" / "Silai, bunai aur ghar ka kaam karti hoon" / "Jeevika ke madhyam se samuh bana hai"/ "The men only take care of the outside work"/ "They are responsible for maintaining the household"

-Income and Economic Independence: Verbatims – “Mahila nahi kamati hai isliye vo nahi karti” / "Khud ka paisa nahi hota" / "Thoda bohot kama lete hain silai se"/ "kabhi mera pati

bimar ho jayega to hum kiske pass jayenge paisa to hona chahiye na utna"/ "Jab jo jarurat hota hai na …wife bhi leti hai ..hum bhi lete hai dono lete hai.."

-*Mobility, household decision-making, and gender roles:* Verbatims – "Pariwar ke bade log faisla lete hain" / "Bahar jaane ke liye poochna padta hai"

RAJASTHAN- major themes

-*improvement in women education* – "aurat apna kamayegi to kisi kea age haath nahi failana padega"

-*benefit from SHGs*- "loan milta hai shg ki madat se"

-*Equality in Choice Should Exist* - clear support for gender equality, asserting that both men and women should have the same rights in choosing life partners

What does safety mean to you (at personal, household and community level)? How safe do you/women/girls feel in your community/workplace/school/college/market place etc? •Probe: Are there specific places or situations where you/women feel unsafe (e.g., public	Do you believe women in your community have the similar access as men? Health, education	Family property	Protection from domestic violence (DV)?	Denying forceful dowry	Why do you think this is the case or not the case?
Ask if Q100=1	Ask if Q100=2	Ask if Q100=2	Ask if Q100=2	Ask if Q100=2	Ask if Q100=2
Q801	Q802A	Q802B	Q802C	Q802D	Q803
Women safety:					
No. of women feel safe in their community and work place "Ha hamlog apne aap ko safe mahsoos karte hai hame lagta hai ki agr ham thik hai to sab thik hai "	**Gender Eqality :** mostly men give support towards equality and there should be equal rights in terms of education ,emplyoment etc. but they also feel their is some lacking behind women eqality "हा बिल्कुल" "पूरा तो नहीं कहा जा सकता है। अति 80% बोल सकते हैं।कुछ हुआ है, कुछ तो नहीं है।" / " Modern yug mein mahilayon ko kaam karne ka aur decisions lene ka adhikaar milna chahiye. Auraton ka apna adhikaar samajhna aur bolna naye yug ki maang hai." but women don't feel their is equality "nahi samaj hain a tgoda samaj se darr ke rehna padta hai ki kon kya bol dega"				
And no of women also feel unsafe ,fear of kiddnaping and also have fear to go outside in the night "अपनी इज्जत देख करके डर लगते है। जो कोई बाहर निकले तो कोई ऐसा ना कह दे। लड़की है, कोई औरत है, लड़का सब छेड़खानी ना करे"	**Property rights :** mostly they feel their should be equal rights "महिला संपत्ति में तो बराबर का अधिकार मिलना है।Ha hona chaiye" some of them feel women have no rights over property "kanuni तौर पर है।; ऐसा तो कुछ नहीं है, हाँ लड़की आएगी जाएगी पर दूसरा कुछ नहीं,"				
"ये की झगड़ा हो रहा ये मार्केट, ये सब।"	Domestic violence : mostly said their is no equal rights over domestic voilence "nahi hai jaise ham dekhte hai hinsa hai." some of them said they hai rights "haan" "hai" "ye nhi ki gharelu hinsa mahilaon ke sath hi hoti hai purus ke sath bhi hoti hai"				

Picture: 4

PROJECT REPORT

TITLE: Antenatal care and Birth-preparedness among rural women in Bihar.

BACKGROUND:

In most of India, improving maternal health remains a challenge, particularly in rural and underdeveloped areas like Bihar. Childbirth and pregnancy can lead to poor pregnancy outcomes that can be hazardous, but risks may be minimized if there are proper healthcare services and preparations (1).Birth Preparedness and Complication Readiness (BPCR) and Antenatal Care (ANC) are two crucial steps in ensuring mothers' safety and well-being. Regular medical examinations for pregnant women are part of antenatal care (ANC). Providing essential supplements like iron and folic acid, providing health counseling, conducting necessary tests like blood pressure checks and blood and urine tests, and helping with the early detection of complications (2).

All expectant mothers should ideally receive at least four ANC visits, but in states like Bihar, the majority of women either do not receive these services at all or only receive subpar ones. (3).

Just 9% of expectant mothers in Bihar received complete ANC, which entails at least four visits, blood pressure checks, blood and urine tests, and the use of iron-folic acid tablets. (2). In comparison, more developed states like Kerala have much higher coverage (4). The lack of medical staff, subpar health facilities, long travel times to clinics, and low health awareness

among women about the importance of ANC are some of the reasons for Bihar's low coverage. (4).

Planning for a safe delivery and handling any possible emergencies during pregnancy is known as birth preparedness and complications readiness, or BPCR. This includes selecting a local delivery facility, planning transportation, reducing delivery expenses, securing a companion for the woman during labor and delivery, and being alert for any warning signs. Women with adequate ANC are likely to be aware of these procedures and make the necessary preparations. Good ANC and greater birth readiness are closely related, according to research conducted in different parts of India. (5).

Early antenatal care (ANC) and routine checkups increase a woman's chances of saving money, selecting a safe delivery location, and being prepared for emergencies. (6). The percentage of women who are fully prepared for childbirth is even lower in rural and underdeveloped areas than it is nationwide (7). Anganwadi workers, also known as ASHAs, are community health workers who significantly improve ANC and BPCR. (8). When FLW counsel jointly with pregnant women, attendance at check-ups improves and there is increased knowledge on birth planning (9). Still, there are numerous obstacles (10). Many women face barriers to timely and comprehensive care, including low educational attainment, cultural beliefs, poverty, gender inequality, and a lack of decision-making authority. (6).

RATIONALE:

The adverse pregnancy outcomes in women in rural Bihar are primarily the outcome of the limited access to quality antenatal care (ANC) and improper birth planning. Lack of access to good quality antenatal care and insufficient birth planning are the main problems leading to poor pregnancy outcomes in many women in rural Bihar. Bihar is one of the socio-economically most backward states in the country with maternal health indicators such as full ANC coverage, institutional deliveries, and emergency readiness that are much below the national average (NFHS-5, 2021).

In the affirmative, there exist some studies that have unveiled the essential position of ANC in driving the psychological and practical works of women and their families, aimed at getting them fit for the childbirth. Many studies have been cited that illustrate how important ANC is in making sure that the woman and her family are on the right track to ease labor-going.

One of the chief roles of ACP (Advanced care planning) is the detection of the rising of health literacy along with the pregnancy of dangerous diseases and the motivation of the prompt health-seeking (WHO, 2016).

A lot of women are finding themselves in problematic situations that prevent them from receiving complete and timely ANC in Bihar because of several factors that include illiteracy, poor health care infrastructure, cultural norms that are deeply rooted, and not enough guidance from health workers. These types of women are not only left with no assistance when the

delivery goes wrong but also can be the sources of maternal mortality due to their ignorance and absence of care.

It is true to search the connection between ANC and birth preparedness has been explored in various other settings, evidence from rural Bihar is sporadic and scanty. It is extremely important to study the relation of these two factors in this part of the world due to the specific social, cultural, and health system factors that exist in the region. Programs that are not based on localized understanding may come up with a health intervention that is not very effective in meeting the community's needs.

This research aims at eliminating this dearth by establishing the effect of ANC on birth preparedness among the rural women in Bihar. It will also clarify, if women who have been given sufficient ANC (minimum 4) would be the most probable to prepare for delivery by choosing a proper health facility, making transport arrangements, saving money, being aware of danger signs and complication during delivery

This study will also highlight the barriers hindering access to ANC and birth preparedness. Insights from this research can inform programmatic and policy-level interventions at both district and state levels. Understanding the ANC–birth preparedness relationship is vital not only from a research standpoint but also for improving maternal health outcomes through schemes such as Janani Suraksha Yojana (JSY), Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), and the Ayushman Bharat Health and Wellness Centres. The findings can strengthen the role of ASHA workers in maternal health promotion and help reinforce community-based health systems by identifying gaps and actionable strategies.

OBJECTIVES

- To find out what quantity and what quality of antenatal care (ANC) services are offered to women living in rural Bihar, focusing on the timing, sufficiency, and parts of ANC visits.
- To investigate to what extent rural women are ready for childbirth including the aspects such as a delivery facility choice, transportation organization, money saving, birth companion choosing, and the knowledge of obstetric danger signs.
- To set the scope of the frontline health workers' contribution, ASHAs in particular, to the increase of ANC use and the fulfillment of birth preparedness practices by women of the community during their introduction.

METHODOLOGY

PART 1: Systematic Literature Review

Study Design

This research covers a systematic literature review in order to identify and examine the existing literature on the topics of antenatal care (ANC) and birth preparedness of women in rural Bihar.

Search Strategy

A comprehensive literature search was performed across multiple databases, including PubMed Central and Google Scholar, the search targeted English-language publications released between 2010 and 2024.

Keywords used :

(("Antenatal care"[All Fields] OR "ANC"[All Fields]) OR ("Birth preparedness*"[All Fields] OR "BPCR"[All Fields])) AND bihar[All Fields] AND ("2020/01/01"[PubDate] : "2024/12/31"[PubDate])

Inclusion and Exclusion Criteria

Included Studies:
• Research conducted in rural Bihar or comparable low-resource Indian settings or similar settings.
• Focus on women of reproductive age (15–49 years)
• Studies addressing ANC or birth preparedness
• Peer-reviewed or government reports with clearly described methodology and results
Excluded Studies:
• Studies outside the Bihar context
• Editorials, opinion pieces, or reviews without empirical data
• Duplicated or incomplete entries

Screening and Selection Process

The mesh terms I used are (("Antenatal care" OR "ANC") OR ("Birth preparedness" OR "BPCR")). Search results were organized using Endnote reference manager. After duplicate removal, I found total 676 articles, out of which I selected 86 for my study and included 13 most relevant paper in my evidence table.

Data Extraction and Synthesis

A structured data extraction sheet was used to collect key details: author, publication year, study location, sample size, design, population characteristics, ANC and BPCR indicators, findings, and limitations.

Part 2: Secondary Data Analysis

Study Design

The second part of this study involved a cross-sectional analysis of secondary data derived from a 2025 household survey conducted in rural Bihar. This analysis aimed to quantify ANC utilization and birth preparedness and to identify associated factors consistent with the literature findings.

Study Population

The analysis focused on rural women aged 15–49 years who had given birth in the last 12 months, specifically mothers of infants aged 0–5 months at the time of the survey.

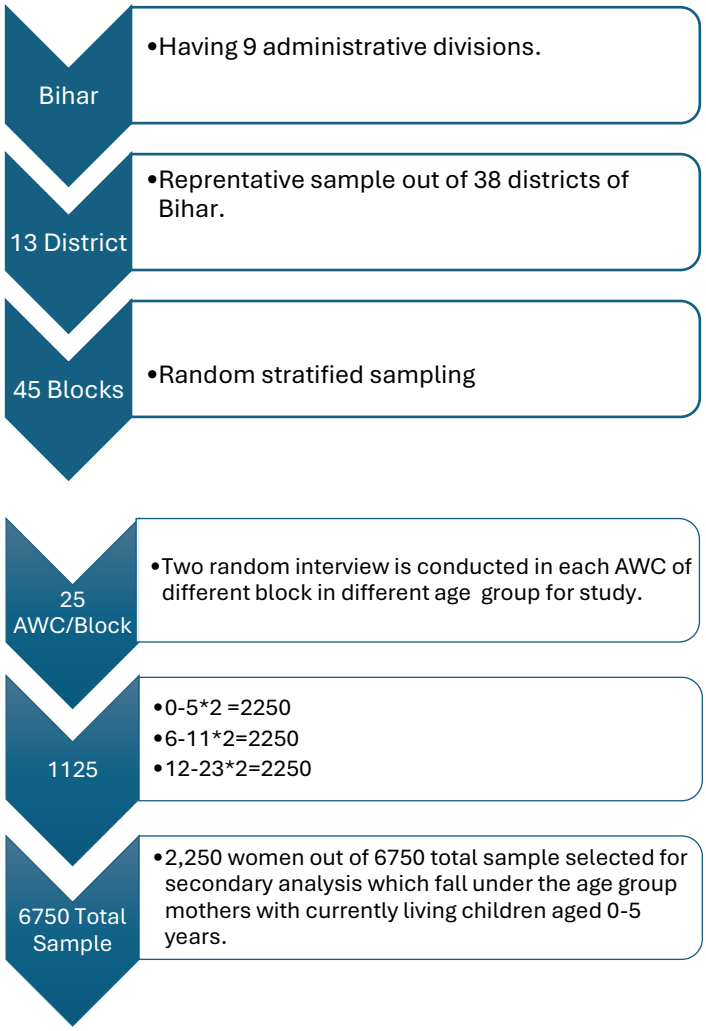


Picture: 5

Sample Size and Sampling Strategy

The dataset included responses from 2,250 women out of 6750 (mothers with currently living children aged 0-5 months, 6-11 months, and 12-23 months), sampled from 45 blocks across 13 districts, covering all 9 administrative divisions of Bihar. A multistage stratified random sampling method was employed to ensure a representative distribution across socio-demographic and geographic lines.

Flowchart of sample Size Selection



Picture: 6

Variables Considered Based on Systematic Review:

Outcome Variables
Number of ANC visits
Timing of first ANC visit
Birth preparedness (composite of five indicators: transport, money, birth companion, ANC (<4 vs. ≥4), and blood donor)
Exposure Variables
Registration of Pregnancy
Time of Pregnancy Registration
FLW advise for ANC
FLW advise for Birth-preparedness
Highest Education of mother
Confounding Variables
Demographic: Age

Socio-economic: Education (mother and spouse), wealth index
Cultural: Religion, caste

Data Management and Statistical Analysis

All data were cleaned and prepared for analysis using SAS software. This process involved checking for missing values, correcting inconsistencies, and ensuring accurate coding of variables. Once the dataset was finalized, descriptive statistics were used to summarize the key characteristics of the study population.

Frequencies and percentages were calculated for various background and outcome variables, such as religion, caste, maternal education, number of ANC visits, and components of birth preparedness. To assess the reliability of these estimates, 95% confidence intervals were also computed. These helped to indicate the range within which the true values for the population are likely to fall. The descriptive findings provided a clear understanding of maternal health practices among mothers of infants aged 0–5 months in rural Bihar, highlighting patterns in ANC utilization and levels of birth preparedness.

DEFINITION OF COVARIATES:

OUTCOME VARIABLES

Number of ANC Visits: Shows how many times a pregnant woman went for antenatal check-ups during her pregnancy.

Timing of First ANC Visit: Tells how early in the pregnancy the woman her first antenatal visit had, measured in weeks or trimester.

Birth Preparedness (Composite Indicator): A combined measure of how well a woman prepared for childbirth. It includes arranging transport, saving money, choosing a birth companion, completing at least 4 ANC visits, and arranging a blood donor.

EXPOSURE VARIABLES

Registration of Pregnancy: Shows whether the pregnancy was officially registered with a health worker.

Time of Pregnancy Registration: Tells when the pregnancy was registered—early or late, usually by trimester.

FLW Advice for ANC: Tells whether a frontline health worker (like ASHA or ANM) gave advice about antenatal care.

FLW Advice for Birth Preparedness: Shows if a frontline worker gave suggestions or reminders about preparing for childbirth.

Highest Education of Mother: Shows the highest level of school or college the mother completed.

CONFOUNDING VARIABLES

Age of the Mother: The mother's age in completed years at the time of the interview.

Mother's Education: Level of education completed by the mother.

Father's Education: The husband's or partner's highest level of education.

Wealth Index: A score based on the household's assets and living conditions, usually grouped into poor, middle, and rich.

Religion: The religion the respondent follows, such as Hindu or Non-Hindu.

Caste: The social group a woman belongs to.

KEY FINDINGS OF LITERATURE REVIEW:

1.Factors Influencing ANC Utilization:

A variety of socioeconomic and demographic factors influenced women's utilization of antenatal care services. ANC services were found to be used by women who were exposed to the media, had

higher education levels, had more decision-making authority, and belonged to families with more money. Utilization was also enhanced by residency in Southern India. However, women from Central and Eastern India who lacked decision-making authority and income were less likely to use ANC services. The utilization of ANC services may rise because of women's empowerment, education, and the elimination of financial obstacles.

2.Low Completion of Suggested ANC Visits:

While most women began ANC early in their pregnancy, few completed the recommended four sessions. Institutional deliveries were relatively high, but knowledge regarding important pregnancy danger signs was poor. None of the women had made arrangements for blood donors or planned where they would give birth. Education played a significant role in readiness for birth and complications.

3.ANC Quality and Perceived Gaps:

The quality of ANC services varied greatly. Women expressed satisfaction, but independent assessments revealed gaps, including deficiencies in medicines and diagnostic equipment. The identification of such discrepancies was made easier by relating information from a variety of sources, such as interviews with patients and facility audits. These gaps indicate gaps in monitoring and availability of resources within rural health centers.

4. Role of Knowledge and Financial Planning

Women who learned about pregnancy danger signs were better prepared for emergencies. Over half saved for delivery, and those who were aware of government financial programs exhibited improved birth preparedness. Encouraging awareness of these programs can enhance maternal outcomes.

5. Barriers to BPCR:

Poverty, a lack of awareness, and limited access to services all had an impact on prenatal and postpartum preparedness. Neither blood donation nor government assistance were widely known to women. Low partner involvement and cultural beliefs also lowered preparedness. During ANC, community education and family participation can improve this.

6.Iron and Folic Acid (IFA) Supplementation:

Females who took more than 100 IFA tablets were less likely to die during pregnancy and childbirth. Additionally, the study raised concerns about an increase in cesarean sections and inadequate anemia management. In rural settings, maternal and child survival can be improved by having skilled health care workers and improved monitoring.

7. Importance of Education and Past Experience:

BPCR was more common among educated older women who had previously delivered in an institutional setting. This indicates the impact that healthcare access and prior positive exposure can have on maternal behavior today.

8. Urban Influence and Technology:

More independent women, such as single mothers, were better prepared in urban populations. However, working women lacked time to prepare. Familiar (non-institutional) support such as family or traditional birth attendants was preferred. mHealth tools had potential for enhancing awareness and support.

9. Gaps in Knowledge and Partner Participation:

The majority of pregnant women and their partners were unaware of warning signs, particularly during the postpartum and newborn periods. There was a lot of money to be saved, but not many people chose a place to deliver or hired help with the labor before the baby was born. Partners who were educated were also more likely to participate. Male participation in maternal health must be enhanced.

10. Implications for Policy:

Even in more well-endowed regions such as Delhi, vulnerable women did not get proper ANC. However, increased access to primary care increased ANC utilization in previously underserved regions. It is absolutely necessary to boost government programs that provide primary health services.

ANALYSIS RESULT:

Description	Response Label	N	n	%	LCI	UCI

Religion	Non-Hindu	2250	318	14.13	12.69	15.57
	Hindu	2250	1932	85.87	84.43	87.31
Caste (Marginlised/Non-Margilanised)	Non-Marginalised	2250	2206	98.04	97.47	98.62
	Marginalised	2250	44	1.96	1.38	2.53
Age Category	16-21	2250	712	31.64	29.72	33.57
	22-25	2250	943	41.91	39.87	43.95
	25 Above	2250	595	26.44	24.62	28.27
Highest Education of Father	Illiterate	2090	624	29.86	27.89	31.82
	Upto 8	2090	494	23.64	21.81	25.46
	Above 8	2090	972	46.51	44.37	48.65
Wealth Index	Lower	2250	750	33.33	31.38	35.28
	Medium	2250	750	33.33	31.38	35.28
	High	2250	750	33.33	31.38	35.28
Highest Education of mother	Illiterate	2250	709	31.51	29.59	33.43
	Upto 8	2250	570	25.33	23.53	27.13
	Above 8	2250	971	43.16	41.11	45.20
Pregnancy Registration	Yes	2250	2181	96.93	96.22	97.65
	No	2250	69	3.07	2.35	3.78
Month of Registration	After 1st Trimester	2218	937	42.25	40.19	44.30
	1st Trimester	2218	1281	57.75	55.70	59.81
FLW Advice for ANC During Godbharai Session	Yes	333	22	6.61	3.92	9.29
	No	333	311	93.39	90.71	96.08
Advice on institutional delivery.	Yes	333	61	18.32	14.14	22.49
	No	333	272	81.68	77.51	85.86
Advice on PRE-IDENTIFY A VEHICLE, to reach the hospital for delivery or in case of emergency?	Yes	1677	308	18.37	16.51	20.22
	No	1677	1369	81.63	79.78	83.49
Advice to keep some extra MONEY aside for delivery or in case of emergency?	Yes	1677	318	18.96	17.08	20.84
	No	1677	1359	81.04	79.16	82.92
Advice to decide in advance who will ACCOMPANY you to the hospital for delivery or in case of emergency?	Yes	1600	198	12.38	10.76	13.99
	No	1600	1402	87.63	86.01	89.24
Advice to identify someone who would be willing to DONATE BLOOD if needed?	Yes	1600	123	7.69	6.38	8.99
	No	1600	1477	92.31	91.01	93.62
Where did pregnent woman plan to deliver	Home Delivery	2250	143	6.36	5.35	7.36
	Government Hospital	2250	1239	55.07	53.01	57.12

	Private Hospital Clinic	2250	195	8.67	7.50	9.83
	Not Planned	2250	673	29.91	28.02	31.80
Received ANC	Yes	2246	2215	98.62	98.14	99.10
	No	2246	31	1.38	0.90	1.86
No. of ANC	<3	2215	572	25.82	24.00	27.65
	>=3	2215	1643	74.18	72.35	76.00
No. of ANC	<4	2215	1093	49.35	47.26	51.43
	>=4	2215	1122	50.65	48.57	52.74
Arrangement of Transportation	No	1434	908	63.32	60.82	65.82
	Yes	1434	526	36.68	34.18	39.18
Arrangement of Money	No	1434	517	36.05	33.56	38.54
	Yes	1434	917	63.95	61.46	66.44
Arrangement of Companion	No	1434	547	38.15	35.63	40.66
	Yes	1434	887	61.86	59.34	64.37
Arrangement of Blood Donor	No	1434	1306	91.07	89.60	92.55
	Yes	1434	128	8.93	7.45	10.40

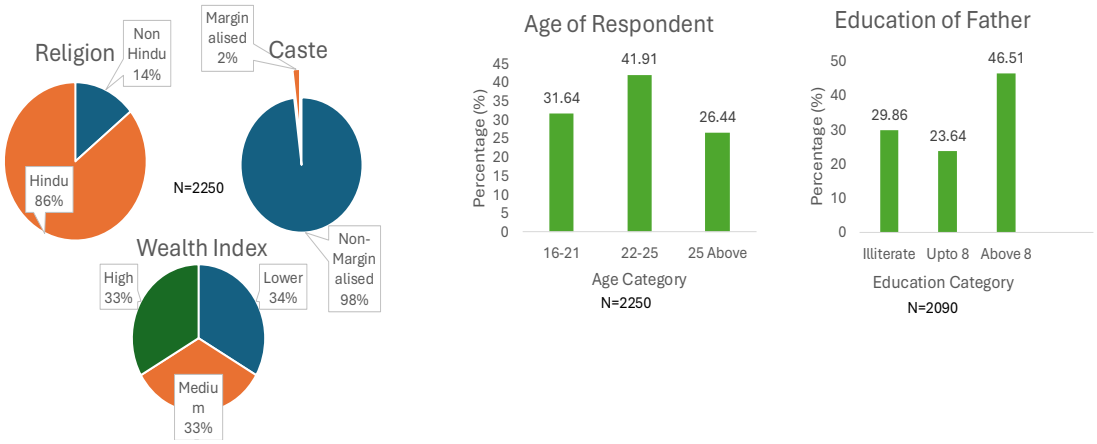
INTERPRETATIONS:

Socio-Demographic Profile of Respondents

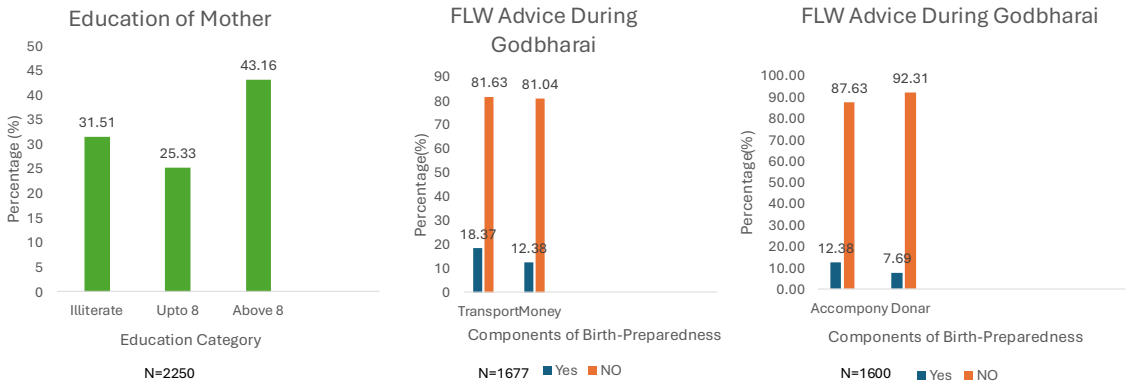
Out of 2,250 women included in the analysis, most (around 86%) identified as Hindu, while a smaller portion (14%) belonged to other religions. In terms of caste, the majority (98%) were from non-marginalised communities, and only 2% were from marginalised groups such as Scheduled Castes and Scheduled Tribes.

The age distribution showed that about 42% of the women were between 22–25 years, nearly 32% were aged 16–21 years, and around 26% were above 25 years. Regarding education, 31.5% of mothers and 29.9% of fathers had no formal education. About 43% of mothers and 46.5% of fathers had studied beyond the 8th standard, though a gender gap in educational attainment still existed.

Wealth-wise, the respondents were evenly distributed among lower, middle, and higher wealth groups, each representing roughly one-third of the total sample.



Picture: 7

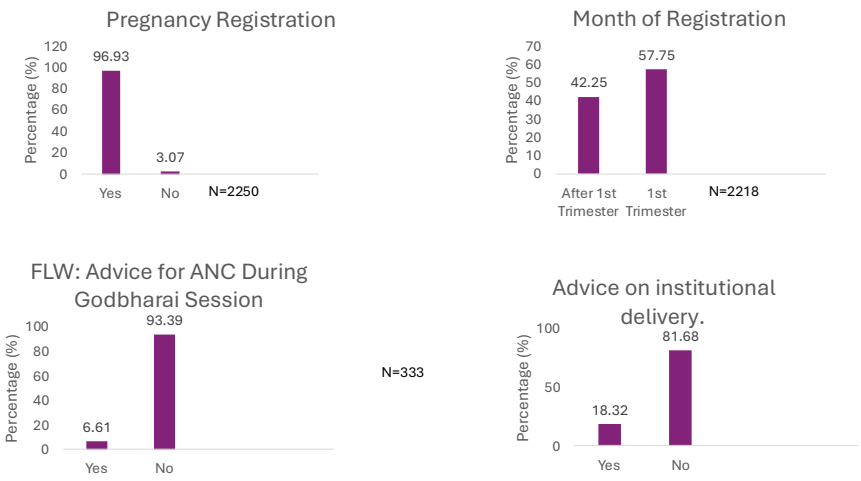


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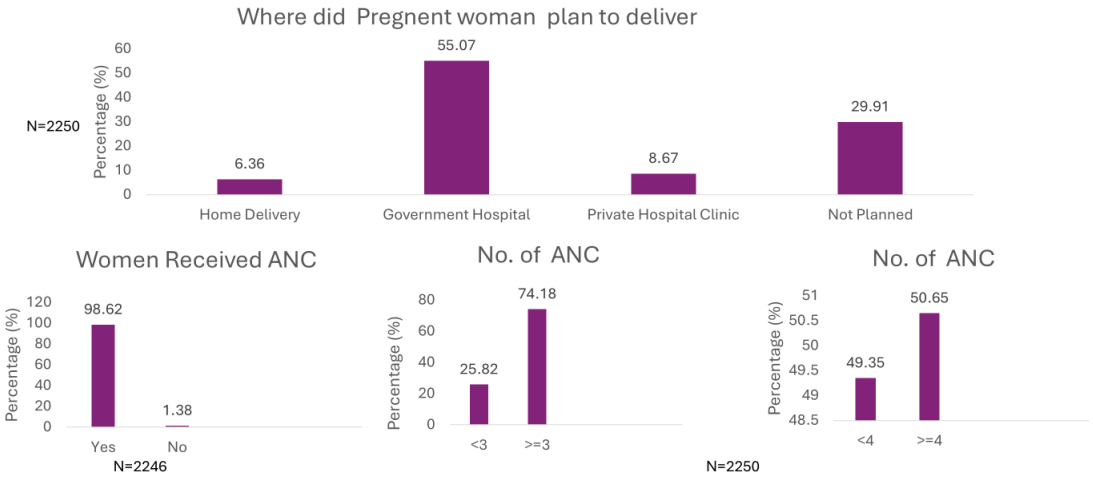
Antenatal Care Use

Most women (nearly 97%) had registered their pregnancies. However, only about 58% did so during the first trimester, while 42% registered after the first three months of pregnancy. Early registration is important for timely screening and preventive care, and the delay among a

significant portion of women may limit the benefits of antenatal services. Almost all women (98.6%) had received some form of antenatal care. Yet, when it came to the recommended number of visits, only around half (50.7%) had attended four or more ANC check-ups. About 74% had at least three visits, while over a quarter had fewer than three visits. These figures suggest that while most women had contact with health services, many did not receive ANC as frequently as recommended.



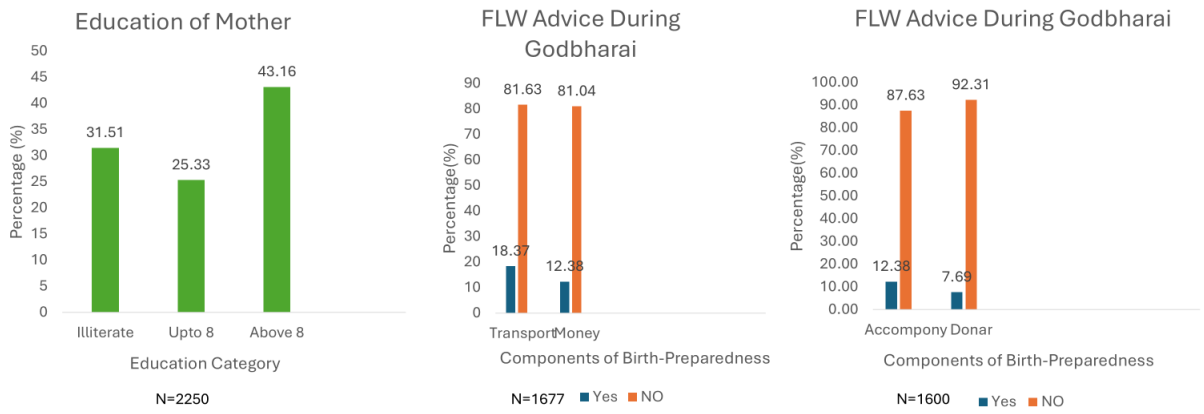
Picture:9



Picture:10

Counselling on Birth Preparedness

Despite widespread access to ANC, many women missed out on important advice related to birth preparedness. Only 6.6% of women reported receiving any guidance on antenatal care during the Godbharai event (a traditional ceremony held during pregnancy). Advice on institutional delivery was received by just 18% of women.



Picture:11

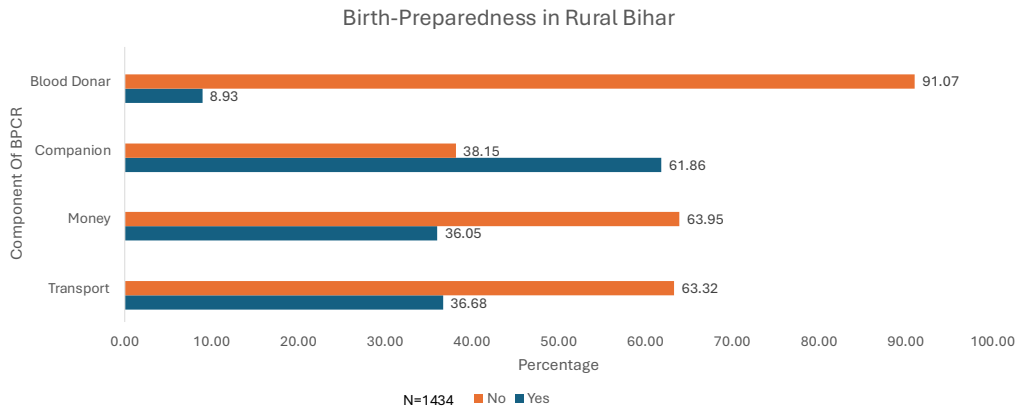
Other aspects of preparedness were also poorly covered:

- Only 18% were advised to pre-arrange transport to the hospital.
- 19% were told to keep money ready in case of delivery-related expenses.
- Just 12% were advised to identify someone who could accompany them to the hospital.
- Less than 8% were encouraged to arrange a blood donor in case of emergency.

This highlights a major gap in communication between health workers and expectant mothers. These types of advice are crucial, especially in rural areas where access to emergency services can be delayed.

Delivery Planning

When asked about their delivery plans, 55% of women said they intended to give birth in a government hospital, while around 9% chose private hospitals or clinics. A small group (6%) planned home deliveries. However, nearly 30% had not made any delivery plan at all. This lack of planning can contribute to delays in reaching a facility during labor and may increase risks for both mother and child.



Picture: 12

Preparedness Actions Taken by Mothers

- Out of 1,434 women assessed for specific birth preparedness steps:
- Only 37% had arranged transport in advance.
- Around 64% had set aside money for delivery-related needs.
- About 62% had identified someone to accompany them during delivery.
- Just 9% had arranged for a potential blood donor.

While financial and social preparations were somewhat better, planning for transport and emergency blood needs was still low. These steps are especially important in rural settings where emergency services might not be easily available.

CONCLUSION

The findings show that although most women accessed antenatal services and registered their pregnancies, many did not do so early enough, and a large number did not complete the recommended four ANC visits. More importantly, birth preparedness was poor. Very few women received advice or decided related to transport, money, companionship, or blood donation, key elements for safe delivery. This points to a need for stronger engagement by health workers at the community level, with more emphasis on early ANC, counselling, and encouraging practical preparations for childbirth. Improving communication and support systems can help ensure that more women are ready and safe when they go into labor.

DISCUSSION

The delay signals that some injury in the early care-seeking processes is still due to low health awareness, cultural practices that are still dominant, and low level of engagement of community health workers. Birth preparedness counselling and practices are implemented very weakly, if at all. A Particularly concerning discovery is that, despite relatively high levels of ANC coverage, there is very little implementation of birth preparedness counselling and practices. The World Health Organization (WHO) defines birth preparedness and complication readiness (BPCR) as the smallest set of necessary actions and preparations that a pregnant woman and her family should plan and carry out if they want to have a safe birth. However, it turned out that in this study, less than 20% of respondents told that the they were introduced by the essential steps which were i.e. organization of the transport, saving, choosing of the companion, or the one who gives the blood. This means a big difference is shown between the ANC contact and the effective Counseling, thus is the situation in India as the case studies of Singh et al. (2021) and Kumar and Mohanty (2020) indicate.

This paper further accentuates that in the current situation godbharai celebrations which are culturally very important in a pregnancy life are not broadly used. Additionally, Godbharai, being a cultural practice and an essential milestone in pregnancy, can be used for structured, group-based ANC and delivery preparedness counseling. Unfortunately, only a few women received ad-hoc health-related advice during these occasions, suggesting that community health promotion efforts remain hard to penetrate through these channels.

On the side of planning of delivery, the find-out show more gaps. To give it straight forward, 55% of women planned to give birth at the government health care facilities, while 30% of them did not have any delivery plan and a small portion still preferred home birth. Consistent with Deshpande et al. (2019) findings, the lack of delivery planning still constitutes a major cause of maternal and neonatal deaths in rural areas where timely access to institutional care is often constrained. If the preparedness of the actions is looked into, the major part of women had not done arrangements for emergency transport or a blood donor—two of the most neglected themes of BPCR, as illustrated in JHPIEGO's BPCR index reports.

This lack leads to significantly increases the risk of preventable deaths in cases of obstetric emergencies, especially in Bihar's remote areas.

Collectively in general, these findings demonstrate the utilisation for maternal health programs to move beyond mere service contact and instead focus on enhancing the quality and depth of health interactions. Frontline health workers (FLWs) require better training, supervision, and tools to provide impactful counselling during every ANC visit. Additionally, stronger efforts must be made to promote community engagement, male participation, and the use of culturally meaningful platforms to deliver health messages more effectively.

REFERENCES:

1. Singh T, Tripathy B, Pandey AK, Gautam D, Mishra SS. Examining birth preparedness and complication readiness: a systematic review and meta-analysis of pregnant and recently delivered women in India. BMC Womens Health. 2024;24(1):119.
2. Dandona R, Kumar GA, Majumder M, Akbar M, Prasad Dora SS, Dandona L, et al. Poor coverage of quality-adjusted antenatal care services: a population-level assessment by visit and source of antenatal care services in Bihar state of India. Lancet Reg Health Southeast Asia. 2024;25:100332.
3. Alkema L, Chou D, Hogan D, Zhang S, Moller AB, Gemmill A, et al. Global, regional, and national levels and trends in maternal mortality between 1990 and 2015,

with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. Lancet. 2016;387(10017):462-74.
4. Dehury RK, Samal J. Maternal Health Situation in Bihar and Madhya Pradesh: A Comparative Analysis of State Fact Sheets of National Family Health Survey (NFHS)-3 and 4. J Clin Diagn Res. 2016;10(9):IE01-IE4.
5. Dandona R, Majumder M, Akbar M, Bhattacharya D, Nanda P, Kumar GA, et al. Assessment of quality of antenatal care services in public sector facilities in India. BMJ Open. 2022;12(12):e065200.
6. Mesele M, Anmut W. Birth preparedness and complication readiness practice among women attending antenatal care follow up in Yirgalem general hospital, southern Ethiopia. PLOS Glob Public Health. 2022;2(8):e0000864.
7. Kesarwani P, Tripathi AK, Kumar A, Bihari A, Srivastava A. Enablers and Barriers of Antenatal Health Utilization among Pregnant Women in India: A Comparative Scrutiny from NFHS-4 & 5. Indian Journal of Community Health. 2024;36(6):791-5.
8. Gopalakrishnan L, Patil S, Fernald L, Wssalker D, Diamond-Smith N. Association between coordinated counseling from both ASHA and Anganwadi Workers and maternal health outcomes: A cross-sectional study from Madhya Pradesh and Bihar, India. PLOS Glob Public Health. 2024;4(11):e0003639.
9. Shastri V. Birth preparedness for Safe Delivery,

readiness planning and associated factors

among mothers in North India : A Cross-

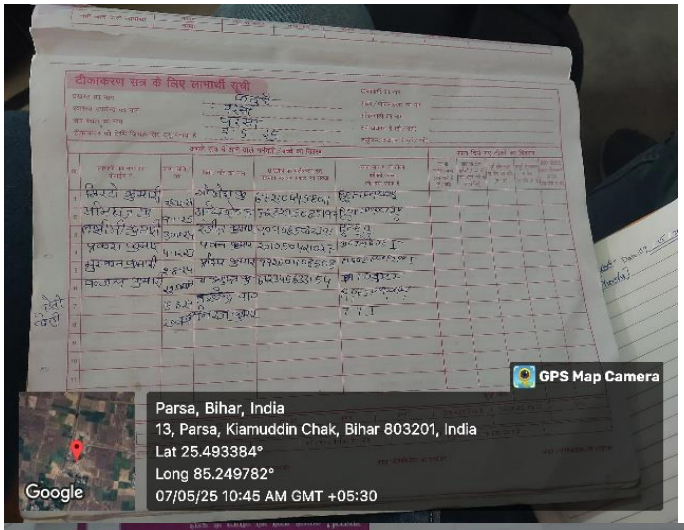
Sectional Study in Bihar India. SSRN Preprint. 2019.
10. Pandey P, Srivastava RK, Kumari K, Pandey M. Status of Birth Preparedness and Complication Readiness of Pregnant Women and Recently Delivered Women in Rural Varanasi: Assessment of Current Scenario. Indian J Community Med. 2022;47(2):249-52.

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ANNEXURES

1. https://docs.google.com/spreadsheets/d/1RxowBaaVyE3pMm_1mik94-CAWFGF9Wzz6cwzNaNtwv0/edit?usp=sharing