Summer Internship Report

at

Piramal Swasthya Foundation

(April 22nd – June 21st,2024)

A Report

By

JAI SINGH

RMNCHN CURRENT SITUATION IN RURAL BIHAR

Under guidance of

Mrs. ANURADHA BHARDWAJ

PGDM (Hospital and Health Management)

2023-2025

International Institute of Health Management Research, New Delhi

Piramal Swasthya

(Completion of Summer Internship from respective organization)

The certificate is awarded to

Name: Mr. Jai Singh

In recognition of having successfully completed his/her internship in the department of

Title: To Assess Reproductive, Maternal, Newborn, and Child Health and Nutrition practices among recently delivered women and children aged 0-23 months in rural Bihar during 2024

and has successfully completed his Project on Title of the Project

Date: 21st' JUNE 2024

Organization: Piramal Foundation

He comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.

We wish him 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

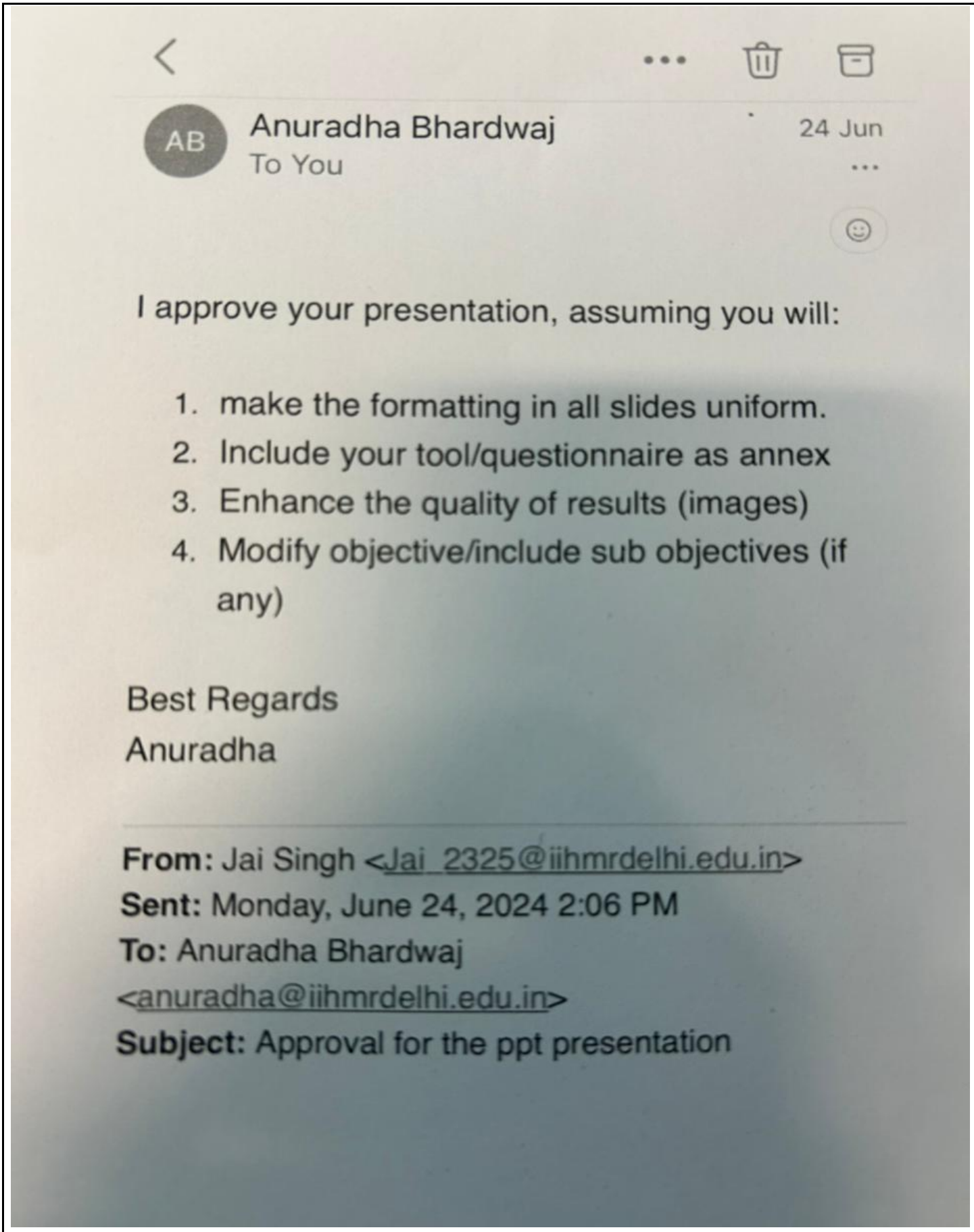
Certificate of Approval

The Summer Internship Project of titled "**RMNCHN CURRENT SITUATION IN RURAL BIHAR "** at **"Piramal Swasthya"** 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.

Mrs. Anuradha Bhardwaj

Associate Professor

IIHMR, Delhi



AB Anuradha Bhardwaj 24 Jun
To You

I approve your presentation, assuming you will:

1. make the formatting in all slides uniform.
2. Include your tool/questionnaire as annex
3. Enhance the quality of results (images)
4. Modify objective/include sub objectives (if any)

Best Regards
Anuradha

From: Jai Singh <Jai_2325@iihmrdelhi.edu.in>
Sent: Monday, June 24, 2024 2:06 PM
To: Anuradha Bhardwaj <anuradha@iihmrdelhi.edu.in>
Subject: Approval for the ppt presentation

FEEDBACK FORM
(IIHMR MENTOR)

Name of the Student:

Summer Internship Institution:

Area of Summer Internship:

Attendance:

Objectives met:

Deliverables:

Strengths:

Suggestions for Improvement:

Signature of the Officer-in-Charge (Internship)

Date:
Place:

FEEDBACK FORM

Name of the Student: Jai Singh

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:

- Desk review on Climate change and its impact on early childhood health'
- Generate Evidence Table
- literature review
- Field visit
- Health and wellness center visit.
- Acquire a basic knowledge in SAS..

Strengths:

During this period, he displayed very good adherence to protocols, ready wit, learning spree, punctuality, clarity of understanding, proactiveness, teamwork, commitment, sincerity and diligence with analytical progress. Based on his learning abilities and efforts, it appears that, given the level of effort and aptitude he has, if given chance he can become a very strong performer in the public health research and implementation sector of India.

Suggestions for Improvement:

Scientific writing, advanced analytics, communication skills, programmatic knowledge.

Date: 12.12.2024
Place: Patna

Signature of the Officer-in-Charge (Internship)

ACKNOWLEDGEMENTS

My internship with Piramal Swastha Foundation in Bihar was an incredibly rewarding experience. It provided a wealth of opportunities for learning and professional growth. I'm incredibly grateful to have been a part of it.

I had the privilege of working with some amazing people throughout the internship. I'd like to express my sincere gratitude to **Dr. Tanmay Mahapatra, Md. Irshad Ali**, and **Dr. Devashish Singh** for their invaluable guidance, support, and for providing the resources I needed to succeed with my project. Their insightful decisions and willingness to help made a real difference.

Thanks, are also due to **Mr. Vivek Vikas** for his overall supervision, and to **Mr. Kunal Ranjan, Mr. Alok Ranjan and Mr. Ashish Kashyap** for their assistance and data analysis guidance.

I'd also like to extend my deepest gratitude to **Dr. Sutapa B. Neogi, Dr. Sumesh Kumar,** and **Mrs. Anuradha Bhardwaj** at IIHMR Delhi. Their careful and insightful guidance throughout my studies has been incredibly valuable to my development in theory and practice.

This internship has been a major stepping stone in my career. I'm committed to using the skills and knowledge I gained to their fullest potential, and I'll keep working to improve them as I pursue my career goals. I hope to have the opportunity to collaborate with all of you again in the future.

Sincerely,

Jai Singh

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ACRONYMS/ABBREVIATIONS

VHSND- Village Health, Sanitation, and Nutrition Day
HBNC- Home-Based Newborn Care
ICDS- Integrated Child Development Services
FBNC-Facility-Based Newborn Care
IPHS-Indian Public Health Standards
SAS-Statistical Analysis Software
CHC-Community health Centre
PHC-Primary Health Centre
NCF-National Curriculum Framework
MCH-Maternal and Child Health
THR-Take Home Ration
MCP-Maternal and Child Protection
ASHA-Accredited Social Health Activist

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 delivering sustainable impact.

The Foundation currently works across 21 states, mostly in partnership with state governments. It has developed innovative approaches and programs in every vertical and has built strong partnerships with governments, technology partners and international organizations (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

ORIENTATION AND INTRODUCTION

Our internship journey began prior to April 22nd with a virtual introduction. Through a Zoom meeting with Dr. Tanmay Mahapatra, we had a chance to introduce ourselves and express our areas of interest for potential internship projects. Upon reaching Patna, we convened at Hotel Royal Bihar on April 22nd for a comprehensive orientation session designed for all interns. This session wasn't just about introductions; it was also where we received our official internship topics! These topics were carefully chosen to align with both our expressed interests and the program's requirements. The good news didn't stop there! To ensure our success, we were also assigned mentors for our specific topics, along with additional mentors focused on field visits and data analysis, providing a well-rounded support system for our internship endeavors.

DESCRIPTION OF 2 MONTHS INTERNSHIP

Mondays, Wednesdays, and Fridays were designated for formal learning sessions during our internship. Mondays were set aside for SAS (Statistical Analysis System) classes for one hour starting on April 29. Providing attendees with comprehensive knowledge and hands-on experience with SAS software is the goal of these sessions, which emphasize the software's importance in statistical analysis and data management.

Date: 10th of April

The importance of the study methodology was discussed in the first session, with an emphasis on the notion that "what gets measured gets intervention." This illustrated the significance of accurate measurement in the production of significant treatments and outcomes in research.

Date: 26 April

Details: The session began with an overview of the role that Microsoft Excel plays in data management. It was highlighted how important it is for organising, cleaning, and analysing data, which makes it a crucial tool for making decisions based on data.

Summary of Learning Outcomes

Learning from all of the sessions

Week 1: SAS Installation Overview: learned the installation and configuration procedures for SAS software.

Data Organisation and Cleaning First of all, outlined basic techniques for arranging and cleansing data.

Study methodology: acquired knowledge about risk ratio, incidence rate, and prevalence.

Week 2: SAS Interface: Detailed training on the log, result, and code windows of the SAS interface; learned how to create libraries and import data.

Data Management and Cleaning: I learned how to compute BMI and manage and clean raw data in SAS.

Research methodology: we looked at incidence proportion, risk ratio, groups exposed and not exposed, and those who are at risk.

Week 3: Pivot Tables in Excel: A variety of charts and pivot tables were made.

SAS functions: Learned the fundamentals using programmes like PROC FREQ, PROC SORT, and PROC MEAN.

Questionnaire Design: Learned the structure and reviewed a toolset for creating mother and child health questionnaires.

Week 4: Conditional Formatting in Excel: Utilised Excel's conditional formatting.
SAS recoding: Acquired knowledge of SAS recoding methods.
Study Designs: Learned about a variety of study designs, such as ecological, cross-sectional, cohort, and case-control studies.

Week 5: Acquired knowledge of data validation techniques in Excel.
Sociodemographic Indicators: derived from questionnaires on maternal and child health.
Discussions on various study designs should continue.
Week 6: Excel Functions: The Excel functions SUM, MAX, MIN, AVG, and SUBTOTAL were used.
SAS: Computed frequencies and recoded sociodemographic variables.
RM: There will be a comprehensive presentation on the use of qualitative and quantitative study designs in research.

Week 7: Data Management and Cleaning: Learned how to use Excel's HLOOKUP and VLOOKUP lookup functions.
Understand how to identify variables and give descriptions for various indicators included in mother and child health questionnaires using the SAS Indicator Matrix.
RM: Continue learning more about confounding variables and incidence rate.
Week 8: Data Cleaning and Management: We learned how to use Excel's COUNTIF, SUMIF, and IF functions.
RM: A number of issues were addressed by the research technique, such as ecological fallacy, incubation period, differential remembrance bias, temporal ambiguity, and precision.
SAS Descriptive Analysis: A variety of indicators were subjected to descriptive analysis using SAS software.

In addition to the scheduled weekly seminars on SAS, Research Methodology, and Data Management, our internship consists of several additional sessions focused on various health programmes and methods. These classes, which provided extensive information on academic research techniques as well as public health initiatives, were supervised by Dr. Devashish and Mr. Irshad Ali.

Extra Sessions on Health Programs

Session Conducted by Dr. Devashish1. Home-Based Newborn Care (HBNC)
Details: Discussed the importance of postnatal care for newborns, focusing on home-based interventions to improve neonatal health outcomes.
2. Maternal and Newborn Health (MNH) Toolkit
Details: Introduced the MNH toolkit, which includes resources and guidelines for improving maternal and newborn health through various stages of pregnancy and childbirth.
3. Integrated Child Development Services (ICDS)
Details: Covered the objectives and components of ICDS, a government program aimed at improving the health, nutrition, and education of children under 6 years of age.
4. Poshan Abhiyan

Details: Explored the goals and strategies of Poshan Abhiyan, a national nutrition mission focused on reducing malnutrition among children, pregnant women, and lactating mothers.

5. Primary Health Centers (PHC) and its Types

Details: Provided an overview of PHCs, their functions, and types, highlighting their role in providing primary healthcare services in rural areas.

6. Village Health, Sanitation, and Nutrition Day (VHSND)

Details: Discussed the purpose and activities of VHSND, a monthly event aimed at providing integrated health and nutrition services at the village level.

7. Infant and Young Child Feeding (IYCF)

Details: Focused on best practices for feeding infants and young children to ensure optimal nutrition and health during the early years of life.

8. Indian Public Health Standards (IPHS) Guidelines

Details: Explained the IPHS guidelines, which set the standards for healthcare services provided at different levels of the public health system.

9. Facility-Based Newborn Care (FBNC)

Details: Discussed the importance of FBNC in providing specialized care for sick newborns at healthcare facilities, including neonatal intensive care units (NICUs).

10. Health and Wellness Centres

Details: Covered the concept and functioning of Health and Wellness Centres, part of the Ayushman Bharat program, aimed at providing comprehensive primary healthcare services.

Literature Review and Referencing Session

Session Conducted by Mr. Irshad Ali

1. Literature Review

Details: Provided guidance on conducting a thorough literature review, including identifying relevant sources, synthesizing information, and evaluating the quality of research.

2. Referencing

Details: Covered various referencing styles (APA, MLA, Chicago, etc.), and provided practical tips on proper citation to avoid plagiarism and ensure academic integrity.

FIELD VISIT REPORT

HOUSEHOLD SURVEY

Date: 25th April 2024

Block: Dulhin Bazar

Village: Sailauhri

Introduction:

This report details a household survey conducted for the Maternal and Child Health (MCH) program in Sailauhri, Dulhin Bazar, on April 25th, 2024. The survey aimed to gather data on mothers and children aged 0-5 months and 29 days.

Listing Methodology:

The household listing adhered to the following protocol:

- Direction: We started listing houses on the right side of the street, skipping the first four and beginning with number five.
- Random Table: To choose which house to start with in the selected area, we used a random number table kept at the Anganwadi Centre. This table has a random numbers, and we picked that number to determine the starting house.

Interview 1: Child (0-5 months 29 days)

The first interview involved a mother and her child, falling within the targeted age range (0-5 months 29 days). The interview instrument comprised four sections:

1. Basic Household Details: This section collected demographic information about the household.
2. ANC & Birth Preparedness: This section focused on Antenatal Care (ANC) received by the mother during pregnancy. We emphasized the importance of the "4Cs" for safe delivery: Clean Blade, Clean Cloth, Clean Thread, and Clean Needle.
3. Newborn Care (NBC): This section assessed practices related to newborn care.
4. Postnatal & Breastfeeding Practices: This section covered inquiries about postnatal care and breastfeeding practices.

Key Discussion Points:

- MCP Card: The mother received her MCP card during the fourth month of pregnancy from an ASHA worker.
- THR: The mother began receiving Take Home Ration (THR) from the fourth month of pregnancy.
- Government Services: Inquiries were made about the receipt of government services like IFA tablets.
- Institutional Delivery: We assessed whether ASHA or Anganwadi workers promoted institutional delivery.

- Uterotonic Drugs & Vitamin K: The mother's knowledge and experience regarding uterotonic drugs and Vitamin K were explored.
- Kangaroo Mother Care (KMC): The mother's awareness of KMC was evaluated.
- Initiation of Breastfeeding: The mother reported initiating breastfeeding within 24 hours of birth.
- Newborn Bathing: The first bath was administered at home after 2 days.

Interview 2: Child (6-11 months 29 days)

- Interview Tool Sections:
  - Household and Respondent Characteristics
  - Breastfeeding and Complementary Feeding Practices

Key Discussion Points:

- Duration of breastfeeding
- Introduction of complementary foods (types, age)
- Frequency and types of complementary feeding

Interview 3: Mother & Child (12-23 months 29 days)

- Interview Tool Sections:
  - Household and Respondent Characteristics
  - Immunization
  - Complementary Feeding Practices
  - Postnatal Contraception and Family Planning

Key Discussion Points:

- Child's immunization status (up-to-date or specific vaccines received)
- Continued complementary feeding practices.
- Mother's knowledge and use of postnatal contraception methods
- Family planning discussions or practices.

Confidentiality Assurance:

Before and after the interview, we assured the participants of data confidentiality and expressed gratitude for their participation.

Conclusion:

This household survey provided valuable data on MCH practices in Sailauhri village. The findings can be used to identify areas for improvement and design targeted interventions to enhance maternal and child health outcomes.

Community Health Center, Phulwarisharif, Patna

Date of Visit: May 16, 2024

Location: Phulwarisharif, Patna, Bihar

Population Served: Approximately 350,000 per month.

I. Introduction

This report details a field visit conducted on May 16, 2024, to the Community Health Center (CHC) in Phulwarisharif, Patna. The CHC caters to a vast population of approximately 350,000 individuals per month, highlighting the crucial role it plays in delivering primary healthcare services in the region.

II. Observations

- Registration Counter (Ground Floor):
  - The registration process leverages technology by offering a QR scanner for seamless registration for patients with ABHA (Ayushman Bharat Health Account) accounts. This expedites the process and reduces waiting times.
- Immunization Room (Ground Floor):
  - The CHC maintains a well-stocked immunization room with all essential vaccines readily available for newborns. This ensures timely and complete immunization coverage for infants.
  - The presence of a cold chain storage system guarantees the proper preservation of vaccines, maintaining their efficacy.
- Pharmacy (Ground Floor):
  - While a brief visit was made to the drug store, a detailed inventory of medications stocked could not be ascertained. However, the visit confirmed the availability of essential medications for various ailments.
- First Floor:
  - Antenatal Care (ANC) Room: A dedicated ANC room with a doctor present ensures proper care for pregnant women. This is crucial for monitoring fetal health and ensuring a healthy pregnancy.
  - Non-Communicable Diseases (NCD) Cabin: A designated cabin for managing NCDs suggests the CHC's focus on addressing chronic health conditions like diabetes, hypertension, and cardiovascular diseases prevalent in the population.
  - Family Planning Counter: The presence of a family planning counter indicates the CHC's commitment to promoting reproductive health. Information gathered suggests they offer counseling on various "basket of choice" family planning methods. This empowers individuals to make informed choices regarding contraception.
- Third Floor:

- Triage Room: A dedicated triage room allows for efficient patient assessment and prioritization based on the severity of their condition. This ensures timely intervention for critical cases.
- Labor Room: A labor room equipped for deliveries suggests the CHC's ability to handle childbirth within its facility.

- Outreach Activities and Routine Immunization Process: Discussions were held with hospital authorities to understand the CHC's outreach programs and routine immunization process. However, specific details regarding these activities' frequency, scope, and schedule were not obtained.

CONCLUSION

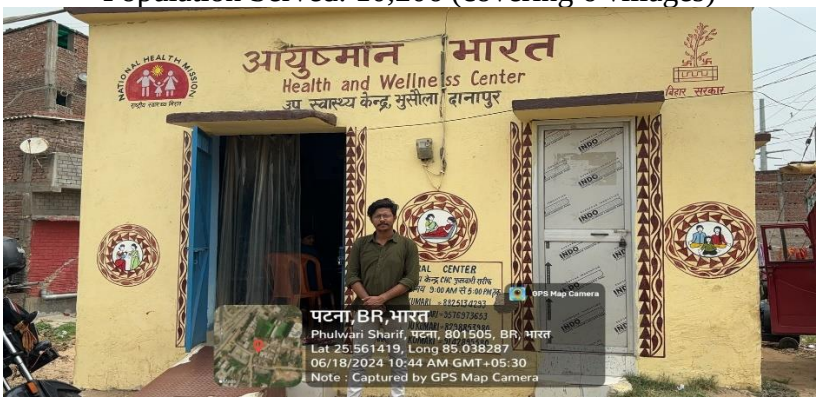
The CHC in Phulwarisharif demonstrates a comprehensive approach to primary healthcare delivery. The use of technology for registration, a well-equipped immunization room, and dedicated cabins for ANC, NCDs, and family planning indicate a commitment to preventive, curative, and reproductive healthcare services.

HEALTH AND WELLNESS CENTRE BHUSAULA, DANAPUR

Date of Visit: 18th June

Location: Health and Wellness Centre, Bhusaula, Danapur

Population Served: 10,206 (covering 6 villages)



Staff:

- Community Health Officer (CHO)
- Auxiliary Nurse Midwives (ANMs) (2)
- ASHA Workers

Key Findings:

- Services Provided:
  - Outpatient Department (OPD) services
  - Essential medicines
  - Immunization and vaccination for children (0-5 years)
  - Non-communicable diseases (NCD) corner

- Basic laboratory tests (nebulizer, weighing machine)

- ASHA Worker Role:

- Janani Bal Suraksha Yojana (JBSY) program for pregnant women and children (0-5 months)
  - Home visits to pregnant women
  - Follow-up care
  - Essential supplies (IFA tablets, calcium tablets)
  - Promotion of institutional deliveries
- Family planning counseling
- Free condom distribution
- Telemedicine services (e-Sanjeevani application) - 250 consultations last month
- Permanent member in one ward, volunteer in another
- Manages immunization drives and maintains due lists
- Provides JBSY program support (home visits, follow-up care)
- Educates mothers on child care and nutrition

Overall, the visit to the Health and Wellness Centre in Bhusaula Danapur highlights the crucial role these centers play in providing essential healthcare services to rural communities in India. The focus on maternal and child health, immunization, and NCDs demonstrates a commitment to preventive and promotive healthcare. The utilization of telemedicine services further enhances accessibility to care.

EXPERIENCE FROM THE PROJECTS/ACTIVITIES WE WERE ENGAGED

Along with our project topic we were also engaged with another topic which was early childhood care and education in which the work which was assigned to me was to find the things which is mentioned in the national education policy, national curriculum framework and Nipun Bharat about early child education and early childhood care I must summarize these three documents and prepare the report of it.

NATIONAL EDUCATION POLICY 2020

The National Education Policy 2020 aims to improve the Indian education system by focusing on early childhood education, foundational skills, holistic development, and equity. Key changes include:

- A new 5+3+3+4 curricular structure with a play-based approach in early years Emphasis on foundational literacy and numeracy.
- More flexibility in subject choices for students.

- Focus on inclusion for disadvantaged students and those with disabilities.
- Establishment of school complexes to improve resource efficiency.
- Separate regulatory body to set minimum quality standards for schools.

NATIONAL CARRICULUM FRAMEWORK

NCF for the Foundational stage

About NCF

- Developed based on the National Education Policy (NEP) 2020.
- Targets children aged 3-8 years.
- First stage in a new school education structure.
- The curriculum refers to the entire educational experience of students.
- The Curriculum framework considers factors beyond content, like teachers, resources, and environment.
- Aims to be responsive to India's diversity and empower educators.
- States have a role in shaping curriculum based on their context.
- CARRICULUM GOALS
- CG-4: Social-Emotional Development
- Self-Awareness and Identity:
  - Recognizes themself as an individual within a family and community.
- Emotional Regulation:
  - Identifies different emotions.
  - Manages emotions appropriately.
- Social Skills:
  - Interacts comfortably with others.
  - Cooperates with others.
- Social Responsibility:
  - Follows classroom and school rules.
  - Shows kindness and helps others (including plants and animals).
  - Understands and respects others' feelings.
- CG-5: Positive Attitude Towards Work
- Shows willingness and participation in helping others with age-appropriate tasks.
- CG-6: Environmental Appreciation
- Shows care and enjoys interacting with all living things.

NEP 2020 goals for ECCE:

- Achieve universal access to quality ECCE programs.
- Ensure all children attain optimal development in all five domains.
- Implement flexible, play-based learning that includes languages, numbers, colors, shapes, indoor/outdoor play, puzzles, problem-solving, arts, music & movement, and social skills.
- Key initiatives:
- NIPUN Bharat: Aims to achieve Foundational Literacy and Numeracy (FLN) for all children by Grade 3.
- Vidya Pravesh: A 3-month play-based program to prepare children for Grade 1.
- Balvatika: A one-year program before Grade 1 using play to develop cognitive and language skills.
- Principles for teaching at the Foundational Stage:

- Safe and stimulating environment
- Play is central to learning
- Nurturing relationships
- Focus on the individual child
- Learning experiences connected to children's lives and contexts
- Building positive relationships with families and community
- The document also details how to create a positive learning environment, choose and organize content for teaching, and organize indoor and outdoor spaces for the Foundational Stage.

NIPUN BHARAT

NIPUN Bharat Mission is a program launched by the Indian government to achieve universal foundational literacy and numeracy by 2026-27. It targets children from preschool to Grade 3, with additional support for children in Grades 4-5 who need it.

The mission focuses on play-based learning, activity-based learning, and culturally responsive teaching materials in children's home language. It emphasizes teacher training, continuous assessment to identify learning gaps, and IT-based solutions for monitoring progress.

The program has multiple components including:

School Preparation Module: a 3-month play-based program to strengthen pre-literacy, pre-numeracy, cognitive and social skills for Grade 1 students.

DIKSHA platform for learning resources and professional development for teachers.

NISHTHA: FLN training modules focused on bridging the language barrier and teaching in mother tongue.

The overall goal is to improve the learning environment, reduce dropouts, and empower teachers to create a steeper learning trajectory for children with positive long-term outcomes.

DESK REVIEW

I was also engaged in the literature review work on a topic where I prepared the background and the evidence tables and concluded the findings.

TOPIC- EARLY CHILDHOOD AND CLIMATE CHANGE

BACKGROUND

The urgency of climate change, with its multifaceted impact on everything from economic stability to societal well-being, demands global attention. However, the most significant burden falls on children's shoulders, who are not only currently impacted but will face the long-term consequences of a changing climate [1]. Undeniably, the ramifications of climate change disproportionately affect vulnerable populations, with children being particularly at risk of falling into poverty and social exclusion. In this context, education is a critical cornerstone in ensuring personal and professional development. Therefore, robust scientific research is essential to fully understand the specific ways climate change disrupts children's education [2]. If we want kids to take care of our planet when they grow up, we need to teach them how! The best way to do this is by giving them lessons about protecting the environment and being good citizens. This will help us create a better world for everyone in the future [3]. In particular, the potential long-run impacts of floods on children are worrying. Disruptions in food supply and contaminated water leading to diarrheal illness make children under 5 years of age the most susceptible to undernutrition [4]. Increased educational attainment is a sustainable development priority

and has been posited to have benefits for other social and environmental issues, including climate change [5]. As the impact of climate change has become harder to ignore, it has become increasingly evident that children will inherit futures where climate challenges require new ways of thinking about how humans can live better with the world [6]. In the United States of America (USA), nature-based preschool programs are likely to promote environmental science and nature education, given their outdoor curricula, but very little is known about how these programs might also cultivate sustainability education [7].

INTRODUCTION

India is among four South Asian countries where children are most at risk of the impacts of climate change threatening their health, education, and protection, according to a new UNICEF report. 'The Climate Crisis Is a Child Rights Crisis: Introducing the Children's Climate Risk Index' (CCRI) is UNICEFs first focused on children. It ranks countries based on children's exposure to climate and environmental shocks such as cyclones and heatwaves, as well as their vulnerability to those shocks based on their access to essential services.

The scope of the problem in India is enormous, based on the potential for climate change and variability to exacerbate endemic malaria, dengue, yellow fever, cholera, and chikungunya, as well as chronic diseases, particularly among the millions of people who already experience poor sanitation, pollution, malnutrition, and a shortage of drinking water [8]. A growing contingent of researchers has been examining the relationship in recent years, and they've found that hotter temperatures and reduced rainfall are linked to increases in conflict at all scales, from interpersonal violence to war. Children are especially vulnerable to conflict [9]. Experts across the world are emphasizing the promotion of ECD through the 5-pronged Nurturing Care Framework (NCF). The Sustainable Development Goals have focused on optimum development for all children by 2030. For India, with a 164.5 million population of children between 0–6 years, the magnitude of the problem is huge [10].

FINDINGS

Early Childhood Development (ECD) is critical for a child's future success. It shapes their ability to learn, their emotional well-being, and even their moral development. The Nurturing Care Framework offers a comprehensive approach to ECD, but its full implementation faces challenges in India, including the looming threat of climate change.

Climate change can worsen health disparities and disrupt children's education, especially in developing countries like India. Floods, for example, can lead to undernutrition in young children. While children may have a basic understanding of climate change, their knowledge often lacks depth and lacks concrete examples. This highlights the need for improved teacher practices, as climate change education is not yet widely implemented, and teachers may not fully grasp its importance.

Research on climate change education has primarily focused on children's knowledge and attitudes towards the issue. There's a gap in research on developing environmentally friendly behaviors in children. However, studies have shown that successful educational interventions can raise children's awareness and improve their knowledge about climate change. Effective education equips children with the knowledge, skills, and values they need to become environmentally responsible citizens and contribute to a sustainable future.

Overall, ECD is crucial, and climate change education needs to be integrated into the curriculum. By implementing child-centered educational interventions, we can empower future generations to not only adapt to the challenges of climate change but also become agents of positive change.

PROJECT REPORT

TOPIC-CURRENT SITUATION OF RMNCHN IN RURAL BIHAR

INTRODUCTION

India grapples with the world's highest number of newborn deaths, and Bihar, a state within India, unfortunately makes a substantial contribution to this grim statistic. To address this challenge, the government implements the RMNCHN program, which prioritizes the health of mothers, newborns, and children along with proper nutrition. This program is especially crucial in Bihar due to the state's history of high infant and maternal mortality rates. By focusing on these vulnerable populations, RMNCHN aims to improve overall health outcomes and reduce preventable deaths in Bihar and across India.

In 2010, a collaborative effort emerged in the Indian state of Bihar to tackle the challenge of improving reproductive, maternal, newborn, and child health and nutrition (RMNCHN) outcomes. The Bill & Melinda Gates Foundation, the Government of Bihar (GoB), and various NGOs launched the Ananya program with the ambitious goal of statewide improvement. To test the program's effectiveness and gather data for future expansion, a two-year pilot phase began in 2012. This initial stage focused on eight districts with a combined population of roughly 28 million, implementing interventions that aimed to improve both healthcare worker performance and maternal health behaviors. The success of this pilot phase, with its demonstrably positive changes, would inform the large-scale rollout of the Ananya program across Bihar [11]. The Ananya program in Bihar offered a promising start in tackling maternal and child health issues. The initial pilot phase, with its intensive support, showed impressive results. Frontline healthcare workers significantly improved their performance, likely due to increased knowledge, efficiency, and adherence to best practices. Mothers, empowered by the program, also adopted healthier behaviors like prenatal care, improved birthing practices, and better infant/childcare routines. This success highlights the importance of focused support in implementing such programs. It addressed both the delivery of healthcare services by workers and the health behaviors of mothers. However, questions linger about the long-term sustainability of these improvements and the challenges of scaling up the program's positive aspects across the entire state of Bihar [12]. Mobile health technology, or mHealth, could be a game-changer for delivering healthcare in remote areas with limited resources. Frontline healthcare workers (FLWs) are the backbone of providing essential care for mothers, newborns, and children (RMNCHN) in these regions. Equipping them with mHealth tools has the potential to significantly empower them. However, a critical gap in knowledge exists. While the potential benefits are undeniable, there's a lack of robust studies to definitively show how mHealth impacts the way FLWs deliver services or if it directly translates into better health outcomes for mothers and children. More research is urgently needed to unlock the full potential of mHealth and revolutionize RMNCHN care in resource-constrained settings [13]. sThe Bill & Melinda Gates Foundation supported a project in Bihar aimed at enhancing maternal, newborn, and child health, and nutrition (RMNCHN) throughout the region. BBC Media Action developed communication materials designed to assist frontline healthcare workers (FLWs) during government-led village health events. These tools were

intended to improve the effectiveness and reach of healthcare services provided to mothers, babies, and children in Bihar [14].

OBJECTIVE

To get an insight about some key RMNCHN practices among recently delivered women and children aged 0-23 months in rural Bihar during 2024.

METHODOLOGY

1. Study Area: 13 districts of Bihar selected randomly from 9 Commissionerate
2. Target population: mothers of 0-5, 6-11, 12-23 months old children
3. Sample size: 2,250 interviews per category (0-5 months, 6-11 months, and 12-23 months)

SOCIO DEMOGRAPHIC VARIABLES:

We calculated the Frequency, percentage, lower confidence interval and upper confidence interval of the following indicators-

• **Gender**- The children's gender was categorized into two labels i.e. boys and girls.

• **Religion**- The religion of the recently delivered mothers was calculated according to the category of Hindu and Others.

• **Age of the mother**- The total age group of the mother was distributed into three different age groups i.e. less than 24 years, 25-34 years of age, and 35 years of age and above.

• **Caste**- The variable caste was divided into two labels categorized as marginalized and non-marginalized.

•**Family type**- Under socio-demographic variables, the kind of family is another significant part. It was distributed into a joint family and a nuclear family.

•**Education of the mother**- The categories of distribution of mother's education was divided into three labels and those are illiterate, upto 8th class and more than 8th class.

•**Education of the father**- The same categories were also followed in the father's education as illiterate, up to 8th class, and more than 8th class.

• **Occupation of the mother**- Mother's occupation was categorized into five sections such as unemployed, agricultural, non- agricultural, business and salaried employee.

• **Occupation of the father**- Similarly father's occupation was divided into unemployed, agricultural, non-agricultural, business, and salaried employee sections.

• **Migration of the husband**- Women under the studied age group answered about whether their husbands are migrant or non-migrant.

• **SHG membership**- Women of the studied age group or any women of their family have membership in any social health group or not.

• **Living children**- It determines whether the woman has one living child, two living children, three living children, or more than three living children

• **Place of the delivery**- It shows the distribution of delivery place of the children whether it was in a public facility, private facility, or home delivery

• **Type of the house**- House type was divided into three different category whether it was kaccha, pucca or semi-pucca..

RMNCHN INDICATORS:

Different RMNCHN indicators were observed which are the important factors in determining the frequency and percentage under total observations.

• **MCP(mother and child protection) card**- It is defined as the percentage of pregnant women who received the MCP cards or not

• **ANC(Antenatal care)-** This is described as the percentage of pregnant women receiving any antenatal checkup during her last pregnancy or not.

• **Received ANC for 3 or more times**- Here total percentage of pregnant women was calculated whether they received antenatal check-ups 3 or more times.

• **Received ANC for 4 or more times**- It is defined as the percentage of pregnant women who received antenatal checkups for 4 or more times.

• **Received IFA tablet**- This is counted as the percentage of pregnant women who received IFA tablets during her last pregnancy.

Received 90 or more IFA tablets- It is described as the percentage of pregnant women who received 90 or more IFA tablets under the 0-5 month age group of babies.

• **Consumed 90 or more IFA tablets**- It is defined as the percentage of pregnant women who consumed 90 or more IFA tablets or not.

• **Received THR(Take Home Ration)**- It is counted as the total percentage of pregnant women who received THR during their last pregnancy.

• **Institutional delivery**- It is described as the percentage of births in any institution like government and private under 0-5 age group mothers.

• **Skin-to-skin care (STSC)**- It is defined as percentage of children aged 0-5 month who received skin to skin care after birth.

• **Weight of the baby**- It is determined as a percentage of child aged 0-5 month who weighted at birth

• **Timely initiation of breastfeeding**- It is defined as the percentage of children aged 0-5 months receiving timely initiation of breastfeeding within 1 hour of birth.

• **Exclusive breastfeeding**- Here it is counted as the percentage of children aged 0-5 months who received exclusive breastfeeding in the last 24 hours.

• **Breastfeeding under 6–11-month age group**- It is defined as the percentage of children aged 6-11 months receiving breastfeeding or not.

• **Complimentary feeding**- It is described as the percentage of children aged 6-11 months of age who initiated complementary feeding. That means a child who used to take their first meal other than breastfeeding.

• **Contraceptive method**- It is counted as the percentage of recently delivered women having 12–23-month age group of children currently using any contraceptive method or not.

• **Use of modern contraceptive method**- It is defined as the percentage of recently delivered women with 12–23-month age group of children using modern contraceptive method or not.

• **Use of traditional method**- It is described as the percentage of recently delivered women having 12-23 age group of children currently using any traditional contraceptive method or not.

All the results were calculated with SAS software and the analysis findings were listed in the result 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
Caste				

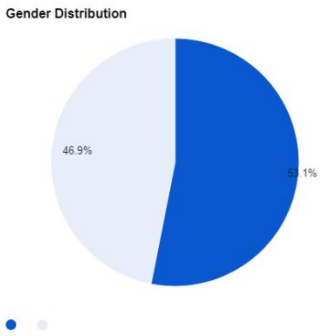
Marginalized	685	30.44	28.54	32.35
Family type Nuclear	883	39.24	37.23	41.26
Mother's education				
Illiterate	782	34.76	32.79	36.72
Upto 8th	510	22.67	20.94	24.40
More than 8th	958	42.58	40.53	44.62
Father's education				
Illiterate	687	33.16	31.13	35.19
Upto 8th	487	23.50	21.68	25.33
More than 8th	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	357	15.87	14.36	17.38

childre n				
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

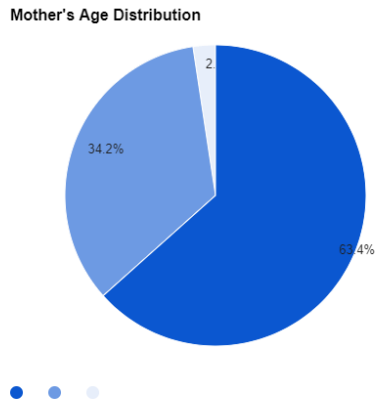
The socio-demographic characteristics of the study participants are outlined in Table 1.

Gender Distribution



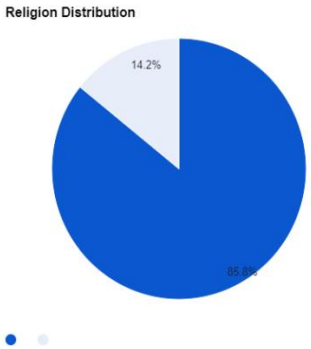
Boys constituted 53.07% (n=1194) of the total participants, while girls made up 46.93% (n=1056).

Mother's Age



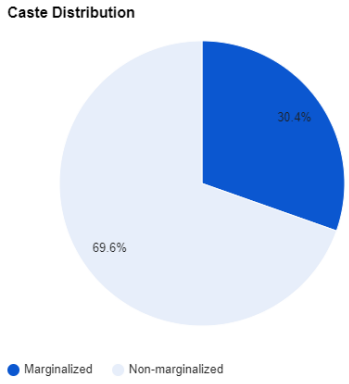
A majority of the mothers, 63.38% (n=1426), were aged 24 years or younger. Those aged between 25 to 34 years comprised 34.22% (n=770), and 2.4% (n=54) were aged 35 years or older.

Religion



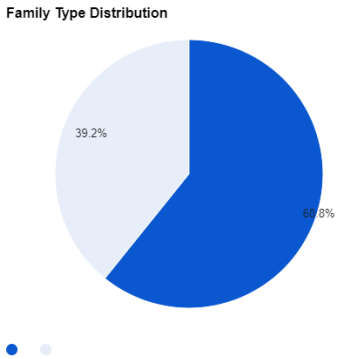
The majority of participants identified as Hindu, representing 85.78% (n=1930) of the sample. The remaining 14.22% (n=320) were from non-Hindu religious backgrounds.

Caste



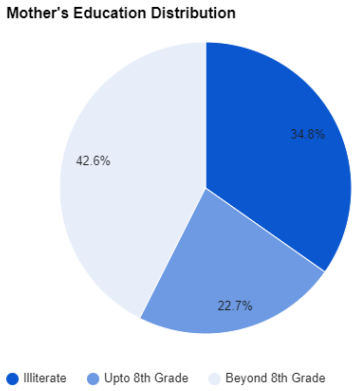
Regarding caste distribution, 30.44% (n=685) were from marginalized castes, while 69.56% (n=1565) belonged to non-marginalized castes.

Family Type



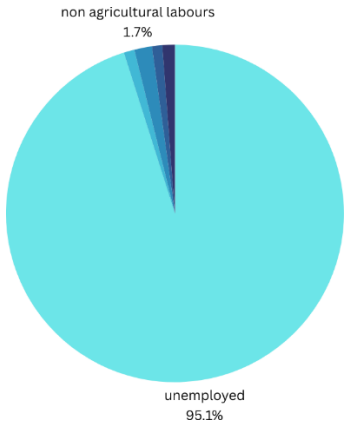
Most participants came from joint families (60.76%, n=1367), whereas 39.24% (n=883) lived in nuclear families.

Mother's Education



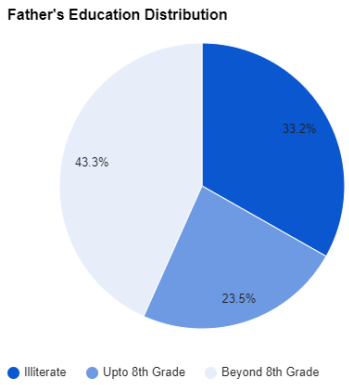
In terms of mothers' educational attainment, 34.76% (n=782) were illiterate, 22.67% (n=510) had education up to the 8th grade, and 42.58% (n=958) had education beyond the 8th grade.

Mother's Occupation



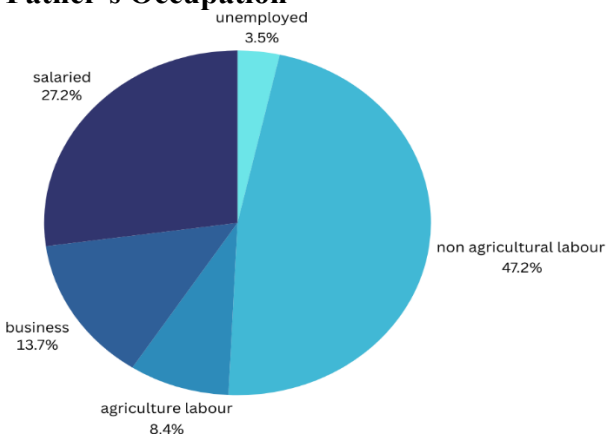
A large majority of the mothers, 95.11% (n=2140), were unemployed. Among those employed, 1.02% (n=23) were agricultural laborers, 1.69% (n=38) were non-agricultural laborers, 0.98% (n=22) were involved in business, and 1.2% (n=27) held salaried positions.

Father's Education



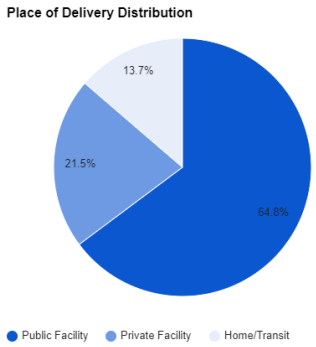
For fathers' education levels, 33.16% (n=687) were illiterate, 23.5% (n=487) had education up to the 8th grade, and 43.34% (n=898) had education beyond the 8th grade.

Father's Occupation



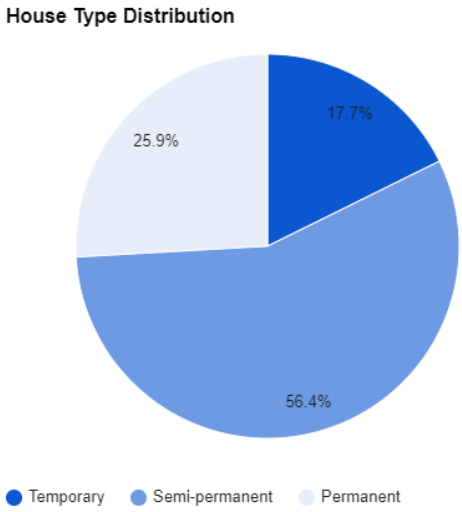
Among fathers, 3.51% (n=79) were unemployed. A significant portion, 47.24% (n=1063), were non-agricultural laborers, 8.4% (n=189) were agricultural laborers, 13.69% (n=308) were involved in business, and 27.16% (n=611) held salaried positions.

Place of Delivery



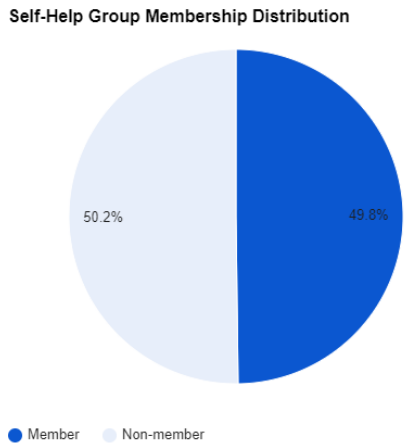
Regarding place of delivery, 64.76% (n=1457) of births occurred in public health facilities, 21.51% (n=484) in private health facilities, and 13.73% (n=309) took place at home or in transit.

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.

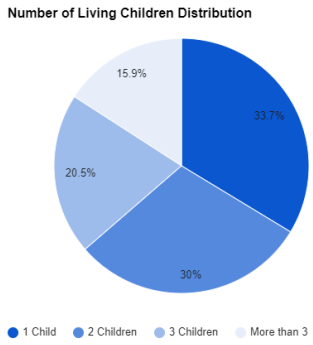
Self-Help Group Membership



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 following table

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	591	26.6096	24.7704	28.4489

your last pregnancy				
pregnant women consumed 90 or more IFA tablet during your last pregnancy	339	83.17 62	81.54 15	84.81 09
pregnant women received THR during your last pregnancy	908	40.35 56	38.32 68	42.38 43
institutional delivery	194 1	86.26 67	84.84 34	87.69
child aged 0-5 month received immediate Skin to skin care after birth	129 5	65.43 71	63.34	67.53 42
child aged 0-5 month weighted at birth	180 1	82.95 72	81.37 42	84.54 01
child aged 0-5 month received Timely Initiation of Breast Feeding (TIBF) within 1 hrs.	149 1	66.26 67	64.31 16	68.22 17
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 breast feeding	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% newborn 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 shed lights on healthcare practices among mothers and children, offering valuable insights for improving maternal and child health outcomes.

The findings reveal a significant prevalence of young mothers and the notable influence of Hinduism on healthcare decisions. This cultural factor underscores the necessity of culturally sensitive healthcare policies and practices. The influence of socio-economic status, particularly among non-marginalized backgrounds, was evident in resource access and overall healthcare, emphasizing the importance of addressing socio-economic disparities to ensure equitable healthcare access. Maternal education exhibited wide variation, and a substantial number of mothers were unemployed, highlighting the need

for improved educational and employment opportunities to empower mothers and potentially enhance healthcare outcomes for both mothers and children. During pregnancy, the study found high rates of check-ups and intake of iron and folic acid (IFA) tablets, indicating good adherence to antenatal care guidelines. However, only 40% of pregnant women received nutritional support, signifying a gap that requires addressing to ensure comprehensive prenatal care. The majority of births occurred in hospitals, reflecting good access to institutional delivery services. Although early initiation of breastfeeding was common, preserving breastfeeding rates and timely introduction of complementary foods presented challenges, indicating a need for continued support and education for mothers on breastfeeding practices and infant nutrition. In family planning, 23% of women utilized contraception after childbirth, with a preference for modern methods, suggesting a need for improved family planning services.

CONCLUSION

The study provides valuable insights into healthcare practices among mothers and children. It highlights the prevalence of young mothers and the influence of Hinduism on healthcare decisions. Furthermore, it underscores the impact of non-marginalized backgrounds on socio-economic status and access to resources. Maternal education levels varied, and a majority of mothers were unemployed. During pregnancy, there were high rates of check-ups and intake of IFA tablets. Additionally, 40% of pregnant women received nutritional support, and most births occurred in hospitals. After birth, early initiation of breastfeeding was common, but sustaining breastfeeding rates and timely introduction of complementary foods were identified as challenges. In family planning, 23% of women used contraception after childbirth, with a preference for modern methods. Overall, the study offers a comprehensive understanding of healthcare practices among this group, pointing to areas for improvement in maternal and child health outcomes.

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ANNEXTURE:

final evidence table (1).xlsx

FINAL LIST OF INDICATOR FOR REPORT.xlsx

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