s

Piramal Swasthya

The certificate is awarded to

Name: **SHREYA SAUMYA**

In recognition of having successfully completed her internship in the department of **RMLE**

and has successfully completed her Project on

Title: "Introduction about RMNCAH+N in context of Bihar"

Date: **21st June 2024**

Organization: **Piramal Swasthya Management and Research Institute**

She comes across as a committed, sincere & diligent person who has a strong drive

& zeal for learning

We wish him/her all the best for future endeavours.

Organization Supervisor & Department Head

Dr Tanmay Mahapatra

Director, Data & Learning

Ms. Amita Shukla

Senior Program Manager - HR

Piramal Swasthya Management and Research Institute

CERTIFICATE OF APPROVAL

The Summer Internship Project of titled " **To Assess Reproductive, Maternal, Child, Health, and Nutrition among recently delivered women and Children aged 0-23 months in rural Bihar during 2024**" at "**Piramal Swasthya Management and Research Institute, Bihar**" 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.

Raushan

Dr. Mukesh Ravi Raushan

Associate Professor

IIHMR, Delhi

FEEDBACK FORM

Name of the Student: SHREYA SAUMYA

Summer Internship Institution: Piramal Swasthya Management and Research Institute

Area of Summer Internship: Public Health with a special focus on RMNCH+N

Attendance: Perfect adherence to internship norms.

Objectives met: Learnt Literature Review, Evidence Table Generation, Reference Management, Tool Development, Epidemiological concepts, Digital Data Management & Quality control, Determining the Themes and Sub-themes, Developing Code Dictionary, Data Collection, Data Management, Basic Quantitative Analysis and Thematic Extraction of Information from Qualitative Data.

Deliverables: -
- Visited a Health and Wellness Centre to observe its functioning and services.
- Desk review on "Maternal Nutrition and Dietary Diversity".
- Gained a foundational understanding of SAS (Statistical Analysis System).
- Participated in household surveys conducted across various districts in Bihar.
- Acquired knowledge about different research methodologies and study designs.
- Learned the fundamentals of data cleaning and management techniques.
- Visited a Sub-district hospital in Danapur, Patna, Bihar, to understand its operations.
- Engaged with ASHA workers to understand their grassroots-level contributions to healthcare.
- Documented a comprehensive report documenting the entire process and findings, including
- valuable insights gathered from the field visit.

Strengths: During this period, she displayed diligence, sincerity, cognitive excellence, protocol adherence, eye for detail, analytical skills with great learning abilities. Based on her efforts, it appears that, given the level of aptitude she has, given chance, she can become an important asset of the public health research and implementation fraternity.

Suggestions for Improvement:
Scientific writing, programmatic knowledge, advance analytics.

Signature of the Officer-in-Charge (Internship) *Tanmay Mahapatra*
Date: 12.12.24
Place: Patna

FEEDBACK FORM (IIHMR MENTOR)

Name of the Student: Shreya Saumya

Summer Internship Institution: Piramal Swasthya Management and Research Institute

Area of Summer Internship: Public Health with a special focus on RMNCH+N

Attendance: Perfect adherence to internship norms.

Objectives met: Learnt Literature review, Evidence table generation, Reference Management, tool development, Epidemiological concepts, data management ,data analysis.

Deliverables:

- Visited a Health and Wellness Centre to observe its functioning and services.
- Desk review on "Maternal Nutrition and Dietary Diversity".
- Gained a foundational understanding of SAS (Statistical Analysis System).
- Participated in household surveys conducted across various districts in Bihar.
- Acquired knowledge about different research methodologies and study designs.
- Learned the fundamentals of data cleaning and management techniques.
- Visited a Sub-district hospital in Danapur, Patna, Bihar, to understand its Operations.
- Engaged with ASHA workers to understand their grassroots-level contributions to healthcare.
- Compiled a comprehensive report documenting the entire process and findings, including valuable insights gathered from the field visit.

Strengths: Data analysis
Tool preparation
Monitoring and Supervision.

Suggestions for Improvement: Incorporating feedback from the organization and based on the feedback received during presentation specific area requires revision for the research paper to address the gap.

Signature of the Officer-in-Charge (Internship)

Date: 19-12-24

Place: New, Delhi

Summer Internship Report

at

Piramal Swasthya Foundation

(April 22nd 2024 – June 21st 2024)

By

SHREYA SAUMYA

Under guidance of :

Dr. Tanmay Mahapatra and Mr. Rajesh Kumar Dwivedi

Dr. Mukesh Ravi Raushan

PGDM (Hospital and Health Management)

2023-2025

International Institute of Health Management Research, New Delhi

ACKNOWLEDGEMENT

The internship opportunity I had with **Piramal Swasthya Foundation, Bihar** was a great chance for learning and professional development. Therefore, I consider myself a very fortunate individual as I was provided with an opportunity to be a part of it. I am also grateful for having a chance to meet so many wonderful people and professionals who led me through this internship period.

I would like to express my sincere gratitude to **Dr. Tanmay Mahapatra (Director, Data and Learning, Piramal Swasthya Management and Research Institute) , Mr. Rajesh Kumar Dwivedi(Senior RMLE leader)** for taking part in useful decisions & giving necessary advice and guidance and arranged all facilities to make my project easier. I choose this moment to acknowledge their contribution gratefully.

I am also thankful to **Mr. Vivek Vikas** for his overall supervision and **Mr. Kunal Ranjan and Mr. Alok Ranjan** for their assistance and cooperation in providing necessary information and their guidance in analysis for this report.

It is my radiant sentiment to place on record my best regards, and deepest sense of gratitude to **Dr. Sutapa Bandyopadhyay Neogi (Director, IIHMR Delhi), Dr. Sumesh Kumar (Associate Dean Academics and students Affairs, IIHMR Delhi), and my mentor Dr. Mukesh Ravi Raushan (Assistant Professor, IIHMR Delhi)** for their careful and precious guidance which were extremely valuable for my study both theoretically and practically.

I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, to attain my desired career objectives. Hope to continue cooperation with all of you in the future.

 Sincerely,

SHREYA SAUMYA

TABLE OF CONTENTS

ACRONYMS/ABBREVIATIONS

ASHA- Accredited Social Health Activist.

MCP card- Mother child protection card.

NFHS- National Family Health Survey.

NHM- National Health Mission.

THR- Take Home Ration.

IFA- Iron Folic Acid.

ANC- Antenatal care.

ANM- Auxiliary Nurse Midwife.

MDD- Minimum dietary diversity.

LBW- Low birth weight.

ICDS- Integrated Child Development Services.

MNIs- Maternal nutrition interventions.

SAS- Statistical Analysis Software.

JBSY- Janani Bal Suraksha Yojana.

NRHM- National Rural Health Mission.

RMNCHN- Reproductive Maternal Newborn Child Health & Nutrition.

SATH -Sustainable Action for transforming human capital program.

ORGANIZATION PROFILE

Piramal foundation is the philanthropic arm of the Piramal group. It develops innovative solutions to resolve issues that are critical roadblocks towards unlocking India's economic potential. India has embarked on the journey towards ensuring Universal Health Coverage and Piramal Swasthya is contributing with its experience & expertise of building innovative solutions that impact at scale.

Piramal Swasthya is focused on bridging public healthcare gaps by supplementing and complementing Government of India's vision to meet Universal Health Coverage. Piramal Swasthya is one of the largest not-for-profit organizations in India – in the primary public healthcare space with a focus on Maternal Health, Child and Adolescent Health, Non-communicable Diseases. Piramal Swasthya has over a decade-long experience in operating several healthcare innovations at scale, which are addressing the primary healthcare needs of most underserved and marginalized populations across India. Piramal Swasthya is operational in 21 States in India through 35 innovative public healthcare delivery programs and has served more than 112 Million beneficiaries so far.

Piramal Swasthya employs 2500+ employees (including over 250 medical doctors) who work with Seva Bhav.

The Group's core values of **Knowledge, Action, Care and Impact** guide the organisation in carrying out its responsibilities towards society.

The Foundation believes in collaborating with like-minded partners to bring positive changes in the society. It nurtures projects that are scalable and ensure to deliver sustainable impact.

The Foundation currently works across 21 states, mostly in partnership with state governments. It has developed innovative approaches and programmes in every vertical and has built strong partnerships with governments, technology partners and international organisations (including with Michael & Susan Dell Foundation, Harvard Graduate School of Education and World Diabetes Foundation). The projects are implemented through Piramal Swasthya, Piramal Sarvajal and Piramal Foundation of Education Leadership.

CORE WORK:

INNOVATION AT SCALE:

- Remote health advisory and intervention platform
- Community outreach platform.
- CSR partnerships.

ENDING PREVENTABLE DEATHS

- Tribal health program: unique model aiming at ending preventable deaths.

- D.E.S.H (Detect early and save him/her)- focused on screening and early detection of cancers.

BUILDING SUSTAINABILITY FRAMEWORK

- Aspirational districts transformation program

- SATH (Sustainable Action for transforming human capital) program.

- A.M.R.I.T (Accessible Medical records via integrated technologies) – A public good: Health and Wellness technology platform.

OBSERVATIONAL LEARNINGS

DESCRIPTION OF THE 2- MONTHS INTERNSHIP JOURNEY

ORIENTATION AND INTRODUCTION

Before I joined, I attended in-depth orientation seminars to become acquainted with Piramal Swasthya's goals, principles, and mission. Renowned experts Dr. Tanmay Mahapatra and Shuchi Sree Akhouri led this orientation. Things that were relevant to our interests and in the public domain were forwarded to us. Additionally, we were assigned an overall analytical supervisor and a mentor for the duration of our stay at Piramal Swasthya. Their extensive industry expertise in the healthcare industry provided a strong basis for understanding Piramal's important contributions. Our understanding of the roles played by the researchers, medical professionals, and administrative workers within the company was further improved by the opportunity to get to know them as key team members.

Our internship included structured learning sessions held on Mondays, Wednesdays, and Fridays. SAS software: I gained an understanding of the fundamentals of SAS software, with an emphasis on data analysis, recoding, and syntax. This featured hands-on activities that improved my comprehension of how to use SAS, a vital tool for every data analyst, to alter and analyse data.

Microsoft Excel: I received instruction in data management strategies using VLOOKUP, HLOOKUP, pivot tables, conditional formatting, and data validation in Microsoft Excel. These abilities are essential for effectively organising and evaluating huge datasets.

Research Methodologies and Epidemiology: I learned about a variety of research methodologies and epidemiology. This involved becoming knowledgeable about several study designs, including cross-sectional, cohort, and case-control studies. Important epidemiological ideas such as relative risk, incidence, and prevalence were also covered to me. Comprehending these techniques is essential to carrying out reliable and valid research.

Learnings from the different sessions

Week 1:
Overview of SAS Installation: Acquired knowledge on how to install and configure SAS software.
Data Cleaning and Management Introduction: Discussed fundamental methods for cleaning and organising data.
Research methodology:learned about prevalence, incidence rate, and risk ratio.

Week 2:
SAS Interface: Comprehensive instruction on the SAS interface, encompassing log, result, and code windows; acquired knowledge on building libraries and importing data.
Data Cleaning and Management : I gained knowledge about managing and cleaning raw data in SAS and computed BMI.
Research methodology: we studied risk ratio, incidence proportion, groups that are exposed and those who are not, as well as people at risk.

Week 3:
Excel Pivot Tables: Various charts and pivot tables were created.
SAS functions: Acquired knowledge of fundamentals including PROC SORT, PROC FREQ, and PROC MEAN.
Questionnaire Design: Acquired knowledge of the format and went over a toolkit pertaining to questionnaires on mother and child health.

Week 4:
Excel Conditional Formatting: Applied conditional formatting in Excel.
Recoding in SAS: Learned recoding techniques in SAS.
Study Designs: Gained an understanding of various study designs, including cohort, case-control, cross-sectional, and ecological studies.

Week 5:
Data Validation in Excel: Learned data validation techniques.
Sociodemographic Indicators: Identified indicators from maternal and child health questionnaires.
Study Designs: Continued discussions on different study designs.

Week 6:
Excel Functions:SUBTOTAL, SUM, MAX, MIN, and AVG functions were utilised in Excel.

SAS:Recoded sociodemographic factors and calculated frequencies in SAS.

RM: A thorough presentation on qualitative and quantitative study designs and how they are used in research will be given.

Week 7:

Data Cleaning and Management : Acquired knowledge of Excel's VLOOKUP and HLOOKUP lookup capabilities.

SAS Indicator matrix: Comprehended the process of identifying variables and providing definitions for diverse indicators seen in questionnaires related to mother and child health.

RM: Confounding factors and incidence rate: keep studying more about these subjects.

Week 8:

Data Cleaning and Management: COUNTIF, SUMIF, and IF functions were learned in Excel.

RM: The research methodology covered various problems including temporal ambiguity, incubation period, differential recollection bias, data validity, precision, and ecological fallacy.

SAS Descriptive Analysis: Used SAS software to do descriptive analysis on a range of indicators.

MODE OF DATA COLLECTION:

During the internship period, we went to field visits including visits to the rural villages for household surveys and institutional visits like sub-divisional hospital visits.

FIELD VISIT (HOUSEHOLD SURVEY)

Date: 26th April 2024

Location: Biharsharif, Nalanda District, Bihar

Introduction:

This report presents the household survey that was carried out in Nalanda District on April 26, 2024, for the Maternal and Child Health (MCH) programme. Data on mothers and children ages (0–5 months and 29 days & 6-11 months 29 days) were intended to be collected through the survey.

Listing Procedures:

The household list followed these guidelines:

> **Directions & Random table:** We listed houses in a systematic manner, starting from the right side of the block (also known as right hand thumb rule).

Within the selected segment, the first house was chosen at random using a table. [Selection of the household survey list is done from AWC -> List of household -> Index house -> Selection of first household and rest by using right hand thumb rule -> every fourth house is selected by systematic random sampling method.]

First household visit: Child(0-5 months 29 days)

In the initial interview the mother and the child were involved[ranging in the age group from (0-5 months 29 days)]. It consisted of major instruments mentioned below:

1. Basic household details: It includes the basic demographic details about the respondent's and household characteristics.
2. ANC & Birth Preparedness: The mother's ANC during her pregnancy was the main topic of this section. The significance of the "4Cs" for safe delivery was made clear by us: Clean Needle, Clean Thread, Clean Cloth, and Clean Blade.
3. Newborn Care (NBC): The practices around newborn care were evaluated in this area.
4. Postnatal & nursing Practices: Questions regarding nursing and postnatal care were addressed in this section.

Important Topics for Discussion:
- MCP Card: An ASHA employee gave the mother her MCP card in the fourth month of her pregnancy.
- Take Home Ration (THR): The mother started receiving THR during her fourth month of pregnancy.
- Government Services: Concerns over the purchase of IFA tablets and other government services were mentioned.
- Institutional Delivery: We evaluated the extent to which staff from Anganwadi or ASHA supported institutional delivery
- Vitamin K and Uterotonic Drugs: The mother's knowledge and awareness of these two items were investigated.
- The mother's level of awareness regarding Kangaroo Mother Care (KMC) was assessed.
- Initiation of Breastfeeding: According to the mother, breastfeeding began 24 hours after the baby was born.
- Bathing a newborn: Two days after birth, the first bath was given at home.

Second household visit: Child (6-11 months 29 days)

Within the specified age range (6-11 months 29 days), a mother and her child participated in the second interview. The questionnaire consisted of four sections.

Sections of the Interview Tool

1. The characteristics of the household and respondent
2. Practices for Complementary feeding and Breastfeeding
3. Childhood Disease And Immunization
4. Pregnancy-related contraception and family planning

Key Discussion Points:

- According to the "take home ration" protocol, the woman was not provided the ration by the AWC during her pregnancy, and it was not given to the infant until recently.
- During her pregnancy, the mother received IFA tablets from ASHA; however, she did not finish them all since each time she took them, she experienced nausea.
- ASHA and ANM did not provide any recommendations or suggestions about how to care for a baby or what the mother and infant should eat.
- The ASHA performed three visits for the ANC on schedule, and the family was happy with the services provided. Because the ASHA or ANM did not supply IFA pills, and because the woman was unaware of the significance of the supplements, she did not take any IFA tablets during her pregnancy.
- Up to the age of nine months, the infant was solely nursed; in the sixth month, he was meant to start taking semi-solid food.

Third household visit: Child (12-23 months 29 days)

Within the specified age range (12-23 months 29 days), a mother and her child participated in the second interview. The questionnaire consisted of four sections.

Sections of the Interview Tool
1. The characteristics of the household and respondent
2. Practices for Complementary feeding and Breastfeeding
3. Childhood Disease And Immunization
4. Pregnancy-related contraception and family planning

Key Discussion Points:
- The respondent was the mother of a 12-to 23-month-old child who had spent the previous four months living with her parents.
- There hasn't been a godbharai ritual carried out according to protocol.

- All vaccinations were administered at Anganwadi, however the MCP card showed that they weren't delivered on time.
- The infant's weight and height were not noted at the time of immunization.
- The child's birth weight was first recorded as 1.5 kg, but the MCP card confirmed that it was actually 2.5 kg.
- The mother did not know about THR.
- Under the JSY scheme, the mother did not receive any money.

Confidentiality Assurance:

Prior to and following the interview, we conveyed our gratitude to the participants and guaranteed the confidentiality of their data.

Conclusion:

At last, I would like to say that the home survey visit to Bihar Sharif gave me a thorough understanding of how to carry out an in-depth survey on the health of mothers and children. Comprehending the questionnaire's structure and watching the data collection procedure were wonderful learning opportunities. The results can be utilized to pinpoint problem areas and create focused treatments that will improve mother and child health outcomes.

FACILITY VISIT: SUB-DIVISIONAL HOSPITAL DANAPUR

Date: May 14, 2024

Location: Sub-Divisional Hospital, Danapur.

Facilitator: Prashant sir

This report contains the specifics of my facility visit to the Sub-Divisional Hospital in Danapur, where I got the chance to discover how a government hospital in Bihar operates. Prashant Sir, who organised the visit on behalf of the organisation, gave us insight into how the SDH operations are carried out. When we arrived at the hospital at around 11 a.m., Mrs. Seema Ma'am, the manager, welcomed us and explained her role as a pioneer and a solid pillar supporting the well-maintained, effective hospital facilities. We asked her questions about how the hospital operates and what each department's duty is, and she calmly and properly responded to all of them. The following summarises our main takeaways from the visit:

- The primary focus of this sub-divisional hospital is on maternity and child health in the in-patient department, while all patient types are handled in the out-patient department.
- Although the hospital does not have outreach services, it has given immunisations to the military hospital that is closest to it.

- The hospital personnel work in three shifts, with the morning and afternoon shifts lasting six hours each and the night shift lasting twelve. The hospital is open twenty-four hours a day.
- The hospital has 50–60 beds in the patient department and serves approximately 50,000 to 1 lakh people.
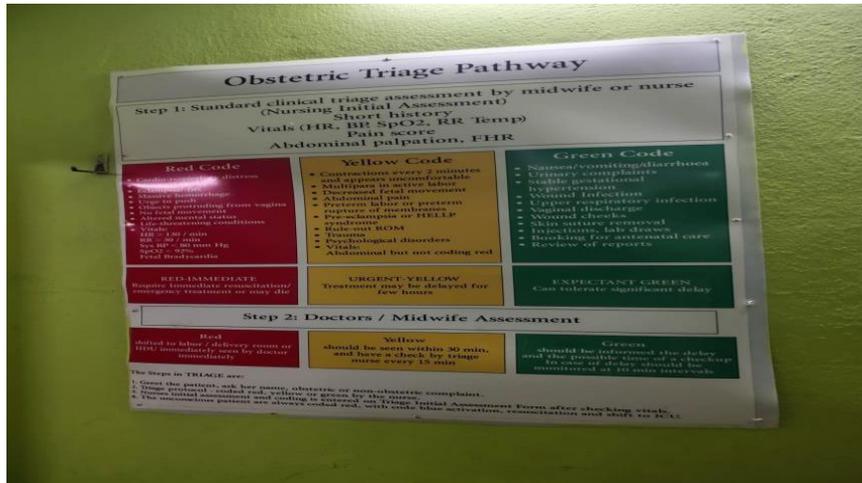
- There are facilities for blood storage as well as access to all diagnostic procedures.
- Four beds are available for delivery in the labour room, and one more bed is accessible in the triage area in case of emergency.
- The triage method is explained to us, and we see patients being divided up based on whether or not they require medical attention. The red signal indicates urgent care, the yellow code indicates immediate care, and the green code indicates expectant care, when the patient may bear an extended wait..
- The Kangaroo Mother Care (KMC) facility has two beds for the care of preterm babies, and the NewBorn Stabilisation facility (NBSU) is for keeping the baby after birth.
- The beneficiaries of the Janani Suraksha Yojana (JSY) and Janani Shishu Suraksha Karyakram (JSSK) schemes are eligible to receive up to 2400 rupees.
- Antenatal care can be provided to expectant mothers prior to delivery. A department is responsible for monitoring prenatal visits and providing pregnant women with a balanced food plan to ensure a healthy baby.
- Additionally, a section dedicated to immunizing newborns is in place to ensure that every baby receives their first dose of vaccinations. Every vaccine is stored in cold chain freezers between 2 – 80 c. The responsible sister has a tracker on her phone that allows her to monitor the vaccination inventory and receive text alerts if there are any problems keeping the temperature stable.

- The hospital also has a family planning department that offers qualified couples family planning advice. Make them understand that you are having a second child nearly three years after the first. They also advise the use of MALA-N and CHHAYA, two types of contraceptive tablets. Moreover, women can profit financially from tubectomy and IUCD contraception.

Following our visit, we had a basic idea of how the hospital operated. We are aware of the significance of an SDH for those in the population without sufficient finances to receive better care. A system can function properly even with limited workspace, manpower, and resources if coordination and seamless service transitions are the sole factors in place.

VISIT TO HEALTH AND WELLNESS CENTER : BHAUSAULA, DANAPUR

Date of visit- 18.06.2024

Location- Health and wellness center, Bhausaula, Danapur near AIIMS.

Population covered- 10,206(Covering 6 villages)

Staff-

- Community Health Officer (CHO) (1)
- Auxiliary Nurse midwives (ANM) (2)
- ASHA workers (8)

Principal Results:

Services Provided:

i)Services offered by the Outpatient Department (OPD)

- ❖ Vital medications
- ❖ Childhood immunisations and vaccinations (0-5 years)

ii)The corner of non-communicable diseases (NCDs)

iii) Standard laboratory testing (weighing machine, nebulizer)
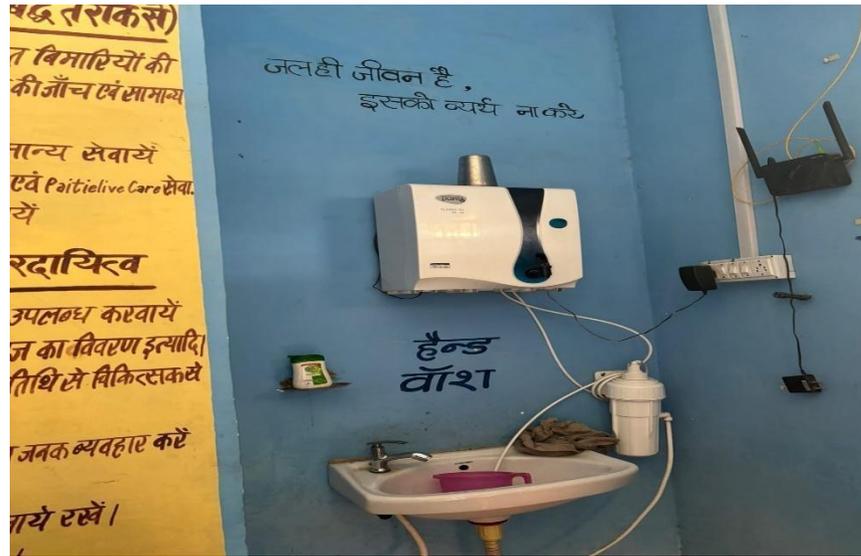
• Function of an ASHA Worker:

● The Janani Bal Suraksha Yojana (JBSY) initiative for children and pregnant mothers (0–5 months)
● Visits to pregnant mothers at home
● Essential supplies (IFA tablets,Calcium tablets) Follow-up care.
● Encouraging institutional delivery
● Counseling for family planning
● Distribution of free condoms

Last month, 250 telemedicine consultations were conducted through the e-Sanjeevani scheme.

Manages vaccination campaigns and maintains a record of expiration dates, provides home visits and follow-up care for the JBSY programme, and educates mothers regarding child care and nutrition.

In the end, the tour of the Bhusaula Danapur Health and Wellness Centre highlights the critical role that these establishments play in providing basic medical care to the rural communities of India. The focus on vaccination, non-communicable diseases, and mother and child health demonstrates a commitment to preventative and promotional healthcare. The utilisation of telemedicine services further enhances patient access to care.

EXPERIENCE FROM THE PROJECTS/ACTIVITIES WE WERE ENGAGED

Along with our project topic we were also engaged with Powerpoint presentation of household survey which was conducted in rural bihar

OVERALL LEARNINGS:

During the internship period of two months we have learnt about different programs and various key roles which includes:

- Creation of a PowerPoint template for household survey.
- Involved in learning about tool development questionnaires.
- Went on field visits to gain insight into the practical aspects of maternity and child health as well as the administration of government initiatives.
- A basic understanding of Excel's functions.
- Basic comprehension of the SAS programme through the creation of variables based on the appropriate age group and the use of data compilation.
- Interacting with and gaining knowledge from others with varying backgrounds.

LIMITATIONS:

During our two-month internship, completing a full research project is challenging due to limited time for proper data analysis. Although we have access to data collection resources, thorough analysis is difficult. We visited institutional delivery sites and rural villages for household surveys, focusing on child health, specifically the history of diarrhea and ARI, and their management among infants aged 0-11 months. We worked with a questionnaire tool but lacked experience in its development. Some limitations observed include potential recall bias from mothers or primary caregivers, as there is no medical confirmation of symptoms. Therefore, the findings may contain errors based on assumptions made by the mothers.

DESK REVIEW

Background

Globally, maternal and child nutrition is vital for meeting sustainable development goals, as poor maternal nutrition can lead to negative health outcomes such as low birth weight, stunted growth, and nutrient deficiencies. Many countries have integrated nutrition interventions into their health systems to promote better dietary practices and health outcomes. These interventions include encouraging diverse diets, providing essential micronutrients like iron, folic acid (IFA), and calcium, and offering counseling on diet and breastfeeding.

In India, addressing maternal and child nutrition is particularly challenging due to its diverse socio-economic and cultural landscape. Various studies highlight the need for improved dietary diversity and nutrient intake among pregnant and lactating women, especially in marginalized communities.

Research in the tribal-dominated Palghar district of Maharashtra assessed the dietary patterns of lactating mothers in 2020. It revealed that many mothers struggle to achieve Minimum Dietary Diversity (MDD) and lack access to essential food groups, leading to risks of nutrient deficiencies. The study underscored the role of income and health counseling in improving dietary diversity.[1]

In Uttar Pradesh, a study examined the impact of socio-economic factors on the dietary diversity of pregnant women and the relationship between maternal diet and low birth weight (LBW). It identified factors that enable or hinder the adoption of recommended diets and reviewed policies aimed at improving dietary intakes.[2]

In Delhi's urban poor settlements, research explored how pregnant and lactating women use nutrition-related services provided by the Integrated Child Development Services (ICDS). It identified socio-demographic factors affecting the utilization of these services.[3]

A broader evaluation of antenatal care (ANC) policies and programs in India, as well as in Bangladesh, Burkina Faso, and Ethiopia, compared national protocols with global recommendations. The study found gaps in implementing maternal nutrition interventions (MNIs) such as micronutrient supplementation, weight gain monitoring, and dietary counseling. It highlighted barriers like micronutrient supply disruptions and insufficient counseling and emphasized the need for comprehensive nutrition protocols and improved health systems.[4]

Overall, maternal nutrition practices in India are influenced by socio-economic factors, access to health services, and the effectiveness of national programs. There is a clear need for targeted

interventions, better health counseling, and comprehensive policies to enhance dietary diversity and reduce nutrient deficiencies among pregnant and lactating women. Improved monitoring and accountability within health systems are crucial for achieving better nutrition outcomes for mothers and children.

KEY FINDINGS FROM THE LITERARTURE REVIEW

1. Lactating mothers in Palghar predominantly consume grains, white roots, tubers, and pulses, with a very low intake of dairy, eggs, and non-vegetarian foods. Nearly half of these mothers lack dietary diversity, relying mostly on a limited range of food groups. Dietary diversity is notably higher among mothers from wealthier households. Access to certain food groups, such as fruits, meat, poultry, fish, nuts, and seeds, is particularly challenging for these mothers. Health and nutrition counseling have been shown to significantly increase the likelihood of a diversified diet among lactating mothers. Additionally, improving access to dairy products and raising awareness about the importance of diverse diets are essential for addressing micronutrient deficiencies and enhancing both maternal and child nutrition.[1]

2. Maternal diets in India are generally inadequate, characterized by low energy, imbalanced macronutrients, and insufficient micronutrients. There is significant variation in dietary intake across different states. Major barriers to proper nutrition include economic constraints, food taboos, and social norms, with family members playing a significant role in influencing dietary choices. While interventions such as the ICDS food programs, behavior change communication (BCC) strategies, and nutrition-sensitive agriculture are critical, their effectiveness has not been thoroughly evaluated.[2]

3. Approximately 51% of newborns were reported as having low birth weight (LBW). Among the respondents, 79% resided in urban areas and 21% in rural areas. In terms of caste and religion, 17% belonged to Scheduled Castes/Tribes, 36% to other disadvantaged/lower socioeconomic castes, and 46% to the General category, with 83% being Hindu and 17% Muslim. Household incomes were divided into low, medium, and high tertiles. Educationally, 53% had completed Intermediate or higher education, 27% had high school education, and 19% had no formal education. During pregnancy, 59% of the women were not weighed, and those who were weighed showed varied distributions. Additionally, 57% reported pregnancy complications such as diabetes and anemia. Regarding parity, 44% were experiencing their first pregnancy, 34% had one previous child, and 22% had two or more children.[3]

4. A comprehensive analysis of the factors influencing maternal nutrition practices in Uttar Pradesh, India, considering individual, family, community, and health service levels. We found that each specific practice—like dietary diversity, consumption of iron and calcium supplements, and weight monitoring during pregnancy—was influenced by unique

factors. Key determinants included maternal knowledge, beliefs, family support, access to health services, and adherence to counseling. Implementing programs effectively could potentially increase dietary diversity by 33%, improve iron and calcium supplement intake, and enhance weight monitoring significantly. It is crucial to implement policies such as the Pradhan Mantri Surakshit Matritva Abhiyan and maternity benefits scheme to ensure adequate ANC visits and micronutrient supplementation. These initiatives are vital for addressing maternal under-nutrition and improving maternal and child health outcomes in India.[4]

5. The use of ICDS supplementary nutrition services by pregnant and lactating women in an urban resettlement and slum colony in Delhi, India. It found that more than half of the eligible women did not utilize these services, with low utilization rates similar to those reported in previous national surveys. Factors such as household convenience, accessibility, lack of time, poor communication, and distance to service centers were identified as barriers to utilization. The study also noted that all participants were calorie deficient, with no significant association between ICDS utilization and socioeconomic status or education. Limitations included reliance on self-reported data, potential bias from the timing of data collection during the COVID-19 pandemic and an AWW protest, and the use of a 24-hour dietary recall method. The study did not assess household food security, long-term dietary habits, or other ICDS functions like immunization and growth monitoring.[5]

6. Maternal nutrition interventions (MNIs) within antenatal care (ANC) protocols across Bangladesh, Burkina Faso, Ethiopia, and India lack specificity and clarity.ANC protocols often do not align consistently with global recommendations, especially regarding counseling on adherence to micronutrient supplementation, weight gain monitoring, dietary counseling, and breastfeeding support.National policies prioritize ANC services over nutrition interventions, leading to gaps in accountability for quality and coverage of MNIs.Data from national surveys and monitoring systems frequently lack essential process indicators needed to effectively track nutrition interventions within ANC.Effective implementation of MNIs faces challenges such as micronutrient stock-outs, deficiencies in information systems, and inadequate community engagement.Demand-side issues include late ANC attendance and poor adherence to recommended practices due to knowledge gaps and insufficient family support[6].

7. Nutrition Services During COVID-19: Despite the pandemic, enhanced nutrition services improved dietary diversity in pregnant and breastfeeding women, and increased early initiation and exclusive breastfeeding among children.

   Challenges in Implementation: The COVID-19 pandemic disrupted health service delivery and utilization, especially services requiring close contact, resulting in a significant decline in service usage.

Adaptation Measures: Remote capacity building, mobile counseling, and hybrid supervision methods were implemented to continue nutrition services during the pandemic, which led to improved dietary diversity and breastfeeding practices.

Effect on Dietary Diversity: Improved dietary diversity was observed among pregnant women and children, similar to improvements seen in rural Bangladesh and Ethiopia, but differing from results in India and Burkina Faso.

Supplement Consumption: The intervention had no effect on IFA and calcium consumption during pregnancy, contrasting with previous studies in other countries that showed increases in supplement consumption.Early Initiation and Exclusive Breastfeeding: The intervention led to significant improvements in early initiation and exclusive breastfeeding, addressing gaps related to breastfeeding support immediately after birth.[7]

SECONDARY DATA ANALYSIS ON RNMCHN IN CONTEXT OF BIHAR

INTRODUCTION:

The reproductive, maternal, newborn, child health, and nutrition programs form the core of the National Rural Health Mission (NRHM). The Government of India has implemented a comprehensive strategy to improve maternal health and child survival. This approach connects various initiatives and actions that address each life stage, from conception to healthy future survival. The focus is on developing programs for underserved groups such as adolescents, tribal communities, and economically disadvantaged individuals in urban areas[8]. In February 2013, the Ministry of Health & Family Welfare launched the Reproductive, Maternal, Newborn, Child, Adolescent Health, and Nutrition (RMNCAH+N) initiative following the Government of India's "Call to Action (CAT) Summit." This program aims to implement key interventions to reduce maternal and child morbidity and mortality.

The RMNCAH+N strategy is based on the continuum of care concept, providing a comprehensive framework that includes all interventions related to reproductive, maternal, newborn, child, adolescent health, and nutrition. It emphasizes a strategic lifecycle approach, promoting integration across various interventions to enhance coverage throughout the lifecycle and improve child survival rates in India. The "plus" in RMNCAH+N underscores:

- Recognizing adolescence as a distinct life stage within the overall strategy.
- Connecting maternal and child health to reproductive health and other components such as family planning, adolescent health, HIV, gender, and preconception and prenatal diagnostic techniques.
- Linking home and community-based services with facility-based services.
- Ensuring connections, referrals, and counter-referrals between various levels of the healthcare system to create a continuous care pathway and achieve synergistic outcomes.

Key features of the RMNCAH+N strategy include:

1. **Health Systems Strengthening (HSS):** Emphasizing improvements in infrastructure, human resources, supply chain management, and referral transport.
2. **Prioritization of High-Impact Interventions:** Focusing on different stages of the lifecycle to maximize health outcomes.
3. **Increasing Investment Effectiveness:** Allocating resources to geographical areas based on evidence to ensure maximum impact.
4. **Integrated Monitoring and Accountability:** Ensuring good governance by using available data sets, involving the community, and addressing grievances.
5. **Broad-Based Collaboration:** Partnering with various ministries, departments, development partners, civil society, and other stakeholders for a cohesive effort.

The RMNCAH+N strategy offers a robust platform for delivering services across the entire continuum of care, from community settings to various levels of the healthcare system [9].

Our study aims to assess the effectiveness of RMNCHN programs and initiatives in Bihar, India. As one of the country's poorest and most densely populated states, Bihar's health system has struggled with systemic deficiencies for decades. In 2010, the Ananya program was launched with support from the Bill and Melinda Gates Foundation, implemented by CARE India in collaboration with the Government of Bihar, to improve RMNCHN services across 38 districts. At the time, public health services in Bihar were severely lacking due to inadequate and fragile healthcare infrastructure, a shortage of skilled healthcare providers, and insufficient essential supplies and equipment. The reproductive, maternal, newborn, child health, and nutrition services were particularly poor in rural areas, where 90% of the population resides. The state reported alarmingly high maternal and newborn mortality rates in 2010-2011, with 305 deaths per 100,000 mothers and 35 deaths per 1,000 babies, primarily due to inadequate emergency obstetric and newborn care (EmONC) services. The Ananya initiative aimed to enhance the effectiveness of EmONC services in hospitals to reduce mortality rates. It also sought to improve healthcare access, outreach, and health practices within families. Initially launched in eight districts, the program successfully expanded to cover the entire state by 2014, with additional support.[10].

In 2024, despite advancements over the years, rural Bihar still faces substantial hurdles in several areas.

Context and Challenges - Bihar, one of India's most populous and socioeconomically deprived states, faces high malnutrition rates, maternal and child mortality, and limited access to quality healthcare, particularly in rural areas. Poverty, insufficient healthcare facilities, and sociocultural factors exacerbate these issues.

Maternal Health- Maternal health is a significant concern in rural Bihar. High maternal death rates are often due to inadequate prenatal care, a lack of emergency obstetric services, and limited access to skilled birth attendants. Despite efforts to increase institutional births, many deliveries still occur at home without proper medical support.

Infant and Child Health - Newborn and child health indicators in rural Bihar show room for improvement. High neonatal mortality rates are linked to poor maternal health, inadequate postnatal care, and insufficient infant care practices. Common pediatric diseases like pneumonia and diarrhea significantly contribute to child mortality rates.

Nutrition- Malnutrition is widespread in rural Bihar, affecting children, adolescents, pregnant women, and infants. High rates of anemia, wasting, and stunting are prevalent among children, while mothers and adolescents suffer from multiple micronutrient deficiencies. Programs like Take-Home Rations (THR) and Iron-Folic Acid (IFA) supplements are important but need expansion and enhancement.

Governmental and Non-Governmental Initiatives - The Bihar government, in collaboration with international organizations and NGOs, has launched several initiatives to address these issues. Programs like the National Health Mission (NHM), Integrated Child Development Services (ICDS), and Janani Suraksha Yojana (JSY) aim to improve maternal and child health outcomes through financial incentives for institutional deliveries, better access to healthcare services, and nutrition programs.

As of 2024, the rural Bihar RMNCHN landscape reflects both significant challenges and progress. Ongoing efforts are essential to strengthen healthcare infrastructure, raise community awareness, and ensure the effective implementation of health and nutrition programs. Addressing these critical issues can significantly enhance the health and well-being of Bihar's rural population.

OBJECTIVE OF THE STUDY

To gain insights into key RMNCHN practices among recently delivered women and children aged 0-23 months in rural Bihar in 2024.

METHODOLOGY:

Secondary data analysis was done from NFHS study conducted in Bihar.

STUDY AREA- 13 districts of Bihar selected randomly from 9 Commissionerate.

TARGET POPULATION- mothers of 0-5, 6-11, 12-23 months old children.

SAMPLE SIZE- 2,250 interviews per category (0-5 months, 6-11 months, and 12-23 months).

SOCIO DEMOGRAPHIC VARIABLES:

Gender: The gender of children was categorized into two groups: boys and girls. For each group, frequency, percentage, and confidence intervals were calculated.

Religion: The religion of recently delivered mothers was classified as Hindu or Others, with frequency, percentage, and confidence intervals computed for each category.

Mother's Age: Mothers were divided into three age groups: less than 24 years, 25-34 years, and 35 years and above. Frequency, percentage, and confidence intervals were calculated for each group.

Caste: The caste variable was categorized into marginalized and non-marginalized groups. Frequency, percentage, and confidence intervals were calculated for each category.

Family Type: This socio-demographic variable was divided into joint and nuclear families, with frequency, percentage, and confidence intervals calculated for each type.

Mother's Education: Mothers' education was categorized into three groups: illiterate, up to 8th class, and more than 8th class. Frequency, percentage, and confidence intervals were calculated for each category.

Father's Education: Similarly, fathers' education was divided into illiterate, up to 8th class, and more than 8th class, with frequency, percentage, and confidence intervals calculated for each group.

Mother's Occupation: Mothers' occupations were categorized into five sections: unemployed, agricultural, non-agricultural, business, and salaried employee. Frequency, percentage, and confidence intervals were calculated for each category.

Father's Occupation: Fathers' occupations were similarly divided into unemployed, agricultural, non-agricultural, business, and salaried employee sections, with frequency, percentage, and confidence intervals calculated.

Husband's Migration: Women reported whether their husbands were migrants or non-migrants, and frequency, percentage, and confidence intervals were calculated accordingly.

SHG Membership: Women or their family members' membership in any social health group was noted, and frequency, percentage, and confidence intervals were calculated.

Living Children: This variable determined if women had one, two, three, or more than three living children. Frequency, percentage, and confidence intervals were calculated for each category.

Place of Delivery: The delivery place was categorized as public facility, private facility, or home delivery. Frequency, percentage, and confidence intervals were calculated.

Type of House: Houses were categorized as kachcha, pucca, or semi-pucca, with frequency, percentage, and confidence intervals calculated for each type.

RMNCHN Indicators:

Various RMNCHN indicators were assessed for frequency and percentage under different labels.

MCP Card: The percentage of pregnant women who received MCP cards was calculated along with frequency and percentage.

ANC (Antenatal Care): The percentage of pregnant women who received any antenatal check-up during their last pregnancy was calculated, along with frequency and percentage.

Received ANC 3 or More Times: The percentage of pregnant women who received antenatal check-ups three or more times was calculated, along with frequency and confidence intervals.

Received ANC 4 or More Times: Similar calculations were made for those who received antenatal check-ups four or more times.

Received IFA Tablets: The percentage of pregnant women who received IFA tablets during their last pregnancy was calculated, along with frequency and confidence intervals.

Received 90 or More IFA Tablets: The percentage of pregnant women who received 90 or more IFA tablets was calculated, along with frequency and confidence intervals.

Consumed 90 or More IFA Tablets: The percentage of pregnant women who consumed 90 or more IFA tablets was calculated, along with frequency and confidence intervals.

Received THR (Take Home Ration): The percentage of pregnant women who received THR during their last pregnancy was calculated, along with frequency and confidence intervals.

Institutional Delivery: The percentage of births in institutions (government or private) for mothers with children aged 0-5 months was calculated, along with frequency and confidence intervals.

Skin to Skin Care (STSC): The percentage of children aged 0-5 months who received skin-to-skin care after birth was calculated, along with frequency and confidence intervals.

Baby's Weight: The percentage of children aged 0-5 months who were weighed at birth was calculated, along with frequency and confidence intervals.

Timely Initiation of Breastfeeding: The percentage of children aged 0-5 months who began breastfeeding within 1 hour of birth was calculated, along with frequency and confidence intervals.

Exclusive Breastfeeding: The percentage of children aged 0-5 months who were exclusively breastfed in the last 24 hours was calculated, along with frequency and confidence intervals.

Breastfeeding for 6-11 Months: The percentage of children aged 6-11 months who were breastfed was calculated, along with frequency and confidence intervals.

Complementary Feeding: The percentage of children aged 6-11 months who started complementary feeding (their first meal other than breastfeeding) was calculated, along with frequency and confidence intervals.

Contraceptive Use: The percentage of recently delivered women with children aged 12-23 months who used any contraceptive method was calculated, along with frequency and confidence intervals.

Modern Contraceptive Use: The percentage of recently delivered women with children aged 12-23 months who used modern contraceptive methods was calculated, along with frequency and confidence intervals.

Traditional Contraceptive Use: The percentage of recently delivered women with children aged 12-23 months who used traditional contraceptive methods was calculated, along with frequency and confidence intervals.

All results were calculated using SAS software, and the analysis findings are detailed in the results section.

RESULTS:

The observation findings are based on the data collected from the recently delivered mothers of three different age groups (0-5 months of age, 6-11 months of age and 12-23 months of age). We divided the findings into two categories based on the indicators i.e. sociodemographic indicators and RMNCHN indicators.

Sociodemographic variables:

Description	Frequency(n)	Percentage (%)	Lower confidence limit (LCL)	Upper confidence limit (UCL)
Age of mother				
<=24	1426	63.38	61.39	65.37
25-34	770	34.22	32.26	36.18
>=35	54	2.40	1.77	3.03
Gender of child				
Boys	1194	53.07	51.00	55.13
Girls	1056	46.93	44.87	49.00
Religion				
Hindu	1930	85.78	84.33	87.22
Non- Hindu	320	14.22	12.77	15.66
Caste				
Marginalized	685	30.44	28.54	32.35
Non- Marginalized	1565	69.55	67.65	71.45
Family type				
Nuclear	883	39.24	37.23	41.26
Joint	1367	60.75	58.73	62.77

Mother's education				
Illiterate	782		34.76	32.79	36.72
Upto 8th	510		22.67	20.94	24.40
More than 8th	958		42.58	40.53	44.62
Father's education				
Illiterate	687		33.16	31.13	35.19
Upto 8th	487		23.50	21.68	25.33
More than 8th	898		43.34	41.20	45.48
Mother's occupation				
Unemployed	2140		95.11	94.22	96.00
Agricultural	23		1.02	0.61	1.44
Non-agricultural	38		1.69	1.16	2.22
Business	22		0.98	0.57	1.38
Salaried	27		1.20	0.75	1.65
Father's occupation				
Unemployed	79		3.54	2.77	4.31
Agricultural	189		8.48	7.32	9.63
Non-agricultural	1063		47.67	45.59	49.74
Business	308		13.81	12.38	15.24
Salaried	591		26.50	24.67	28.34

Husband's migration				
Non-migrant	1966		87.38	86.00	88.75
Migrant	284		12.62	11.25	14.00
SHG membership				
Yes	1120		49.78	47.71	51.85
No	1130		50.22	48.15	52.29
Living child				
1 child	758		33.69	31.73	35.64
2 children	674		29.96	28.06	31.85
3 children	461		20.49	18.82	22.16
More than 3 children	357		15.87	14.36	17.38
Place of delivery				
Public	1457		64.76	62.78	66.73
Private	484		21.57	19.81	23.21
Home	309		13.73	12.31	15.16
Type of House				
Kachcha	398		17.69	16.11	19.27
Semi-Pucca	1270		56.44	54.39	58.49
Pucca	582		25.87	24.06	27.68

The socio-demographic characteristics of the study participants are outlined in Table 1.

Gender Distribution

Boys constituted 53.07% (n=1194) of the total participants, while girls made up 46.93% (n=1056).

Mother's Age

A majority of the mothers, 63.38% (n=1426), were aged 24 years or younger. Those aged between 25 to 34 years comprised 34.22% (n=770), and 2.4% (n=54) were aged 35 years or older.

Religion

The majority of participants identified as Hindu, representing 85.78% (n=1930) of the sample. The remaining 14.22% (n=320) were from non-Hindu religious backgrounds.

Caste

Regarding caste distribution, 30.44% (n=685) were from marginalized castes, while 69.56% (n=1565) belonged to non-marginalized castes.

Family Type

Most participants came from joint families (60.76%, n=1367), whereas 39.24% (n=883) lived in nuclear families.

Mother's Education

In terms of mothers' educational attainment, 34.76% (n=782) were illiterate, 22.67% (n=510) had education up to the 8th grade, and 42.58% (n=958) had education beyond the 8th grade.

Mother's Occupation

A large majority of the mothers, 95.11% (n=2140), were unemployed. Among those employed, 1.02% (n=23) were agricultural laborers, 1.69% (n=38) were non-agricultural laborers, 0.98% (n=22) were involved in business, and 1.2% (n=27) held salaried positions.

Father's Education

For fathers' education levels, 33.16% (n=687) were illiterate, 23.5% (n=487) had education up to the 8th grade, and 43.34% (n=898) had education beyond the 8th grade.

Father's Occupation

Among fathers, 3.51% (n=79) were unemployed. A significant portion, 47.24% (n=1063), were non-agricultural laborers, 8.4% (n=189) were agricultural laborers, 13.69% (n=308) were involved in business, and 27.16% (n=611) held salaried positions.

Place of Delivery

Regarding place of delivery, 64.76% (n=1457) of births occurred in public health facilities, 21.51% (n=484) in private health facilities, and 13.73% (n=309) took place at home or in transit.

House Type

Concerning housing type, 17.69% (n=398) lived in kachcha (temporary) houses, 56.44% (n=1270) in semi-pucca (semi-permanent) houses, and 25.87% (n=582) in pucca (permanent) houses.

Self-Help Group Membership

The distribution of Self-Help Group membership was almost even, with 49.78% (n=1120) being members and 50.22% (n=1130) not being members.

Number of Living Children

Examining the number of living children per family, 33.69% (n=758) had one child, 29.96% (n=674) had two children, 20.49% (n=461) had three children, and 15.87% (n=357) had more than three children.

RMNCHN Indicators:

Different indicators were identified on reproductive, maternal, newborn, child health and nutrition based questionnaires. Key findings are calculated in the below mentioned table:

Description	FREQUENCY(n)	PERCENTAGE (%)	LCL	UCL
Pregnant women received MCP cards	1851	82.2667	80.6873	83.8461
Pregnant women received any antenatal checkup during your last pregnancy	2221	98.7111	99.2447	99.1775
Pregnant women received 3 or more antenatal checkup during your last pregnancy	1519	68.3926	66.4575	70.3277
Pregnant women received 4 or more antenatal checkup during your last pregnancy	964	43.4039	41.341	45.4667
Pregnant women received IFA tablet during your last pregnancy	2035	90.4444	89.2288	91.6601
Pregnant women received 90 or more IFA tablet during your last pregnancy	591	26.6096	24.7704	28.4489
Pregnant women consumed 90 or more IFA tablet during your last pregnancy	339	83.1762	81.5415	84.8109
Pregnant women received THR during your last pregnancy	908	40.3556	38.3268	42.3843
Institutional delivery	1941	86.2667	84.8434	87.69
Child aged 0-5 month received immediate Skin to skin care after birth	1295	65.4371	63.34	67.5342
Child aged 0-5 month weighted at birth	1801	82.9572	81.3742	84.5401
Child aged 0-5 months received Timely Initiation of Breastfeeding (TIBF) within 1 hrs.	1491	66.2667	64.3116	68.2217
Child aged 0-5 month received exclusive breastfeeding (last 24 hours)	1136	50.4889	48.4214	52.5563
Child aged 6-11 month Currently receiving breastfeeding	2104	93.5111	92.4925	94.5297

Children aged 6–11 months who Initiated complementary feeding	1472	65.4222	63.4555	67.389
Recently delivered women currently using any contraceptive method	452	22.8629	21.0102	24.7157
Recently delivered women currently using modern contraceptive method	438	22.1548	20.3226	23.987
Recently delivered women currently using traditional contraceptive method	15	0.7587	0.3759	1.1416

Key observations:

The study found that the majority of pregnant women were highly engaged in antenatal and postnatal health practices.

During their most recent pregnancy:

- 98.71% of women attended at least one antenatal checkup.
- 68.39% had three or more checkups.
- 43.40% had four or more checkups.
- A significant number of women, 90.44%, received iron-folic acid (IFA) tablets:
- Only 26.61% received 90 or more tablets.
- Among those who received 90 or more tablets, 83.18% took all of them.
- Approximately 40.36% of pregnant women benefited from nutritional support through the Take-Home Ration (THR) program.
- Most births, 86.27%, occurred in medical institutions.

Post-birth period:

- 65.44% of babies aged 0-5 months received immediate skin-to-skin care.
- 82.96% of newborns were weighed at birth.
- About 66.27% of mothers initiated breastfeeding within the first hour.
- Half of the mothers (50.49%) exclusively breastfed their infants aged 0-5 months in the past 24 hours.

Among infants aged 6-11 months:

- 93.51% were still being breastfed.
- 65.42% of mothers had begun complementary feeding.

Among women who recently gave birth:

- 22.86% reported using some form of birth control.
- 22.15% used modern methods.
- 0.76% relied on traditional methods.

These figures indicate that while many women are utilizing modern contraceptives, there is still room for improvement in maternal and child healthcare within this population.

DISCUSSION:

The study's data highlights important aspects of maternity and child healthcare practices and offers a thorough overview of the participants' health-related and demographic variables. The results allow for the derivation of several significant conclusions that are essential for shaping future healthcare policies and initiatives.

Distribution of Gender
There is a minor gender difference in the participants' gender distribution, with boys slightly outnumbering girls (46.93%). In order to resolve any gender-based discrepancies and understand the underlying causes, this gap deserves additional examination. It may represent underlying cultural biases or preferences.

Mother's Age
The majority of mothers (63.38%) were 24 years of age or younger, indicating a trend in the population towards earlier parenthood. This pattern highlights the need of providing younger moms with specialised health education and services, as they might need more assistance when expecting or giving delivery. The very low percentage of moms (2.4%) who are 35 years of age or older suggests that late parenthood is less typical in this region.

Caste and Religion
The vast majority of participants (85.78%) identified as Hindu, whereas a lesser percentage (14.22%) came from non-Hindu backgrounds. Furthermore, the distribution of castes reveals that 30.44% of the population belonged to marginalised castes, underscoring the need for culturally competent healthcare treatments that cater to the unique needs and difficulties encountered by these communities.

Type of Family
The majority of participants (60.76%) were from joint households, which may have an impact on support resources and childcare methods. The existence of extended family members can offer more help and resources, which is a benefit that health programmes can take advantage of.

Parental education and occupation
The educational attainment of parents differed, with a notable segment of mothers (34.76%) and

fathers (33.16%) lacking literacy. This emphasises how crucial it is to implement educational initiatives to raise literacy rates because they are directly associated with improved health outcomes. Parents' job statuses differed as well; fathers worked primarily as non-agricultural labourers (47.24%), while mothers were unemployed in significant numbers (95.11%). These work trends point to potential financial barriers that could limit access to healthcare treatments.

Place of the Delivery
64.76% of births took place in public health facilities, which is a sign that institutional delivery methods are working well. The 13.73% of births that take place at home or while traveling, however, emphasizes the necessity of better access to medical facilities—especially in rural regions.

Housing and Self-Help Group Membership
The housing situation differed, with 17.69% of the population residing in kachcha homes, suggesting that some people do not have ideal living conditions. The almost equal distribution of membership in self-help organizations (49.78%) indicates that these organizations play a significant role in distributing health information and support and are an essential component of the community.

Prenatal and Postpartum Healthcare
Good participation with maternal healthcare services is indicated by the high percentage of prenatal visit attendance (98.71%). The decrease in the proportion of women attending four or more checkups (43.40%), however, indicates that ongoing participation must be reinforced. While it is reassuring that a large majority of women (90.44%) received iron-folic acid tablets, the fact that only 26.61% received 90 or more tablets suggests that there may be gaps in the supply or adherence that require attention.

Breastfeeding and Infant Care
With high rates of early skin-to-skin care (65.44%) and breastfeeding initiation within the first hour (66.27%), breastfeeding habits are typically positive. Nonetheless, there is potential for improvement in breastfeeding teaching and assistance, as seen by the 50.49% exclusive breastfeeding rate for infants 0–5 months. Given that only 65.42% of mothers had started complementary feeding for infants aged 6 to 11 months, complementary feeding practices also require attention.

Use of Contraceptives
The comparatively low rates of use of current methods (22.15%) and birth control (22.86%) suggest that family planning services should be made more widely available and socially acceptable. To increase uptake, there is a clear opportunity to improve education and make contraceptive alternatives more accessible.

CONCLUSION

This study identifies a number of areas where maternity and child healthcare may improve as well as its strengths. The majority of people connect with healthcare services, especially for prenatal care, but there are still large gaps in ongoing care, the use of contraceptives, and dietary support that need to be filled. Improving health outcomes will require customized interventions that take into account the distinct demographic and socioeconomic background of the population. Improving mother and child health in this community will require supporting community institutions like Self-Help Groups, improved education, and easier access to medical facilities.

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ANNEXURE

1. Indicators list final.xlsx
2. EVIDENCE TABLE.

Shreya Saumya ST report