



Rapid Assessment of Knowledge and Practices regarding Maternal, Infant and Young Child Nutrition (MIYCN) among the Obstetricians and Pediatricians working in Private Health Care Establishments (HCEs)



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Study Research Team

Principal Investigator

Dr Lalit Sankhe

Associate Professor, Department of Community Medicine, Grant Medical College and Sir J.J. Group of Hospitals,

Byculla, Mumbai

Co- Principal Invetigator

Dr Chhaya Rajguru

Associate Professor, Department of Community Medicine, Grant Medical College and Sir J.J. Group of Hospitals,

Byculla, Mumbai

Project Co-Lead Dr Vishal Shastri Sr. M & E Advisor Alive & Thrive India

Project Leader

Dr Shailesh Jagtap

Sr. Technical & Program Advisor

Alive & Thrive India

IAPSM (Indian Association of Preventive and Social Medicine) NATIONAL ADVISORS

Dr Sanjay Zodpey,

National President, IAPSM Vice President (Academics, PHFI, New Delhi) Director, (PHFI, Delhi)

Dr A. M. Kadri,

Secretary General, IAPSM Professor, Department of Community Medicine, B.J. Medical College,

Dr Arun Aggarwal,

Professor, Community Medicine & School of Public Health President AHSAS (Association for Health Systems Analysis and Strengthening) PGIMER, Chandigarh

Dr Amir Maroof Khan,

Associate Professor of Community Medicine, UCMS and GTBH Delhi Honorary Secretary, MIYCN-IAPSM National Working Group of IAPSM

Dr Preeti Negandhi

Additional Professor, Indian Institute of Public Health, Delhi Public Health Foundation of India, New Delhi Gurgaon, Haryana.

Dr Manish Rana,

Assistant Professor, Dept. of Community Medicine, GMERS, Medical college, Sola, Ahmedabad.

Dr Pradeep Kumar,

Professor, Community Medicine, Chief Editor, Indian Journal of Community Medicine,

Dr Sumeet Malhotra

Additional Professor, Centre for Community Medicine, All India Institute of Medical Sciences, New Delhi.

Dr Monalisha Sahu,

Assistant Professor, Department of Health Promotion & Education, All India Institute of Hygiene & Public Health, Government of India.



IAP (Indian Academy of Pediatric) NATIONAL EXPERTS

Dr Digant Shastri

Past President CIAP

Dr Ketan Bharadva

President IYCF and HMBA Chapter of IAP

Dr Somasekra

Secretary, IYCF and HMBA

Chapter of IAP

Dr Satish Tiwari

Founder Secretary IYCF Chapter, IAP

Founder Convenor, HMBA Chapter of IAP

SITE INVESTIGATOR AND RESEARCH ASSOCIATE

BIHAR STATE

DARBHANGA	PATNA	GAYA		
SITE INVESTIGATOR	SITE INVESTIGATOR	SITE INVESTIGATOR		
Dr Chittaranjan Roy Professor, Department of Community Medicine, Darbhanga Medical College, Darbhanga, Bihar	Dr C.M. Singh, Professor, Department of Community Medicine, All Indian Institute of Medical Sciences (AIIMS), Patna,	Dr Lokesh Tiwari Professor, Department of Pediatrics, All Indian Institute of Medical Sciences (AIIMS), Patna, Bihar		
INTERVIEWERS	INTERVIEWERS	INTERVIEWERS		
Dr Prabhat Kumar Lal	Dr Sanjay Pandey	Dr Prasant Kumar Singh		
Dr Veena Roy				

GUJARAT STATE

VADODARA	VALSAD	JAMNAGAR		
SITE INVESTIGATOR	SITE INVESTIGATOR	SITE INVESTIGATOR		
Dr Chandresh Pandya, Associate Professor, Department of Community Medicine, GMERS Medical College, Vadodara.	Dr Hitesh M. Shah, Department of Community Medicine, GMERS Medical College, Valsad.	Dr Ilesh Kotecha, Associate Professor, Department of Community Medicine, Shree M P Shah Medical College, Jamnagar.		
INTERVIEWERS	INTERVIEWERS	INTERVIEWERS		
Dr Kedar Mehta Dr Kajal Davara Dr Ajay Parmar	Dr Priti Solanky Dr Rachna Kapadia	Dr Prasant Kumar Singh		

KARNATAKA STATE

MANGALORE	BENGALURU	GULBARGA		
SITE INVESTIGATOR	SITE INVESTIGATOR	SITE INVESTIGATOR		
Dr Rashmi Kundapur Professor and Head, Department of Community Medicine,	Dr Deepthi KiranAssistantProfessor,DepartmentofCommunityMedicine,ESIC-MC,PGIMSR,BangaloreImage: Colspan="2">Image: Colspan"	Dr Waseem AnsariAssistantProfessor,DepartmentofCommunityMedicine,ESICMedicalKalaburagi.College,		
INTERVIEWERS	INTERVIEWERS	INTERVIEWERS		
Dr Anusha Rashmi Mr. Santosh P.	Dr Shuchita R. Das	Dr Prashant Kumar Dr Poonam P Shingade		

MAHARASHTRA STATE				
NAGPUR	MUMBAI	JALGAON		
SITE INVESTIGATOR	SITE INVESTIGATOR	SITE INVESTIGATOR		
Dr Uday Narlawar, Professor and Head, Department of Community Medicine, Government Medical College, Nagpur, Maharashtra.	Dr Lalit Sankhe, Associate Professor, Department of Community Medicine, Grant Medical College, Mumbai, Maharashtra.	Dr Yogita BavaskarAssociateProfessor,DepartmentofCommunityMedicine,GovernmentMedicalCollege,Jalgaon,Maharashtra.Image: State Sta		
INTERVIEWERS	INTERVIEWERS	INTERVIEWERS		
Dr Pragati Rathod Dr Abhay Chavan	Dr Amol R. Patil Dr Anusha CP	Dr Ganesh Lokhande Dr Jitendra Surwade Dr Daniel Saji		

UTTAR PRADESH STATE

VARANASI

LUCKNOW

ALIGARH

SITE INVESTIGATOR

SITE INVESTIGATOR

SITE INVESTIGATOR

Dr Ratan Srivastava,

Community Banarasi Hindu University King (BHU), Varanasi, Pradesh

Dr S K. Singh, Professor, Department of Professor, Department of Professor, Department of Medicine, Community George Utter College, Lucknow, Utter Muslim Pradesh

Medicine, Community Medicine, JN

Dr Najam Khalique,

Medical Medical College, Aligarh University (AMU), Aligarh

INTERVIEWERS

INTERVIEWERS

INTERVIEWERS

Dr Kalpana Kumari	Dr Abhishek Tewari	Dr Nafis Faizi
Dr Palllavi Pandey	Dr Mallika Gupta	Dr Yasir Alvi

Abbreviations and Acronyms

ANC	Antenatal Care
DCF	Data Collection Form
FGD	Focus Group Discussion
FOGSI	Federation of Obstetrics and Gynaecology Society of India
HCE	Health Care Establishment
IAP	Indian Academy of Pediatrics
IAPSM	Indian Association of Preventive and Social Medicine
ICF	Informed Consent Form
IDI	In-Depth Interview
IPD	In-patient Department
IEC	Independent or Institutional Ethics Committee
IFA	Iron Folic Acid
IRB	Institutional Review Board
MIYCN	Maternal, Infant and Young Child Nutrition
MOHFW	Ministry of Health and Family Welfare
NIH	National Institutes of Health
OPD	Outpatient Department
PHSC	Protection of Human Subjects Committee
PI	Principal Investigator
SOP	Standard Operating Procedure
SDG	Sustainable Development Goals
WHO	World Health Organization

EXECUTIVE SUMMARY

Introduction:

Nutrition has always been central in the quest of achieving optimum health. Maternal, infant and young child nutrition (MIYCN) focuses on maternal nutrition practices and breastfeeding and complementary feeding practices for children for optimal growth and development.

Decades of policy and programmatic efforts have been made in India in the form of National Nutrition Strategy in 2017 and POSHAN Abhiyaan (National Nutrition Mission) in 2018, to tackle the continuing challenge of malnutrition and to bring focus and momentum to the effort of reducing child and maternal malnutrition.

In such positive policy environment and political will to address malnutrition with special focus on MIYCN, the government efforts have the potential to accelerate progress towards reaching the targets under sustainable development goals.

Nutrition counseling is an important strategy in achieving the desired results in MIYCN improvements. In India due to lack of dedicated nutritional counselors, healthcare providers such as doctors and nurses play a vital role in providing the much-needed regular nutrition counseling to bring about a positive change in the knowledge and practices of pregnant and lactating women regarding maternal and child nutrition.

This report summarizes the outcomes of knowledge, perceptions and practices of health care providers from private HCEs regarding MIYCN in India. This study was conducted to provide insight into the knowledge, perceptions and practices of obstetricians and pediatricians regarding MIYCN and the willingness, feasibility and challenges to adopt MIYCN guidelines in private health care settings.

Methodology

The study adopted a mixed methods design using both quantitative and qualitative data collection methods. Ethical clearance was obtained for the study. The online survey was conducted over a period of 45 days, and further extended to 15 days due to low response rate. The participating private HCEs from online survey were further divided into the four type of facilities such as 1) Single person clinics 2) Poly clinics 3) Nursing Homes 4) Multi specialty / Corporate in alignment with the objectives of the study.

Qualitative data was collected through key informant interviews with obstetricians and pediatricians in 120 sites. The participants for the qualitative part of the study were selected randomly from five states of Uttar Pradesh, Bihar, Maharashtra, Gujarat, and Karnataka and 3 cities from each of this participating states. The participating obstetricians and pediatricians in the quantitative study, were members of professional associations like FOGSI and IAP. Only those members practicing in private health care establishments were included. The participants were selected as per their workplace which was categorized into 1) Single person clinics 2) Poly clinics 3) Nursing Homes 4) Multi specialty/Corporate.

The quantitative data was analyzed to understand the knowledge gap of the participants regarding globally recommended evidence based maternal, infant and young child nutrition guidelines. The data was examined to know the current practices and willingness to adopt the evidence based MIYCN guideline and also to identify the systems and processes for strengthening of MIYCN clinical practice among the private HCEs. The data was further detailed to identify the challenges in adopting the MIYCN practices in private HCEs. Qualitative data was analyzed through content analysis, to further probe the identified indicators and obtain detailed information as supporting evidence to the quantitative data.

Results

The sample size achieved for the quantitative survey after data processing was 90 for obstetricians and 360 for pediatricians. As the response rate for each indicator / question was different, the sample size (N) presented for each indicator is different. ¹

In qualitative study the sample of obstetricians and pediatricians was 55 and 59 respectively and was equally represented by all four facility types. The profile of the study participants of qualitative study was seen to be similar to the quantitative study in terms of average age, educational qualification, and services provided. All the facilities had adequate obstetricians, pediatricians and nurses was almost 100%, but less than 50% of the facilities had dietician or counselors.

¹ In the study questionnaire, for a few questions, the correct answers could be recorded as multiple responses, so it should be noted that when this data of multiple correct answers is presented, the total percentage may not add up to 100%

Findings from Obstetrician survey :

Policy and guidelines:

What's working well: OBGYNs considered MIYCN important for the health of mothers and children and held themselves responsible for providing nutritional advice. Most agreed to applicability of national MIYCN guidelines to private healthcare settings (88%).

What requires more attention: Fewer OBGYNs from single provider settings agreed to the applicability of national MIYCN guidelines to private healthcare settings (70%) than those working in multispecialty hospitals and nursing homes (88%).

Administrative effort, recruitment, training, space constraints and patient load were cited as challenges in adopting MIYCN policies.

Direct interviews revealed 40% were unaware about the IMS Act, irrespective of type of facility.

Knowledge:

What's working well:

Maternal nutrition

Overall, OBGYNs were not well informed on updated global and Indian recommendations on maternal nutrition services. Counseling on how to consume IFA was reported correctly by over 60% of the OBGYN in online survey; knowledge of other services was reportedly lower.

Breastfeeding

Nearly 80% of OBGYNs knew about initiating breastfeeding within an hour of birth.

Over 90% of OBGYNs knew the duration of exclusive breastfeeding and recommended age for introduction of complementary feeding.

The majority agreed to "Prescribing breastmilk substitutes with written consent of other/family members only when indicated".

What requires more attention:

OBGYNs' knowledge about gestational weight gain, pregnancy diet (frequency of meals second trimester onwards and diversity) and IFA dose recommendation in pregnancy and post-partum ranged from 1% to 30%. It was low based on both online survey and direct interviews.

"IFA is advised 2 months from first visit and then assessed clinically if required"-OBGYN, Nursing home.

Over 75% of OBGYNs reported delaying breastfeeding after C-section deliveries, highest among those from single provider facilities who provide delivery care in other tertiary hospitals (88%).

"Breastfeeding in C-section is usually delayed because in most of the cases patients are exhausted and mother-in-law or any elderly women in the family starts pre-lacteal feeds"-OBGYN, Multispecialty hospital

"Skin to skin contact and breast crawl was tried few times but it requires lot of time and patience"- OBGYN, Nursing home

3 of 8 OBGYNs (38%) in single provider settings reported prescribing breastmilk substitutes often.

MIYCN training:

What's working well: Nearly 90% of OBGYNs in single provider facilities or nursing homes felt they needed additional training on MIYCN.

What requires more attention: Only half of OBGYNs reported ever being trained on MIYCN, of which half received training only during medical graduate/post-graduate course work.

MIYCN protocols:

What's working well: All types of facilities reportedly have protocols for antenatal care (ANC) (without nutrition services). Multispecialty hospitals and nursing home have protocols for early initiation of breastfeeding, nutrition counseling during child immunization visits. However, the proportion of facilities with protocols was not as high when actually visited.

What requires more attention: Maternal nutrition protocols are least available across all types of facilities (<70%). Half of the single service provider facilities lack protocols on maternal nutrition, breastfeeding (early initiation) and nutrition services during child immunization session.

Counseling services and service providers:

What's working well: Almost half of OBGYNs provided nutrition counseling themselves, followed by nurses (38%). Even in single provider facilities, pregnant women were referred to an independent or hospital based dietician or counselor if felt necessary. Almost all OBGYNs across different types of facilities considered husband's participation in counseling sessions important. Over 75% reported including them in single provider facilities and nursing homes. Participation was slightly lower in multispecialty hospitals (66%).

What requires more attention: In facilities with access to dieticians, only 24% of OBGYNs referred pregnant women to dieticians for counseling. Nutrition counseling is covered sparingly by OBGYNs during ANC - weight gain (30%), micronutrient supplementation (30%), diet diversity (24%), deworming (15%), breastfeeding-colostrum feeding, attachment, in pregnancy was even lower (25%). About 50% reported using audio-visual aids for nutrition counseling in onsite interviews.

"One to one counseling is done during ANC, but it is not according to any protocol. Counseling mainly is provided if ANC mother is having problem such as less weight gain/Diabetes/Hypertension" – OBGYN, Nursing home

Findings from pediatrician survey :

Policy and regulation:

What's working well: Pediatricians considered MIYCN important for the health of mothers and children, and held themselves responsible for providing nutritional advice. Most agreed to applicability of national MIYCN policies to private healthcare settings in both online and onsite interviews (90%).

What requires more attention: Disinterested administration, undervalued nutrition services, and lack of space and counselors were cited as challenges in adopting government MIYCN policies by pediatricians.

Knowledge:

What's working well:

Breastfeeding:

About 71% of pediatricians knew about initiating breastfeeding within an hour of birth. Around +10% pediatricians reported of prescribing breastmilk substitutes regularly. Those who do not, only prescribe when indicated.

"I do not promote giving pre-lacteal feed to the newborn. But, in special circumstances such as newborn in NICU, mother is having problems in secretion of milk, sick mother not in the same facility as the baby, in absence of human milk bank etc., I advise formula feed" – Pediatrician, Nursing home

Kangaroo Mother Care

What's working well:

Over 80% of pediatricians practicing in multispecialty hospitals were aware about kangaroo mother care for low birth weight babies.

Complementary feeding

What's working well: Over 90% pediatricians knew about the duration of exclusive breastfeeding and recommended age for introducing complementary feeding.

What requires more attention: Over 80% of pediatricians reported delaying breastfeeding after C-section deliveries. A little over half knew importance of rooming in and about 65% knew skin-to skin contact facilitated breastfeeding. Over 90% did not know that prelacteals could interfere with breastfeeding. Knowledge about kangaroo mother care was lower among pediatricians practicing in single provider settings and polyclinics (66%). Approximately one-third of pediatricians knew about including at least four different food groups in complementary feeds.

MIYCN training:

What's working well: Nearly 90% of pediatricians felt they needed MIYCN training

What requires more attention: Only half of the pediatricians reported ever being trained on nutrition, of which half were only trained during medical graduate/post-graduate course work.

"In our hospital the management with the help of doctors organizes training sessions for nurses regarding breastfeeding but I feel that complementary feeding is a topic which takes a back seat"- Pediatrician, multispecialty hospital.

Counseling services and service providers:

What's working well: Almost all pediatrician in multispecialty hospitals, nursing homes and polyclinics reported providing breastfeeding counseling themselves during postnatal wards. Reportedly, coverage of all recommended breastfeeding practices in counseling was over 90%. Coverage of diet diversity, frequency of feeding in counseling was also reported to be higher than 80%. Almost all pediatricians considered counseling fathers on baby's nutrition and care important. Over 80% of pediatricians in all types of facilities, except multispecialty hospital included fathers in counseling.

What requires more attention: In multispecialty hospitals and nursing homes, less than 20% of pediatricians reported dieticians providing counseling services despite being available. Use of counselors was even lower at 10%.

About 65% of pediatricians reported providing nutrition counseling for sick infants and children; a missed opportunity to emphasize on nutritional requirements and diet. A higher proportion of pediatricians in polyclinics reported providing counseling to sick babies than other type of facilities.

"I have observed a very positive change that nowadays, fathers mostly accompany the mother for pediatric visits. And this opportunity can be utilized for counseling them regarding the child nutrition"

"We have dietician as well as a nutritional counselor whose role is to counsel the mothers for their nutrition needs as well as for the newborn babies nutritional needs and educate them for breastfeeding and that is a separate section, in case there is any issue we refer the patient to them"- Pediatrician, Multispecialty hospital

Growth monitoring and promotion:

What's working well: Either IAP or World Health Organization (WHO) endorsed growth charts were being used for growth monitoring.

Status of engagement of lactational nutrition counselors in private sector

Obstetric facilities: Only 26% of OBGYNs from multispecialty hospitals reported having dedicated lactation or nutrition consultant/counselor. The need for dedicated nutritional or lactational counselor in their facility was felt by 90% of the obstetricians.

Pediatric Facilities: Similarly, only 25% of pediatricians from multispecialty hospital reported having dedicated lactation or nutrition consultant/counselor. The need for dedicated nutritional or lactational counselor in their facility was felt by 87% of pediatricians.

Recommendations:

Key actions for strengthening MIYCN services in private sector facilities

- 1. Increase accessibility of and orient providers on key national guidelines and guidelines issued by professional associations on MIYCN
- 2. Organize Continued Medical Education sessions on MIYCN linked to credits or recognition in medical council
- 3. Develop and support institutionalization of protocols for missed MIYCN services maternal nutrition, early initiation of breastfeeding after cesarean section and complementary feeding.
- 4. Private health facilities should devise customized recommendations on task shifting to nurses, dieticians, lactation consultants, or other counselors or any staff as per the availability in the different type of facility to ensure that clients receive timely and quality nutrition counseling given that doctors' workload often challenges them from being able to provide individualized nutrition counseling.
- 5. Embed tested mechanisms like quality improvement (QI) approach for systematically improving and monitoring implementation of standard protocols.
- 6. Develop certification and/or branding for private facilities as "Mother and baby friendly" based on the type of facility adopting global standards of Baby Friendly Hospital Initiative.

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Introduction and Background

India is a country with a diverse socio- cultural background. India has 28 states and 8 Union Territories. Indian 2020 population is estimated at **1,380,004,385** people at midyear according to United Nations data (Statistical Yearbook (Sixty-third issue), 2020). India population is equivalent to 17.7% of the total world population. India ranks number 2 in the list of countries by population.

The birth rate for India is **20 births per 1000 mid- year population** (SRS Statistical report, 2018). India's present Maternal Mortality Ratio (MMR) is estimated at 113 per 100,000 live births, (SRS, July 2020)), which is below the Millennium Development Goal target and puts the country on track to achieve the Sustainable Development Goal (SDG) target of an MMR below 70 by 2030. The mortality rates for infants and underfives are 32 per 1000 live births and 36 per 1000 children, respectively (SRS Statistical report, 2018).

Economically, India is ranked as a developing country. Food insecurity and malnutrition affecting children and adults is linked to the Gross Domestic Product (GDP), per capita income, and poverty.

Malnutrition is multifactorial, but suboptimal diet (including inadequate breastfeeding) is seen to be the commonest cause across all forms of malnutrition. 45% of deaths among children under five, mainly in low and middle-income countries are attributed to malnutrition. At the global level, the SDGs can be achieved by 2030 only if efforts are focused to end all forms of malnutrition (WHO : Development Initiatives, 2018)

Provision of adequate nutrients in early stages of life is key to good physical and mental development and long term -term health benefits.

In low-income countries like India, low body mass index and short stature are highly prevalent, leading to poor foetal development. Iron-deficiency anemia affects 30% women of reproductive age (468 million), and 42% of pregnant women (56 million). Maternal anemia is associated with reduced birth weight and increased risk of maternal mortality. Every year an estimated 13 million children are born with intrauterine growth retardation and about 20 million with low birth weight. A child born with low birth weight has a greater risk of morbidity and mortality. (WHO, 2014)Addressing malnutrition before women become pregnant is critical to ending the intergenerational cycle of malnutrition.

At the global level, the latest data on infant diets indicates an increase in the proportion of exclusively breastfed babies only to 41% (from 37% in 2012). Only 16% of children aged 6 to 23 months eat minimally acceptable diet while only half (51%) of children aged 6 to 23 months consume the recommended minimum number of meals. While there are differences between countries, rural and urban settings and wealth groups, poor feeding practices of infants and young children are a problem everywhere. (WHO Global Nutrition survey 2018)

Despite substantial economic growth and efforts towards addressing malnutrition in

India. chronic malnutrition (stunting) in children under five years of age reduced by only one-third between ,1992 and 2016 and remains alarmingly high, with 38.4% of children stunted in the country (NFHS, 1992; IIPS, 2017). Infant and young child feeding (IYCF) practices shape the nutritional status of children under two years of age and impact child survival and health and development outcomes in the long term.

Almost all stunting takes place in the first 1000 days after conception. Evidence shows that appropriate complementary feeding practices reduces the incidence of stunting. On the other hand, severe infectious diseases childhood in (measles. diarrhoea. meningitis, pneumonia, and malaria) wasting and possibly stunting. provoke Optimum growth in the first 1000 days of life is also a preventive factor for overweight in adolescence and adulthood.

Poor nutrition results not only from a lack of food but also from inappropriate feeding practices where the timing, quality and quantity of foods given to infants and young children are often inadequate. Optimal feeding practices during infancy and early

As per the Comprehensive Nutrition Survey 2016-18:

Fifty-seven percent of children aged 0–24 months were breastfed within one hour of birth, (Early initiation of breastfeeding)

Fifty-eight percent of infants under age six months were exclusively breastfed.,

Eighty-three percent of children aged 12 to 15 months continued breastfeeding at one year of age

Timely complementary feeding was initiated for 53% of infants aged 6 to 8 months

Minimum dietary diversity in 6-23 months children was 21 %

Minimum meal frequency in 6-23 months children was 41.9%

Minimum acceptable diet in 6-23 months children was 6.4% only

childhood, comprising of early initiation of breastfeeding, exclusive breastfeeding in the

first six months of life. continued breastfeeding through age one-year, timely introduction of complementary foods, ageappropriate complementary feeding focusing on diet diversity are critical for survival, child healthy growth and development of children under two years of age.

The three core indicators of minimum dietary diversity, minimum meal frequency, and minimum acceptable diet are recommended by the WHO to assess the quality of complementary feeding practices for children aged 6 to 23 months.

TargetMIYCNIndicatorsgloballyIndicators:

TheGlobalNutritionMonitoringFramework(GNMF)onMaternal,InfantandYoungChildNutritiontowardsachievement of the six globalWHA targets:

At the Indian Scenario:

In 2018 Government of India launched its

ambitious National Nutrition Mission or the POSHAN Abhiyan with a resolve to end its all forms of malnutrition by 2030 including achieving internationally agreed indicators of stunting and wasting in children under 5 years of age and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons by 2025. Most of the above interventions have been adopted under the POSHAN Abhiyan strategy with major focus on high priority districts with poor indicators related to nutrition (aspirational districts).

Critical nutrition indicators on MN & IYCF practices have been included in last 2 National Family Health Survey (NFHS) i.e., NHFS 3 and NFHS 4. The below table depicts the indicators covered and the progress status on those practices.

Target MIYCN Indicators globally

The MIYCN Plan includes six global nutrition targets to be achieved by 2025:

1. A 40% reduction of the global number of children under five who are stunted.

2. A 50% reduction of anemia in women of reproductive age

3. A 30% reduction of low birth weight

4. No increase in childhood overweight

5. Increase the rate of exclusive breastfeeding in the first six months up to at least 50%

6. Reduce and maintain childhood wasting to less than 5%

Sr No.	Indicators	Coverage Status		
		NFHS 4	NFHS 3	
Materna	l Nutrition Indicators			
1.	Pregnant women age 15-49 years who are anaemic (<11.0 g/dl)	50.4	57.9	
2.	Mothers who consumed iron folic acid for 100 days or more when they were pregnant	30.3	15.2	
Infant a	nd Young Child Nutrition Indicators			
1.	Children under age 3 years breastfed within one hour of birth	41.6	23.4	
2.	Children under age 6 months exclusively breastfed	54.9	46.4	
3.	Children age 6-8 months receiving solid or semi-solid food and breastmilk	42.7	52.6	
4.	Breastfeeding children age 6-23 months receiving an adequate diet	8.7	NA	
5.	Non-breastfeeding children age 6-23 months receiving an adequate diet	14.3	NA	
6.	Total children age 6-23 months receiving an adequate diet	9.6	NA	
7.	Children under 5 years who are stunted (height-for-age)	38.4	48.0	
8.	Children under 5 years who are wasted (weight-for-height)	21.0	19.8	
9.	Children under 5 years who are severely wasted (weight-for-height)	7.5	6.4	
10.	Children under 5 years who are underweight (weight-for-age)	35.8	42.5	

The nutrition situation in India justifies its high- level national commitment with strong policy initiatives based on evidence-informed interventions towards combating all forms of malnutrition in the country. Ambitious targets have been set for POSHAN Abhiyan to reduce stunting (2%), underweight (2%), anemia (3%) among young children, women and adolescent girls and reduce low birth weight (2%) per annum.

Rationale

India has always addressed the nutrition challenges of the vulnerable population like women and children through various legislation, policies and programmes in all sectors. legislations such as National food security act 2013, Infant Milk substitute, Feeding Bottles and Infant Foods act 1992, policies such as National Nutrition Policy 1993, National Health Policy 2002, National Policy for children 2013, addressing the various determinants of malnutrition through well-articulated interventions. Many national programmes through nutrition specific and nutrition sensitive indicators have significant impact on the nutrition indicators of the country. The recently published Nourishing India document by NITI AYOG, has brought nutrition on priority on the national development agenda.

Inspire of the commitment, India's progress in MIYCN has been below desired levels and uneven with wide interstate disparities. Though around 20 million of the 26 million births that take place in India are in health facilities, only 12 million new-borns are breastfed within the first one hour of life, highlighting a critical "missed opportunity" for new-borns, who do not receive their first inoculation against death and disease. Additionally, 45% of the infants below 6 months are still not receiving the benefits of exclusive breastfeeding. Despite the high burden of maternal anemia, maternal nutrition services remain neglected among the antenatal services provided with only 30% of Indian women consuming iron folic acid (IFA) tablets (NFHS IV).

The Health sector , through health professionals like, attending Obstetricians and Pediatricians, para medical staff or dedicated staff has the responsibility of utilizing every opportunity for advising , counseling , providing motivation and technical support to the mother and other family members to promote practices like consumption of iron rich diet , iron folic acid supplementation during ANC period, factors influencing maternal weight gain , exclusive breastfeeding , complementary feeding , regular monitoring of growth and development of the child to ensure favourable outcomes in terms of reduced morbidity and mortality in Mother and Child .

The private health care sector plays an important role in the Indian healthcare delivery system. As per NHFS -4, 56% of urban India and 46% of rural India choose private health care system for any ailment. Private sector health services are accessed by majority of the Indian population (around 70%) for maternity and childcare services, predominantly at out-patient or OPD sites and also for in-patient care. However, this

sector is not well regulated and there are gaps in provision of evidence-based quality care. There is a need for the private health system to ensure that mother and baby friendly care follow the principles of the revised Baby Friendly Hospital Initiative and has the capacity to deliver evidence based MIYCN interventions. There is lack of research data regarding provision of MIYCN services in private health care facilities. Looking at the significant role that private health care facilities play in providing health care services to majority of the population, it is imperative to understand the knowledge, perceptions and practices of obstetricians and pediatricians from private HCEs so as to provide MIYCN services and improve the nutritional status of mothers and children.

Professional medical associations can play an influential role in improving the practices of their individual members, especially those in private health facilities, by advocating for emerging best practices and undertaking continued skill development for evidencebased standard practices, such as integrating maternal nutrition interventions in antenatal care (ANC), promoting, protecting and supporting optimal breastfeeding, and creating a mother and baby friendly environment. Thus, a rapid review of current knowledge and MIYCN related clinical practices among private practitioners (obstetricians and pediatricians) who are members of Indian Academy of Pediatrics (IAP) and Federation of Obstetric and Gynaecological Societies of India (FOGSI) was conducted with active participation of IAP and FOGSI for enhanced understanding of the private sector care provision pertaining to MIYCN to plan future interventions for improvement effectively.

Goals and Objective

Study Goal

The overall goal of conducting the research was to assess the current knowledge and practices pertaining to MIYCN guidelines among the private practitioners (obstetricians and pediatricians) working in selected types of private HCEs; to understand the key bottlenecks/barriers and to identify opportunities in adopting the evidence-based MIYCN guidelines in these different types of private HCEs.

Figure 1: Objectives of the study

To assess current knowledge pertaining to globally recommended evidence based MIYCN guidelines among the study population To understand the current practices and willingness to adopt the evidence based MIYCN guidelines in selected types of private HCEs.

Study Objectives

To understand systems and processes to strengthen evidence based MIYCN clinical practice in selected types of private HCEs.

Toidentifythebottlenecks/challengesinadoptingevidence-basedMIYCN guidelines in selectedtypes of private HCEs.

Primary Outcomes

The expected outcomes from the study:

- Gaps identified in terms of MIYCN knowledge and practices of services providers (obstetricians and pediatricians) in private HCEs.
- Current systems and processes in place for inclusion of MIYCN interventions in the routine delivery of services
- Distribution and delivery of key advice/counseling messages on IFA and calcium consumption, diet advice/counseling (especially on quantity and diversity), regular weight measurement and weight gain monitoring for pregnant women during ANC
- Breastfeeding advice/counseling during ANC
- Early initiation of breastfeeding to mothers with normal vaginal delivery and with caesarean section delivery and promotion and protection and breastfeeding during stay in the hospital.
- Delivery of key advice/counseling messages and support on exclusive breastfeeding and age-appropriate complementary feeding to mothers for both healthy and sick child during pediatric OPD visit/immunization clinic visit.

- Gaps identified in terms of systems and processes in place for inclusion of MIYCN interventions in the routine service delivery in private HCEs.
- Identification of facility type (e.g., single person clinic, poly clinic, nursing home, and multi-specialty/corporate hospitals) specific recommendations for adoption of MIYCN services in private HCEs.

Methodology

Study design

A Descriptive, observational cross-sectional study was designed and conducted to assess the knowledge, practices and the systems in place for provision of maternal and infant and child nutrition services at various service delivery contact points in private HCEs (ANC OPD, Labour room, PNC ward, Pediatric OPD, Immunisation OPD,). The data collection methods included an on- line self-administered survey, onsite facility assessment using a combination of interview with health care providers and a facility observation checklist.

Online Providers Survey (quantitative study) was conducted with obstetricians and pediatricians using the self-administered online survey tool (Kobo Toolbox platform) for a quick assessment of their knowledge and provision of maternal and infant and child nutrition related services.

The online link of this survey was widely disseminated and distributed among obstetricians and pediatricians with support from the FOGSI and IAP leadership through their routine communication channels (Email and WhatsApp). Similar channels were used for multiple reminders, to ensure the targeted sample size for the research study.

Study Tool Platform:

Kobo Toolbox (https://www.kobotoolbox.org/) is an open source development platform which is an initiative of United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) and Harvard Humanitarian Initiative.

This platform is available for unlimited use to humanitarian agencies, <u>researchers</u> and Aid workers around globe. Each user account in Kobo Toolbox is protected through login and password, data can be collected in online and offline mode using phones, <u>tablets</u> or any browser.

Data is synchronized via SSL (Secure Sockets Layer) is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral. There are Strong safeguards against data loss and Data immediately available right after <u>it's</u> collected

Kobo Toolbox uses ODK (Open Data Kit) technology for development of questionnaire. These questionnaires may include all the complex forms with skip logic and validation. This also support development for questionnaires or forms in multiple languages (viz. English and Hindi or any other language as required for research project). Programming may be easily done in different question types viz. single response, multiple response, ratings, collection of location information, image, video etc.

Kobo Toolbox also provides freedom to share only the relevant portion of the project with users at various levels. For eg. A person with data collection rights will have access to only questionnaire and will be able to submit it on the server. A person with review and editing rights may have access to the submitted data on the server and may review submissions, if required.

Data collected through Kobo Toolbox (or any other ODK platform viz. Survey CTO etc.) may be easily downloaded in various formats for statistical analysis. Some of these popular formats are text or Comma Separated Values (.CSV) file; MS Excel file (.XLS or .XLSX); SPSS data file (.sav); imported in STATA, Power BI, Tableau etc.) **Onsite Facility Assessment (Qualitative study)**: The onsite facility assessment was conducted by interviewing health care providers from the selected four types of private health care facilities i.e., single person facilities, poly clinics, nursing homes and multispecialty hospitals, with a facility observation.

Each service delivery point – ANC OPD, labour room, post-natal care ward, immunization OPD, pediatrics OPD, advice/counseling corner/room of counselor was assessed for facility readiness with respect to provision of MIYCN services such as:

- The availability and use of service provisions tools and communication materials (job-aids, posters, pamphlets, wall charts, protocols etc.)
- > The current system of recording MIYCN service provision at various contact points

Facility observation checklist:

- This was conducted among a sample of private health care providers (obstetricians and pediatricians) working in the sampled facilities. Following domains were captured:
- Knowledge gaps among the oobstetricians and pediatricians regarding MIYCN
- Systems and processes of service delivery practices and application of MIYCN in the health care facilities at defined points of contact (ANC OPD, Labour room, PNC ward, Pediatric OPD, Immunisation OPD, Counseling session)
- Challenges and willingness in the application of MIYCN as per the guidelines in the health care facility
- Opportunities and MIYCN integration in the service delivery platform

Health care providers Interview

- This was conducted among a sample of private health care providers (obstetricians and pediatricians) working in the sampled facilities. Following domains were captured:
- Knowledge gaps among the oobstetricians and pediatricians regarding MIYCN
- Systems and processes of service delivery practices and application of MIYCN in the health care facilities at defined points of contact (ANC OPD, Labour room, PNC ward, Pediatric OPD, Immunisation OPD, Counseling session)
- Challenges and willingness in the application of MIYCN as per the guidelines in the health care facility
- Opportunities and MIYCN integration in the service delivery platform

The data obtained was collated, analysed and synthesized to develop a better understanding of prevailing situation of MIYCN knowledge and practices among the providers.

Study Setting:

Geographical spread of study sample:

The online provider survey - a **nationwide survey** presented a comprehensive picture of the current status of MIYCN knowledge and services provided among the obstetricians and pediatricians practicing in private health care facilities using an online survey tool (Kobo Toolbox).

The onsite facility assessment was conducted in five states i.e., **Uttar Pradesh, Bihar, Maharashtra, Gujarat and Karnataka.** These 5 states were chosen purposively to represent various geographical regions within India – North zone (Uttar Pradesh); East zone (Bihar); Central zone (Maharashtra); South zone (Karnataka) and West zone (Gujarat).



Criterion of selection of these states was:

- Population size;
- Burden of malnutrition
- Size of private sector providers within each zone

These selected 5 states represent almost 50 percent of country's population as per census 2011, having maximum burden of under nutrition and sizeable number of private practitioners. In each selected state, 3 districts with medical colleges were randomly selected, based on status of wasting among children or the percentage of severely acute malnourished children, representing high, medium and low proportion as per the NFHS-4 data. The district headquarter of these districts were the sampling unit for the onsite facility assessment. The onsite facility assessment including survey of health care provider from private HCEs and facility observation was conducted from the four types of facilities (as presented in box)

Single Person Clinic: The obstetrician/pediatrician were the only practicing doctor in that clinic (only OPD services)

Poly Clinic: There may be other speciality doctors practicing in the clinic (only OPD services)

Nursing Homes: nursing homes with IPD maternity and /or child care services. (OPD and IPD services)

Multi-Specialty /Corporate Hospitals: OPD and IPD services with Multiple specialities including Maternal and child services.

Figure 2: Study setting



Sampling Procedure

Online Providers Survey

The objective of the online provider survey was to reach a nationwide sample of private sector providers (obstetricians and pediatrician), working in the private HCEs. These establishments could be single person clinic or poly clinics or nursing home or multispecialty hospitals.

According to published sources available on IAP website (*https://www.iapindia.org*) and FOGSI website (https://www.fogsi.org/) both these bodies have approximately 28-30,000 members each, who are spread across entire country.

Minimum Sample size required (per stratum)

= 381 + 50 percent non-response due to online survey = 572

Total estimated sample size was 1144

(572 obstetricians and 572 pediatricians).

In accordance with program objectives, sample

sizes for the online provider survey among pediatricians and obstetricians for each stratum were estimated using the below formulae

**Various literature on online survey suggests that non-response rate for online survey could vary between 40% to 80%.

Onsite Facility Assessment:

For the qualitative survey, quota sampling was done to conduct IDIs and facility observation checklists with the practitioners working in private HCEs. In this case the

Sample size

n = N*X / (X + N - 1),

Where, $X = Z\alpha/22 * p*(1-p) / MOE2$,

Za/2 is the critical value of the Standard Normal distribution at $\alpha/2$ (e.g., for a desired confidence level of 95%, α is 0.05 and the critical value is 1.96),

p is the expected true proportion, and **MOE** is the margin of error or desired level of precision (half desired CI width),

N is the population size. For small populations **n** can be adjusted so that n(ad) = (Nan)/(Nan). Note that a Finite Population Correction has been applied to the sample size formula.

Estimated Proportion	0.5
Desired precision of estimate	0.05
Confidence level	0.95
Population size	30000

sampling unit was the health facility. One obstetrician and a pediatrician were selected randomly (using a random number table) from each of the facility types from each of the cities. The distribution of the sample group was as below; **Total=120**

Sample size and distribution across the study sites/cities

The obstetricians from private HCEs that were randomly selected as study participants belonged predominantly to either of the four type of private HCEs like Single member clinic, Polyclinic, Nursing home and multispecialty hospital.

(*Here P*= *Pediatrician*, *O*= *Obstetrician*)

Levels (States)	Single	Poly Clinics	Nursing	Multispeci	Sample	Units (Cities)	Total Units
(States)	Wiember	Chines	Homes	Hospitals	y	(Clucs)	Onits
Bihar	2	2	2	2	8	3	24
	(1P+1O)	(1P+1O)	(1P+1O)	(1P+1O)			
Uttar	2	2	2	2	8	3	24
Pradesh	(1P+1O)	(1P+1O)	(1P+1O)	(1P+1O)			
Karnataka	2	2	2	2	8	3	24
	(1P+1O)	(1P+1O)	(1P+1O)	(1P+1O)			
Maharashtr	2	2	2	2	8	3	24
а	(1P+1O)	(1P+1O)	(1P+1O)	(1P+1O)			
Rajasthan	2	2	2	2	8	3	24
	(1P+1O)	(1P+1O)	(1P+1O)	(1P+1O)			
Total	10	10	10	10	8	15	120
	(5P +	(5P+	(5P +	(5P + 5O)			
	50)	50)	50)				

Table 1: Sample size distribution

Study participants and eligibility criteria

National FOGSI and IAP body facilitated in identification of point persons at each of the city to support the sampling of the facilities as per the definition of HCEs explained above for recruitment of the participants under this study.

Online Provider Survey

The participants for this online provider survey were qualified specialists as obstetricians or pediatricians who gave consent and were providing services at private health care facilities.

Since the study participants were approached through their respective professional body's communication channels, therefore, it was also required that they are members of IAP or FOGSI. The participants not meeting the inclusion criteria were excluded from the study.

Onsite Facility Assessment

Participants for the Onsite Facility assessment were randomly selected Obstetricians and Pediatricians from private HCEs from 15 sites in 5 states. This included 2 components (a) Provider Interview (b) Facility Observation. Both the activities were conducted at the same facilities sampled for the purpose.

Data Collection Tools

Two types of tools were used for this assessment (Online Provider survey and Onsite Facility Assessment tools).

Online Provider Surveys The online provider survey tool, self-administered by online electronic medium was captured through Open Data Kit (ODK) based Kobo Toolbox platform.

There were two separate survey questionnaires – one for obstetricians and one for pediatricians.

Obstetrician online tool

Assess the knowledge and practice gaps among the obstetricians in delivering maternal nutrition and breastfeeding related services at contact points like ANC OPD, Labor room, Operation Theatre and PNC ward.

Pediatrician online tool

Assess the knowledge and practice gaps among the pediatricians in delivering infant and young child nutrition related services at contact points like Labor room, Operation Theatre, PNC ward, Pediatrics and Well Baby or Immunization Clinics

The domains that were assessed in the **Quantitative Online data collection tools** were as follows:

- General information regarding type of HCEs (HCE), patient load, etc.,
- Knowledge regarding MIYCN,
- Status of services being provided at the private HCE,
- Status of services related to MIYCN being provided at the private HCE,
- Human resources dedicated to providing MIYCN services,
- Training status of the dedicated staff and availability of training resources,
- Hospital policies regarding MIYCN,
- Willingness to provide MIYCN services, and
- Challenges in providing MIYCN services.

Onsite facility sssessment tools:

The onsite facility assessment included three types of tools i.e., interview tools with health care providers (obstetricians and pediatricians) and facility observation checklist.

These tools were administered in four different types of facilities as described in the methodology section.

1. Semi-structured Interview with health care providers - Obstetricians

2. Semi-structured Interview with health care providers - Pediatricians

3. Facility Observation Checklist

Description of Domains in the onsite facility assessment data collection tools:

- Ggeneral information regarding type of HCE, Patient Load, etc.,
- Knowledge regarding maternal nutrition and Infant & Young Child Nutrition as relevant for two types of specialist provider status of services being provided at the Private HCE,
- Status of services related to MIYCN being provided at the Private HCE,
- Human resource dedicated to providing MIYCN services,
- Training status of the dedicated staff, availability of training sources, status of skills regarding MIYCN,
- Hospital policies regarding MIYCN,
- willingness to provide MIYCN services, and challenges in providing MIYCN services.

Facility observation check list

The facility was observed and recorded for the availability of resources required for providing MIYCN services, service provision records and registers, job-aids and communication materials for advice/counseling etc.

Ethical considerations

The study protocol and informed consent forms was approved in writing by FHI 360's PHSC and the appropriate local research ethics committee.

Local IRB approval was obtained by the PI, facilitated by IAPSM. A&T was responsible for the FHI 360 IRB approval and A&T along with IAPSM, ensured

adherence to all the ethics guidelines of the local and FHI 360 IRB (such as there were no violations such as collecting data without consent, collecting data not pertaining to this assignment for which approval has not been taken etc. are committed during the data procurement). PIs of the study team were trained for approved ethics training program.

The participants were informed of the confidentiality measures being implemented in the consent form and every effort was made to protect confidentiality. There were no immediate individual benefits or compensation for participation at the time of execution of this study in the form of any type of incentives. Interviewers were trained on the importance of voluntary choice and participation. The informed consent form included information about the project and research, risk, benefits, confidentiality, rights of a participant, and taking or leaving the study. The consent was recorded as a written document. Interviewers were trained on the importance of privacy and confidentiality and coached on how to assure potential participants of confidentiality. All researchers were bound by confidentiality agreements to fully respect the confidentiality of participants. Unique identification number was used. The data was stored and transported with ensuring strict confidentiality.

Implementation of the Survey

Staffing and team composition:

Core Research Team: The study was conducted by active participation of members from the professional body of IAPSM. The study team consisted of a national and a state team.

- The national team (PI, Co -PI) consisted of experts in the field of public health with experience in MIYCN.
- The survey team in each city included site investigator (senior faculty member from medical colleges in the selected cities) and 2 interviewers (Junior level faculties or senior post-graduate (PG) students from selected cities medical college). It was conducted in 15 cities spread across 5 states (total 3 city per state).

The Roles and responsibilities of the Project team under this study were defined as follows:

IAPSM National Level Team

- Responsible for providing technical support in implementation of the study.
- Development and finalization of study protocol and tools.
- Prepare and finalize package for local ethical approvals.
- Responsible for coordinating with site teams for all the project implementation activities.
- Data cleaning and coding in SPSS or STATA formats for statistical analysis Data analysis and report preparation.
- Presentation of key findings and preparation and submission of final report.
- Dissemination of findings.
- Completion of overall project and report.

IAPSM City Level Coordinators

- Responsible for coordinating all the project activities in respective sites.
- Assisting the national team in any other capacity to ensure timely completion and high-quality deliverables of the project.
- Timely and appropriate implementation of training of surveyors.
- Quality assurance of data collection.

<u>Surveyors</u>

Onsite facility assessment including providers survey and facility observation across 5 study states (3 cities in each state).

Training of the team

The training of all the senior and field investigators was conducted before actual collection of data. Initially all the core team members carefully deliberated on the study design, techniques and tools and guidelines to be used, sample coverage, data collection plan and mechanism to maintain quality of data. Team members from A&T were also present during the training and provided technical support in conducting the training sessions.

It was conducted in two parts -- <u>Part I</u>, IAPSM, in collaboration with A&T, conducted quality training of all the site coordinators on the methodology, data collection tools,
and analysis plan. <u>**Part II**</u>, the field investigators were trained by respective site investigator at the respective selected participating medical colleges.

Part I: One day training of all the site investigators was conducted in the presence of IAPSM members including PI and Co-PI, MIYCN core committee members, Alive & Thrive representatives and Investigators of all 15 sites from 5 states.

Sessions discussing the importance of MIYCN and understanding the MBFHS for delivering MIYCN services, study objectives, protocol, study design and sampling strategy was discussed in detail. Focus was given on the study methodology and outcome of the study.

The study tools which included onsite survey tool for obstetricians and pediatricians, facility assessment tool was discussed in detail and hands-on training was provided to the participants.

The training session concluded with emphasizing on maintaining the quality of data collection, ethical issues and importance of informed consent. Finalization of timeline was done in consensus with the site investigators.

Phase II:

The site investigators conducted one day training of the field investigators at their site. The site investigators selected the filed investigators, mostly postgraduate students of the department. The presentations for the training of the postgraduate students / field investigators were provided by the study core team. The training session included presentation of study protocol, detailed discussion on methodology of the study, explaining the onsite and facility assessment protocols, procedure to obtain informed consent, Ethical considerations. This was followed by hands-on training to fill the above three protocols to ensure quality data.

The participants actively participated in both the trainings. The response was very enthusiastic and all the participants felt a confident to collect quality data for the above study protocol.

DATA COLLECTION

Pre - testing of study tools

The pre -esting of the Study protocols was conducted at one of the selected sites of data collection One private facility from each of the 4 types was selected as per convenience for this purpose. These facilities were excluded while sampling the study site for main on-site assessment. Same set of approved draft study tools and consent forms were used

which are meant for the data collection. Prior approvals will be taken from facilities selected for pretesting. Pretesting enabled the study team to confirm, the flow of questions in terms of being appropriate and meaningful. National core team members were actively involved in pre-testing.

The challenges in administering the study tools were identified and corrective measures were taken to address the issues for smooth conduction data collection. Based on the pre-testing experience, the tools were finalized in coordination with A&T.

The pretesting data was analysed to understand the patterns to form the tables/ thematic areas. This data was not used in the final data set.

Study team ensured adherence to FHI360 and local IRB processes for pre-testing of tools and finalization of study tools.

Field operation:

Online Provider Survey:

The data collection was initiated immediately after the study tools were tested, finalised and approved by the technical experts in the national team and A&T team.

The link to the online provider survey tools along with a request email with introduction to the study was sent from the National secretariat of FOGSI and IAP to all the obstetricians and pediatricians through communication channels. The link included a consent form, instructions to fill the online form accurately, and the survey questionnaire. The online survey tool was displayed using online survey platform (Kobo toolbox). Validation checks were in-built into the application along with appropriate skip patterns to ensure that all required questions are answered before proceeding further. The duration to fill the online form was approximately 30 minutes. The online survey was made available for the duration i.e., of 45 days. The core study team from Alive & Thrive (A&T) and Indian Association of Preventive and Social Medicine (IAPSM) routinely monitored submissions of the forms, for completeness of the questionnaire and overall sample size achievements for different groups.

Help of professional bodies (i.e., IAP and FOGSI) was sought to remind the participants 4- 5 times to take part in the survey. These periodic reminders were sent to all the members (without targeting any specific individual) using the routine communication channels i.e., Email and WhatsApp messages from professional bodies secretariat to their respective members. Those who responded within the time frame and completed the entire survey were accepted for later analysis. The collected data was analysed using Excel, SPSS, STATA or any other statistical tool.

Onsite facility Assessment:

The Onsite facility assessment was undertaken simultaneously in the five states. In each state, data was collected from 3 cities. From each city, a list of private practicing obstetricians and pediatricians with their facility type was generated using various sources like local FOGSI and IAP active members, just dial etc for randomization and recruitment of the study participants. The study participants who fulfilled the eligibility criteria as mentioned above and consented to take part in the study were included. With the help of the local FOGSI and IAP contact person in the selected city, IAPSM study team visited the sampled facilities, introduce the study objectives to facility in charge, sought necessary initial permission for data collection and conducted the onsite facility assessment as per the methodology using tools as described above.

Within the selected facilities, the specialist provider (obstetrician or pediatrician) was contacted for the semi-structure interviews and facility observation.

As per the date of interview, the team on reaching the facility, approached the specialist provider with prior permission, introduced him/herself and explained the purpose of the study and what is required from the participant. The interviewer requested written consent from the participant. On obtaining the consent the onsite provider interview was conducted using semi-structured questionnaire (paper-based tools). Consent for the facility check list was also taken. In case of polyclinic or multispecialty hospital, permission for facility check list was obtained from the respective administrative authority.

Data entry, transmission, uploading and checks for onsite provider survey and facility observation was done: The survey data collected using paper- based tools was transmitted from site co Ordinator to national level core team using an online data entry platform i.e., kobo toolbox. Site team entered the data in the online platform with in next 1 to 2 days of interview. Uploaded data was checked by national team on a routine basis to ensure completion of survey forms and facility checklist and sample size achievement. Before entering data into the online platform, the site coordinators ensured quality assurance of paper-based data in terms of completeness and the correctness of the data collected. In each city two interviews were supervised by site coordinator

In reality, the response rate for an online survey was a challenge and through routine alerts from the member bodies the research study team tried to ensure the required sample size.

Despite of additional 45 days of extended period, sample size achieved was Obstetricians – 99 and pediatricians 360 and as per the protocol was accepted as final a

sample for online and onsite survey. This remains as a limitation for any statistical inferential analysis or rigorous estimation purposes.

Quality Control and Assurance

Table	2:	describes	the	role	of	IAPSM	and	A&T	to	ensure	overall	quality	of
collect	ed d	ata:											

Measures	IAPSM	A&T
Quality	IAPSM national team and	A&T ensured that IAPSM
Assurance	site coordinators ensured that	study team is adhering to all
	all the quality assurance	the quality assurance measures
	measures were placed for all	at every step of research
	the steps including training,	including sample selection,
	data collection, data	training, data collection,
	management, and analysis	follow-up with IAP & FOGSI,
	etc.	data management, and analysis
		etc.
		A&T also provided required
		technical support to IAPSM at
		each of the step explained
		above.
Development	IAPSM developed electronic	A&T provided required
of online	questionnaire in open data kit	technical support to develop
survey/form	or survey monkey form. This	online survey questionnaire and
having built-in	questionnaire had necessary	provide feedback to IAPSM
checks and	skip patterns and consistency	before it was used for final data
skips	checks built into the	collection.
	programme.	
Ensure	The data being submitted on	The data being submitted on
completeness	the kobo toolbox on a daily	the kobo toolbox server on a
and timely	basis was accessible to the	daily basis was accessible to
submission of	national team of IAPSM as	A&T Team.
survey forms	well as A&T Team.	
		The A&T team was given
	The IAPSM established	access to the ODK account so
	systems for generating field	that they could monitor the data
	check tables for key survey	collection process on real time
	parameters and indicators	basis.
	which were generated on a	
	routine basis to check for the	A&T provided necessary
	quality of data.	technical support to IAPSM in
	Any deviations from the	ensuring overall quality and
	expected values were	providing timely feedback to
	highlighted and	IAPSM national team.

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	communicated to the respective city Coordinators, who in turn verified the same.	
	In both kobo toolbox and survey monkey platforms it is	
	time taken by the respective participant to fill each	
	questionnaire.	
	A customized dashboard was created to show the progress of data collection in real time basis. The dashboard was updated on a mutually agreed frequency and was shared	A&T will be closely reviewing the dashboard and provide necessary feedback to IAPSM to ensure overall quality
	with the client on a regular basis. The dashboard had the following information for a quick review by the client -	
	• Number of survey forms completed and submitted to the server	
	as desired.Number of IDIs completed per state.	
Coding and Analysis	IAPSM national team consolidated collected quantitative data also allocated numeric codes to the responses, allotting variable names and value labels, etc. using statistical packages.	A&T reviewed the data and analysis provided by IAPSM
	Though some basic skip patterns and consistency checks were in-built into the programme, further checks were run on the datasets to check their veracity at the agency headquarters, before finally submitting it to the A&T team for further use.	

Impact of COVID 19 Pandemic on the study:

COVID 19 pandemic that affected the world had a profound effect on the study, as due to country wide lockdown and the private facilities being closed down in the initial period, led to delay in conducting onsite survey. in spite of the lockdown, with the objective of completing the study, permission to collect onsite survey data through telephonic interview was obtained from the ethical committee. In case of a few facilities, the onsite survey was conducted through telephonic interview.

Data Analysis:

The key indicators were categorized into knowledge, perception and Practices

The knowledge and practices indicators were assessed regarding Importance of maternal nutrition, deworming, IFA supplementation dosage and Duration, Optimum quantity of food and meal frequency as per trimester, Diet diversity, cord clamping, importance of colostrum, pre lacteal feeds, infant milk substitute act, early initiation of breastfeeding in normal as well as cesarean section, factors influencing the early initiation of breastfeeding.

The perception of Obstetricians was assessed based on the importance of MIYCN in MCH felt by them, their opinion on the applicability of MIYCN guidelines for private practitioners, opinion about the crucial role of doctors in providing MIYCN services

The challenges and willingness were assessed in providing MIIYCN services to the pregnant women in private HCEs.

Online provider survey:

Data was analyzed separately for two different types of specialists i.e., obstetricians and pediatricians. Non response issues were considered while calculating sample size. During the data collection process reminders to target groups through respective associations were sent, to ensure the complete sample size achievement.

Detailed analysis was based on those questionnaires having completed information for all the questions and also marked as completed before submission to the server. In case required sample, size based on completed forms is less than target sample size i.e., 381, we might consider including information from the partially completed questionnaire for the individual outcome indicator estimation.

Descriptive statistics were used to describe relevant MIYCN indicators in terms of knowledge, attitudes/perceptions, service provisions or practices and capacity gaps among the service providers.

Bivariate analysis was carried out to assess associations between critical respondent characteristics based on objective1 and 2 of the study (i.e., provider specialization, type of facility where they mostly work)

Chi-square tests was used to have significance levels of association between background variables and prevalent practices and services received. Where appropriate, multivariate logistic regression models were fitted to examine the association of factors with expected outcomes.

For Onsite facility assessment:

Data was analyzed separately for two different types of specialists i.e., obstetricians and pediatricians and also for four types of facilities as per study objectives 1, 2,3 & 4. Detailed analysis was based on all the questionnaire. Information from open ended questions in the onsite provider survey was coded and then analyzed.

Descriptive statistics was used to describe relevant MIYCN indicators in terms of knowledge, attitudes/perceptions, service provisions or practices and capacity gaps also challenges and probable solutions among the service providers. Bivariate analysis was carried out to assess associations between critical respondent characteristics based on objective1, 2, 3 & 4 of the study (i.e., provider specialization, & type of facility).

Defining the findings:

The findings of the study were defined based on the triangulation of both quantitative and qualitative data on various emerging themes aligned with the objective of the study; and in consultation with A&T Team.

The broad analysis plan comprised of: Frequency and cross tabulations on

- 1. Knowledge gaps among the providers related to various Maternal Nutrition and IYCF interventions.
- 2. Best practices and practice gaps in terms of providing Maternal Nutrition and IYCF services at various service delivery contact points ANC OPD, Labour Room, Operation Theatre, PNC ward, Immunization/Well baby clinic OPD, Pediatric sick baby OPD etc. by Obstetricians and Pediatricians
- 3. Systems and processes in place that would support MIYCN service delivery
- 4. Qualitative information on bottlenecks and challenges in delivering MIYCN services through private establishments.

Data Quality:

Appropriate quality assurance measures were applied throughout the study, to ensure quality data. The quality of online data collection process was ensured by incorporating relevant checks in the data collection toll. The online data was continuously monitored by the PI and A&T for completeness, and accuracy. The data collection process was monitored by the site investigators in case of onsite data collection. The monitoring team could not visit the sites due to COVID 19 pandemic and nationwide lockdown, but every attempt was made to ensure quality data.

Sample size achieved:

The study was conducted through two platforms online and onsite. The proposed sample size for the online part of the study was, 381 of obstetricians and pediatricians each with a total sample of 762 obstetricians and pediatrician from private HCEs. The sample was further categorized into type of facility. The onsite facility wise sample distribution was equal representation from all type of facilities such as single member clinic, polyclinic nursing home, multispecialty hospital. For the onsite part of the study in which in-depth interview and facility observation was conducted, the proposed sample size from all the 15 sites was 120, with facility type categorization, 8 from each of the above categorized facilities. Among the total 120 sample, 60 each should be from obstetricians and pediatricians.

Several attempts like sending frequent reminders to the Obstetricians and Pediatricians through the respective professional bodies (FOGSI &IAP), extending the date of online study by 45 days were made, COVID pandemic had an effect on the overall data collection of the study, especially the onsite part of the study.

The achieved sample size of the study is as follows:

Online (quantitative) study: In total 136 responses were received from obstetricians, in which 8% were single person clinic, 41 % were nursing home and, 51% were Multispecialty hospitals, with no representation from the polyclinic type of facility. In addition, 349 pediatricians responded to the study, in which 24 % were single person clinic, 3 % were polyclinic ,21 % Nursing home and ,52% were from Multispecialty Hospitals.

Onsite (qualitative) study from all 15 sites showed a slight proportional variation among the sites, in all In-depth interviews of 55 obstetricians and 59 pediatricians with facility observation was conducted. With equal representation from all four type of facilities.

Study Participants Profile:

Study profile of Online survey participants:

The survey was conducted at two levels: Online survey and Onsite survey. The profile of the study participants varies to fulfil the objective of the study. The participants for online provider survey were qualified specialists as obstetricians or pediatricians who gave consent and were providing services at private health care facilities. Since the study participants were approached through their respective professional body's communication channels, therefore, it was also required that they are members of IAP or FOGSI. The total number of obstetricians and pediatricians, who participated in the online survey was 136 and 349 respectively.

Obstetricians

Table 3: Profile of Participating Obstetricians

Profile of Participating Obstetric	N (%)	
Age distribution (ID7) Mean <u>+</u> SD (Range) (N=136)		45.9 <u>+</u> 12.9 (22-98)
Sex wise distribution (ID8) (N=147)	Male Female	33 (22.4) 114 (77.6)

Figure 3: Educational Qualification and professional experience of Obstetricians



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As per the completeness of the form the N for every variable varies. The Mean age of obstetricians (N= 136) was 45.9 yrs. (\pm 12.9 yrs.) with majority of the participant i.e.; 75 % in the age group of 31-60 years of age. Among the study obstetricians (N=147), majority 77.6% were female. The Highest qualification noted was Post Graduate Degree among 71.6% followed by 23.2 % Post MBBS Diploma. The mean of professional experience observed was 20.5 ± 11.0 (0-40), with majority obstetricians, 76.1% having 10 and more years of experience.



Figure 4: Graph depicting predominant workplace facility for Obstetricians (%)

Among the participating obstetricians (N= 112), 63.4% were predominantly working in a private HCEs, in addition to it 6.3% worked in private – not for profit HCEs. As the objective of the study was to observe the indicators as per the four types of facilities defined in the protocol. All the participants were categorized as per the four facility types. It was observed that for majority of the obstetricians the predominant place of work was multispecialty hospital (50.5%) and nursing home (41.4%) followed by single person clinic (8.1%), polyclinic type of facility was not represented so, only three categories were considered for further analysis.



Figure 5: Type of services provided by Obstetricians at place of work (%)

All facilities were providing Maternal and Child health services. The facilities were further detailed, the above figure shows the various services available at the facilities where the obstetricians currently work as per the responses provided by the obstetricians Among the various services, only 57.1% mentioned ANC in qualitative survey. services, almost all services presented an equal distribution with normal delivery services (56.5%), delivery with comprehensive obstetric care (53.4%), newborn care services (45.3%), child immunization services (41.6%). It is obvious to note that only 38.5% facilities provided nutrition related services. and 47.2% provide advice/counseling services.

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						•										

Profile of Participating Obstet	ricians	N (%)
Type of facility (Based on ownership) (N=112)	Private Private – Not for profit Govt. Others	71 (63.4) 7 (6.3) 31 (27.6) 3 (2.7)
	. 10	
Average patient load (No.	< 10	23(24.7)
(N 02)	10-25	17(18.3)
(N=93)	25-50	21 (22.6)
	50-100	15 (16.1)
	100-200	15 (16.1)
	>200	2 (2.2)

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The Average patient load of the facilities was 25-50 patients per day, with 65.6% facilities having patient load below 100 patients per day.

Pediatricians:

Table 5 : Profile of Participating Pediatricians

Profile of Participating Pediatricia	Profile of Participating Pediatricians				
Age distribution (ID7) Mean <u>+</u> SD (Range) (N=349)		47.3 <u>+</u> 12.9 (24-98)			
Age wise distribution (N=349)	24-30 yrs. 31-40 yrs. 41-50 yrs. 51-60 yrs. 61-70 yrs. > 70 yrs.	26 (7.4) 100 (28.7) 87 (24.9) 77 (22.1) 49 (14.0) 10 (2.9)			
Sex wise distribution (ID8) (N=386)	Male Female	259 (67.1) 127 (32.9)			

As per the completeness of the form the N for every variable varies. The Mean age of pediatricians (N= 349) was 47.3 yrs. (\pm 12.9 yrs.) with majority of the participants, 75.7 % in the age group of 31-60 yrs. of age. Among the study pediatricians (N=386), majority 67.1 % were male. The Highest qualification noted was Post Graduate Degree among 83 % followed by 11.3% having Post MBBS diploma. The mean of professional experience observed was $20.3\pm$ 14.4 (1-98), with majority pediatricians, 73.2 % having 10 and more years of experience.



Figure 6: Educational Qualification and Professional experience of Pediatricians. (%)

Among the participating pediatricians (N= 409), 70.2 % were predominantly working in a private HCEs, in addition to it 8.1 % worked in a private- not for profit HCEs. As the objective of the study was to observe the indicators as per the four types defined in the protocol. All the participants were categorized as per the four facility types. It was observed that for majority of the pediatricians the predominant place of work was multispecialty hospital 51.7%- and single-person clinic 23.6% followed by nursing home 21.4%, polyclinic being 3.3%.





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As 1/3rd of the facility is single clinic, they would predominantly be providing pediatric services, and only the Multispecialty and Nursing home would provide all the services. As reported by the participating pediatricians (N= 360), 92.5 % provided Child immunization services, 85.8 % provided Newborn care services and preventive & curative services for under 5 children, provision of nutrition related services was reported by 73.1% and advice/counseling services by 69.2%. Those attached to Multispecialty hospital and Nursing Home reported provision of ANC services in 40.8% facilities, Normal Delivery and basic emergency Obstetric care by 42.2% facilities, Comprehensive emergency Obstetric care by 39.2% and Surgical services including caesarean section was reported by 40.3% pediatricians.

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Profile of Participating Pediatricians	Profile of Participating Pediatricians N (%)						
Type of facility	Private	287 (70.2)					
(Based on ownership)	Private – Not for profit	33 (8.1)					
(N=409)	Govt.	78 (19.1)					
	Others	11 (2.6)					
Average patient load (No. of	< 10	41 (12.6)					
Patients per day)	10-25	72 (22.1)					
(N=326)	25-50	110 (33.7)					
	50-100	53 (16.3)					
	100-200	34 (10.4)					
	>200	16 (4.9)					

The Average patient load of the facilities was 25-50 patients per day, with 84.6% facilities having patient load below 100 patients per day.

Study profile of Onsite survey participants:

Obstetricians

The participants for the onsite survey included obstetricians from 15 sites selected from 5 states as per the methodology, only Bihar state representation was 14.29%, as the data collection process was affected due to the COVID pandemic. Of the onsite survey facilities, majority ,96.36% were private HCEs and 1.81 % were trust/mission based.

A total of 55 Obstetricians were interviewed for the study, all were members of FOGSI (Federation of Obstetrics and Gynecology Society of India). Among the 55 participants, 40% were postgraduate in Obstetrics & Gynecology, 34.5% had Diploma in the subject.

The facility profile of the obstetricians shows that, 13 were single clinic facilities with on call delivery services, 10 were polyclinic with on call delivery services, remaining 14 facilities were nursing home with regular delivery services and 18 were Multispecialty hospital.



Figure 9: Type of services provided by obstetricians at place of work - Indepth interview (%)

All the facilities (N=55) provided maternal and child health care services, such as 100% providing ANC services, 83.64% providing normal delivery and basic obstetric care services, 76.36 % comprehensive obstetric care services, 74.55 % newborn care services and 78.18% surgical services including caesarean section. Only 45.45 % of the 55 facilities where the obstetricians worked provided child immunization services, 32.73% provided preventive and curative care services for under 5 children. Nutrition related services were provided in 58.1% of the facilities and advice/counseling services were provided in 72.73% facilities.

As for the availability of professional manpower, obstetricians were said to be present in 100 % (N=55) facilities, pediatricians in 60.71% of the facilities. Among other staff Nurses were said to be present in 100 % facilities whereas dieticians were said to be present in only 35.71% of the facilities and Counselors in 33.92% of the facilities. In many instances, instead of dedicated counselors. nurses were fulfilling the role of counselors

Among 55 facilities, average patient load for normal delivery was 15 per month (median range of 0-150), for caesarean section the patient load was 12 (median range 0-100), the pediatric OPD had a patient load of 135 (median range 3-1500), and the pediatric IPD patient load was seen to be 30 (median range 0-900).

Pediatricians

The participants for the onsite survey included pediatricians from the 15 sites selected from 5 states as per the methodology. Of the onsite survey facilities (N = 59), majority ,96.61% were private HCEs and 3.38% were private- not for profit HCEs.

A total of 59 pediatricians were interviewed for the study, 88.14% were members of IAP (Indian Academy of Pediatrics). Among the 59 participants ,67.8% were postgraduates such as MD and 28.81% were DNB qualified.

The facility profile of the pediatricians, shows that 15 were single clinic facilities with on call delivery services, 15 were polyclinic with on call delivery services, remaining 15 facilities were nursing home with regular delivery services and 14 were Multispecialty hospital.



Figure 10: Type of services provided by pediatricians at place of work Indepth interview (%)

Almost half, of the pediatricians interviewed were from single clinic and polyclinic facilities with on call delivery services. The observation show that predominantly pediatric services were provided in these facilities except nursing home and multispecialty where all services would be available. 91.53 % reported of providing Child immunization and preventive & curative services for under 5 children followed by advice/counseling services provided by 83.3% and nutrition related services were provided by 76.27 % of the pediatricians in the respective facilities, 70.7% of the pediatricians also provided newborn care services. In addition to it, 42 - 45 % facilities, ANC care services, Basic emergency and comprehensive emergency obstetric care was provided along with surgical including cesarean section.

As for the availability of professional manpower, pediatricians were present in 100 % (N=59) facilities, and obstetricians in 61.01% of the facilities. Among other staff Nurses were present in 100 % facilities whereas dieticians were present in only 37.28% of the

facilities and Counselors in 38.98% of the facilities. In many facilities, instead of dedicated counselors. nurses were fulfilling the role of counselors.

Among the 59 facilities, average patient load for pediatric OPD was 350 patients per month (median range (13-4500), and the pediatric IPD average patient load was seen to be 17.5 patients (median range 0-500). Child immunization services had an average patient load of 35 (median range 0-515), for normal delivery it was 13.5 per month (median range of 0-150), for caesarean section the average patient load was 8 (median range 0-100), the

Obstetrician Study Findings

General perceptions regarding MIYCN related services

Obstetricians perceptions regarding MIYCN and related service:

Perceptions of the practicing obstetricians (N= 99) through nationwide online survey regarding MIYCN and related services were comprehended.

Almost all 97 (98 %) participants perceived the importance of MIYCN in Maternal & child health services and 87 (87.9%) agreed that MN & IYCN policy and guideline is applicable for Private Health care settings. Obstetricians have a critical role in improving the nutritional status of pregnant women and children was agreed by 94 (94.9%) of the participants and that it is doctors' responsibility to provide advice/counseling / education on nutritional aspects was perceived by 100 % Obstetricians.

The general perceptions of the Obstetricians regarding the importance of MIYCN and their role in providing advice/counseling and education to pregnant women/mothers on nutrition care was very encouraging. But the agreement of Obstetricians about applicability of MN& IYCN guidelines to private practitioners can be enhanced.

	Single person clinic (N=8)	Nursing home (N=41)	Multi- speciality hospital (N=50)	Total (N= 99) %
	%	%	%	
Perception about importance of MIYCN in MCH	7 (87.5)	41 (100)	49 (98.0)	97 (98.0)
Agreement with MN & IYCN policy and guideline is applicable for Private Health care settings	7 (87.5)	35 (85.4)	45 (90.0)	87 (87.9)
Agreement with critical role in improving the nutritional status of Pregnant women and children	8 (100)	40 (97.6)	46 (92.0)	94 (94.9)

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Agreement about	8 (100)	41	50	99 (100)
aspects is doctors' responsibility	(100)	(100)	(100)	(100)

Facility-wise there was not much variation in perception among all types of facilities, regarding importance of MIYCN in MCH services, applicability of MN&IYCN guidelines for private HCEs, and critical role and responsibility of doctor (obstetricians) in providing advice/counseling on nutritional aspects to improve the nutritional status of pregnant women and children. Only in case of single person clinic and Nursing home, the obstetrician's perception regarding importance of MIYCN in MCH services and applicability of MN&IYCN guidelines for Private HCEs was 87.5% and 85.4% respectively. Also 97.6% and 92 % obstetricians from Nursing homes and Multispecialty hospitals agreed about having a critical role in improving the nutritional status of pregnant women and newborn/young children and advice/counseling on nutrition being doctor's responsibility respectively.

The above findings were reflected in In-depth interviews of obstetricians from all four types of facilities. Importance of nutrition as part of Maternal and child health was perceived by obstetricians who responded that nutrition is required for maintaining good health of mother as well as the newborn and it sets foundation for the growth and development of the newborn. Adequate nutrition being very important for positive outcome of pregnancy.

More than half of the obstetricians were aware about MIYCN policy for health care providers , when probed it was observed that many of them knew about the anemia mukth bharat program and GOI – IFA and calcium supplementation guidelines .Though only 76.78% of the obstetricians agreed that MN& IYCN policy and guideline is applicable for private health care settings , the reasons sated were that as private sector caters to a large population , it is necessary for the guidelines but , they should be separately prepared for private sector as the government and private health care system is different .Also the guidelines will help the private practitioners to provide maternal and infant nutrition services to the mother and infant in an uniform manner . Also, Private practitioners provide services to all middle class to upper socioeconomic strata, and the nutritional issues of both the strata are different.

Nutrition is very important part of maintaining optimum health of the mother and the baby. – Obstetrician from a Nursing Home facility

Maternal nutrition should be given importance not only during ANC period but before the woman plans to conceive. An Anemic mother will give birth to a low-birth-weight baby – senior obstetrician from a Nursing Home facility

If mothers' nutritional requirements are not met, this can lead to various complication during ANC period as well as during labor and in PNC. So, to avoid many related complication mothers should have a well-balanced diet, which will have a positive effect on the growth and development of the newborn-Obstetrician from Multispecialty Hospital.

Majority of women attending this polyclinic are from lower or middle socioeconomic strata. They are malnourished and are ignorant about own health/nutritional status.so nutritional advice needs to be given to them. —Obstetrician from polyclinic

Awareness / knowledge of obstetricians regarding MIYCN:

The knowledge of obstetricians regarding basic concepts of MIYCN was assessed as per the following indicators:

Assessment of accurate knowledge of obstetricians regarding recommended gestational weight gain was found to be 11.1%. with a facility variation of 8% in Multispecialty and 25% in single person clinic.

Correct knowledge regarding the dosage of Iron Folic Acid tablets recommended by Ministry of Health and Family welfare (MOHFW) for pregnant and lactating women was known by 30% of the obstetricians (N=99), with single person clinic having better knowledge (34.1%) than the nursing home and multispecialty hospitals (26.0%). Knowledge of management of side effects like gastric discomfort was known to almost half of the surveyed obstetricians with 56.6 % knowing that IFA tablets not to be taken with Calcium tablets and 61.6% obstetricians knowing that IFA tablets should be preferably taken with Lemonade water. Obstetricians from nursing home consistently had less knowledge regarding IFA tablets to be taken with lemonade (56.1%) and IFA tablets and Calcium supplements (51.2%) not be taken together.

42.4% of the obstetricians had correct knowledge regarding duration of IFA tablet consumption during PNC.

Only 47.5% of the obstetrician had knowledge regarding the minimum number of food groups to be included in the daily diet of pregnant women, but surprisingly only 1% could give correct responses when assessed about the knowledge of frequency of food intake for pregnant women in 2nd trimester during pregnancy.

The accurate timing during the ANC period to start advising regarding breastfeeding was known to 52.5% of the obstetricians, with 87.5%. single person clinic, 53.7% Nursing home & 46% multi-specialty hospital obstetricians having correct knowledge regarding the same.

When assessed regarding timing of cord clamping i.e., delayed cord clamping after 1 to 2 mins of birth, 39.4 % of the obstetricians surveyed through online platform had correct knowledge, with obstetricians in Multispecialty 44.0% and 41.5 % of those in single person clinic having correct knowledge regarding timing of cord clamping.

		Single person clinic (N=8) %	Nursing home (N=41) %	Multi- speciality hospital (N=50) %	Total (N= 99) %
Correct knowledge about weight		(25.0)	5(12,2)	4	11 (11.1)
gam um mg pregnancy		(23.0)	(12.2)	(0.0)	(11.1)
Correct knowledge about dosage		3	14	13	30
of IFA tablet recommended under National guidelines for pregnant and lactating women		(37.5)	(34.1)	(26.0)	(30.0)
Correct Advise to take		5	23	33	61
knowledge about prevention of side	IFA along with lemonade water/drinks	(62.5)	(56.1)	(66.0)	(61.6)
effects like	Advise to not take	5	21	30	56
gastric	IFA and Calcium	(62.5)	(51.2)	(60.0)	(56.6)
discomfort by IFA	together				

Table 8: Knowledge of obstetricians regarding MIYCN:

Correct knowledge about	4	16	22	42
duration of IFA consumption during PNC	(50.0)	(39.0)	(44.0)	(42.4)
Correct knowledge about the	0	1	0	1
frequency of food intake for	0	(2.4)	0	(1.0)
pregnant women in 2nd		λ γ́		```
trimester during pregnancy				
Correct knowledge about	3	17	27	47
minimum food groups needs to	(37.5)	(41.5)	(54.0)	(47.5)
be included in the daily diet of				
pregnant women				
Correct knowledge to start	7	22	23	52
advising on breast feeding to	(87.5)	(53.7)	(46.0)	(52.5)
pregnant women				
Correct knowledge about cord	0	17	22	39
clamping after delivery		(41.5)	(44.0)	(39.4)

In In-depth interview it was observed that almost half of the obstetricians had corrected knowledge regarding adequate weight gain during pregnancy. The responses were varied and not very specific. There was observable variation in the responses provided regarding duration and dosage of iron and calcium supplementation.

IFA is advised 2 months from first visit and then assess clinically if required- obstetrician from nursing home.

IFA tablets advised every day from14 weeks - 40 days post-delivery- Obstetrician from Poly clinic.

Issues and side effects like poor compliance, belching, uneasiness, headache, gastritis and constipation are commonly found. Practitioner manages these issues/side effects by change of timings of taking supplements, to take milk with tablets. She also counsels by telling patient that these are supplements and not medicines and to go for effect and not side effects. —Senior obstetrician from nursing home.

Responses given by obstetricians regarding frequency of food intake for pregnant women in 2nd trimester was 3 times a day, with no specifications about the number of full meals and snacks. And only half of them could talk about the minimum food to be included in the daily diet of pregnant women.

Awareness of initiation of breastfeeding with in 1 hour:

Correct knowledge regarding the timing to initiate breastfeeding in case of normal delivery was seen in 76.8% and in case of Cesarean section was seen in 24.2 % of the obstetricians respectively. Comparable figures were observed in case of the above mentioned four types of facilities except single clinic obstetricians having remarkably low (12.5%) knowledge in case of timing to initiate breastfeeding for caesarean section. Though only 23.2 % of obstetricians did not had correct knowledge about timing of initiation of breastfeeding in case of normal delivery, but for cesarean section delivery knowledge among the obstetricians was exceptionally low.

Almost 2/3rd of the obstetricians (86.9%) had correct knowledge about need to give water to breastfeeding newborn in summers.

Mothers can breastfeed the baby in lying down position was agreed by 63.6% obstetricians and mothers complaining of "No Milk" being a Myth was agreed by 72.7% obstetricians, with only 37.5% single clinic obstetricians agreeing to it. Formula milk if indicated can be prescribed to the newborn only with written consent from the mother /family member was agreed by 60.6% of the obstetricians, with single clinic obstetricians agreeing to it to a larger extent (87.5%).

Correct knowledge about the frequency of breast feeding to a newborn baby was demonstrated by 60.6% of the obstetricians. 91.9% obstetricians exhibited correct knowledge about exclusive breastfeeding, whereas 60.6% of the obstetricians knew about the correct period for which breastfeeding can be continued. 98% of the obstetricians responded correctly to timing of initiation of complementary feeding.



Figure 11: Awareness of obstetricians regarding Breastfeeding (%)

In-depth interview observations showed that the trend of knowledge regarding various aspects of breastfeeding was similar to the quantitative online study. The responses received for the above indicators were of a wide range, and not in sync with the correct responses.

Newborn is initiated breastfeeding within 3 hours of delivery when mother's general condition becomes stable- Obstetrician from Nursing home

Breastfeeding is initiated as early as possible. Normal delivery within 2 hrs. CS within 6-7 hrs., formula feeding is started in such cases. —Obstetrician from Multispecialty hospital

In labor room itself breast feeding is initiated when episiotomy suturing is going on-Obstetrician from Multispecialty.

Skin to skin contact and breast crawl were tried few times but it requires lot of time & patience. - Obstetrician from nursing home

Yes, Skin to skin contact technique is followed for initiating breastfeeding immediately-obstetrician from Multispecialty.

Training in MIYCN:

MIYCN is a part of health education system and is taught during undergraduate as well as postgraduate course but is not prioritized in terms of nutritional counseling and hands-on training in the same. Formal training is the foundation for the implementation of any services. The training status of the Obstetricians regarding MIYCN and advice/counseling in MIYCN showed that only 48.5% of the Obstetricians had received formal training in MIYCN. Of the Obstetricians who received formal training in MIYCN, 20 % were trained during undergraduate course, 26.3 % were trained during Post graduate course, 26.3 % were trained during CMEs and 21.2 % gained knowledge through self- study This reflects that there is no distinct/ exclusive platform for providing and receiving training on MIYCN. Training regarding advice/counseling in health and nutrition, if not exclusively on MIYCN was received by 58.6 % of the Obstetricians





The above lack of training was reflected when 78.8% of the obstetricians, felt the need for refresher training. Need for refresher training was equally felt by all obstetricians irrespective of their workplace category.



Figure 13: Source of training for obstetricians as per the facility (%)

In-depth interview showed that only 17.86 % having received formal training in MIYCN. Further detailed assessment showed that only 32.9 % had some system in their facility for upgradation of knowledge of hospital staff.

With regards to training most of the respondents, mentioned that they got the information mostly from conferences and Continued Medical Education (CMEless than half of the obstetricians mention, having regular training or CMEs organized at the facilities for the staff and doctors. Some of the doctors conduct on job training of its staff on various topics.

There is an enormous felt need of training in MIYCN, which is indicated in the awareness of obstetricians regarding MIYCN.

Training was given by gynecologist to staff with help of AV aids but it was conducted 2 years back. On job training is given as and when required. - Obstetrician from Multispecialty hospital

No. there is no system/mechanism in our hospital to upgrade knowledge of hospital staff-Obstetrician from Nursing Home

As such training /orientation program are not being organized for hospital staff on various health topics however topics like antenatal care, post-natal care, breast feeding and nutrition are discussed in informal way during OPD and indoor patient round with nursing staff by obstetrician – Obstetrician from Nursing Home.

Obstetrician and Hospital Staffs have attended around 12 webinars organized by safe motherhood committee under banner of FOGSI. - Obstetrician from Nursing Home.

Practices related to MIYCN protocols:

The provision of MIYCN services by the obstetricians was assessed by understanding the practices of obstetricians regarding Maternal and Young Child nutrition.

A) Availability of service protocols:

Availability of MCH protocols in their facility was expressed by 88.9 % of obstetricians, among them 75% single person clinic and 92.7% of the Nursing Home said that they had MCH services protocols in their clinic. when enquired about the details of the protocols, majority of the obstetricians had protocols for advice/counseling on ANC services (92.9%), Maternal Nutrition (67.7%), Labor room (83.8%), early initiation of breastfeeding (80%), Immunization (78.8%), and breastfeeding and nutrition advice/counseling during immunization (77.8%).





On detailed enquiry through in-depth interview, only 35.19% mentioned that they had protocols for MIYCN in their facility. When enquired for protocols at various contact points such as ANC OPD, Labor room, Operation theatre, PNC ward, follow up OPD etc. it was seen that among them only 43.63% had labor room protocols, 49.09 % had Operation Theatre protocol, 45.45% had postnatal care protocol, and 52.72 % had ANC delivery protocol. Among more than half obstetricians it was observed that they were not aware of MIYCN protocols. The protocols used by the obstetricians were developed by themselves or FOGSI, some even responded that the protocols were given by pharmaceutical companies.

Majority of the obstetricians said that the protocols are applicable to doctors and nursing staff. only few acknowledged the nutritional or lactational counselors.

The main reason for not following the protocol was that they were not aware of any such protocols, also many of them responded that though they did not follow any protocols but they provided nutritional advice to the mothers. Another reason for not following protocol was noted to be non-availability of staff and lack of time.

Practices related to Breastfeeding:

Early Initiation of breastfeeding has been associated with protective effect towards many infectious diseases of childhood. Practices related to breastfeeding like initiation of breastfeeding on time, giving prelacteal feed, prescription of formula milk, continuation of breastfeeding have a long-term effect on the nutritional status and growth and development of the child.

Among the obstetricians participating in the online study, 85.9% responded that in case of normal delivery breastfeeding was initiated immediately after birth and 48.5 % responded that in cesarean section breastfeeding was initiated immediately after birth.

Facility wise variations was seen such as, 50% single person clinic obstetricians (also visiting consultants to other hospitals) gave correct response for initiation of breastfeeding in normal delivery whereas only 25% of them responded correctly in case of initiation of breastfeeding in caesarean section.

Support and advice/counseling for breastfeeding during the rounds was practiced by 84.8 % of the doctors and 78.8 % of the nurses consistently during all rounds. Single person clinic obstetricians practiced the support and provided advice/counseling during every visit less frequently (62.5%). This is a noteworthy finding and points towards addressing the challenge of training and sensitizing doctors and more important nurses in utilizing every opportunity to provide support and advice/counseling to mothers for breastfeeding the baby.

	Single person clinic (N=8) %	Nursing home (N=41) %	Multi- speciality hospital (N=50) %	Total (N= 99) %
Correct practices about initiation of BF after normal delivery	4 (50.0)	38 (92.7)	43 (86.0)	85 (85.9)
Correctpracticesaboutinitiation of BF after CS	2 (25.0)	22 (53.7)	24 (48.0)	48 (48.5)

Table 9: Practices of obstetricians regarding MIYCN:

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	a ,	0				
Frequency of	Support	X h				
advice/counseling	IOF BF	by				
Doctors on rounds						
			- (2 (() 7 ()		0.4 (0.4.0)
Always/Very often			5 (62.5)	36 (87.8)	43 (86.0)	84(84.8)
Often			3 (37.5)	5 (12.2)	6 (12.0)	14 (14.1)
Rare			0	0	0	0
Never			0	0	0	0
Frequency of	Support	&				
advice/counseling	for BF	by				
Nursing staff on rou	inds					
Always/Very often			5 (62.5)	37 (90.2)	36 (72.0)	78 (78.8)
Often			2 (25.0)	4 (9.8)	9 (18.0)	15 (15.2)
Rare			0 Ó	0	3 (6.0)	3 (3.0)
Never			0	0	1(2.0)	1(1.0)
			-	•	- ()	- ()

In-depth interviews of obstetricians revealed limited knowledge regarding initiation of breastfeeding in normal and cesarean section delivery. Varied responses indicate a significant lacuna in practice, regarding timing of initiation of breastfeeding. Practices such as Rooming/bedding in, after delivery was followed by most of the obstetricians. In practice, more than half of the obstetricians said breastfeeding support to mothers and family members is provided mostly by doctor followed by nurses at contact points such as ANC OPD, Labor room and PNC Ward. Very few obstetricians mentioned that Nutritional counselors or dietician were involved in providing MIYCN counseling to mothers at various contact points. Practices regarding prescription of formula feed to the infants when probed, revealed that formula feed was rarely prescribed and only when indicated in conditions such as mother being sick and in no condition to breastfeed, some of them also said that in case of cesarean section the family members insist on giving prelacteal feeds till the mother is well rested and can start breastfeeding, in case of lactational failure. *If there is failure of lactation after assessment by Gynecologist, formula feed is prescribed, also if baby's weight is less than 3.5 kg formula feed is given. - Obstetrician from Nursing Home*

Advise formula feed only when milk is not secreted or amount of breast milk is not sufficient to the baby—Obstetrician from polyclinic

Breastfeeding in cesarean section is usually delayed because in most of the cases patients are exhausted and mother-in-law or any elderly women in the family starts prelactal feeds-Obstetrician from Multispecialty hospital

Obstetrician, general duty medical officer, nursing staff and relatives are supporting mother in initiating breastfeeding-Obstetrician from Nursing home.

B) <u>Practices of Obstetricians</u> <u>regarding MIYCN counseling services to pregnant</u> <u>women</u>

 Table 10: Practice regarding Nutritional counseling services

	Single	Nursing home	Multi- speciality	Total (N- 99)
	clinic	nome	hospital	(1(=))) %
	(N=8)	(N=41)	(N=50)	
	%	%	%	
Nutritional advice/counseling a	6	36	41	83
part of delivery of Maternal	(75.0)	(87.8)	(82.0)	(83.8)
health services.				
Adevice/counseling of mother on	6	39	45	90
nutrition & BF is part of ANC	(75.0)	(95.1)	(90.0)	(90.9)
service provision at facility.				
If yes, frequency				
Always /Very often				
Often	5 (62.5)	32 (78.0)	32 (64.0)	69 (69.7)
Rare	1 (12.5)	7 (17.1)	13 (26.0)	21 (21.2)
Never	0	0	0	0
	0	0	0	0

Nutritional advice/counseling was practiced as part of delivery of Maternal and Infant Young Child Health services by 83.8 % of the obstetricians at their place of work. Among the surveyed single clinic obstetricians (N= 8), 75 % of the single clinic obstetricians provided the above service. Among all obstetricians (N= 99) 90.9 % of them provided advice/counseling to mothers on nutrition and breastfeeding as part of ANC services provided at the facility, and 69.7 % provided advice/counseling to mothers always/very often at every contact.

But almost 91.07% said that nutrition counseling was an integral part of services provided at the facilities. Majority of them responded that doctors (obstetricians) provide nutritional counseling to mothers at every visit, and a few said that nursing staff also provides the same. Very few obstetricians said that dedicated nutritionist was available, that too on a weekly basis or on call.

The obstetricians were asked for any best practices that they follow in their facility regarding MIYCN, it was observed that 1st trimester nutritional counseling, one on one counseling, providing diet chart in local language with nutritive value of each component, involving the husband and making him responsible, Dieticians prepare customized diet plans, support groups are formed to provide additional information.

Once in a month till 28 weeks, once in 15 days till 36 weeks and then once a week till delivery, Patient can come as and when required for fear or medical reason-obstetrician from nursing home.

Obstetricians call pregnant women for around 14 to 16 visits for antenatal checkup – obstetrician from multispecialty hospital.

Minimum 4 depends on case to case. —obstetrician from single person clinic

There should at least be 13-17 ANC visits during the entire ANC period. - obstetrician from nursing home.

In-depth interview revealed that, he no of visits recommended by the obstetricians for pregnant women was in the range of 8-10 visits during the antenatal period, with trimester variation. On an average 15-20 minutes was spent with each pregnant woman irrespective of the trimester. Nutrition advice/counseling is mostly provided by the obstetrician along with a medical officer or staff nurse, in the consultation room during routine visit. In few cases nutritional counselor is present who provides dietary advice. The dietary advice provided is majority of the times in the form of verbal advice, sometimes with the help of charts or leaflets.

Counseling services are provided with fees for pregnant women, Rs 150-250 is charged per counseling session.

Counseling is included in the ANC package and not charged separately.

WHEN PROBED ABOUT THE REASONS FOR NUTRITION AND BREASTFEEDING COUNSELING TO MOTHERS NOT BEING PART OF THE ANC SERVICES THAT ARE PROVIDED THE RESPONSES NOTED WERE:

- LACK OF TIME DUE TO MANY PATIENTS
- THERE IS UNAVAILIBITY OF DEDICATED TRAINED STAFF/ COUNSELOR
- LACK OF TRAINING MODULES
- THERE IS NO SUCH PROTOCOL OR GUIDELINES IN THE FACILITY




Among the various aspects of **advice/counseling on nutrition** to mothers 32.3% obstetricians gave advice on optimum nutrition – quantity of food and daily diet frequency, 24.2% on dietary diversity, 30.3% on adequate weight gain ,30.3% on micronutrient supplementation and their consumption, 15.2 % deworming during pregnancy,24.2 % Advice on rest and reduced workload, 62.6% of the obstetricians responded that they gave advice on all the above aspects of maternal nutrition.

Assessment of current food intake practice, frequency, quantity and quality of diet is done.

Maternal nutrition related aspects like to take frequent small quantity meal to avoid acidity, to take high caloric food, to take food that gives constant release of energy, include roughage, plenty of milk, soup, rab, rice water, green gram water, mix veg soup, less juices, boiled salads, boiled vegetable, mix pak, puranpoli etc. in diet

Advice regarding balanced diet including mainly protein, mineral supplements and micronutrient is given to pregnant women and their family member during education session

Obstetricians from multispecialty hospital and nursing home.

Among aspects of advice/counseling **on breastfeeding** to PNC mothers, 24.2% of the obstetrician's importance of colostrum, 22.2 % Advice on exclusive on demand breastfeeding, 25.3% Demonstration for proper attachment and positioning of breastfeeding, 21.2% advice on difficulties during breastfeeding, 12.1% Breastfeeding during illness, and 69.7% responded that they gave advice on all of the above.



Figure 16: Aspects of advice/counseling to PNC mothers (%)

Among the interviewed obstetricians, 85.45% said that they provided nutritional advice/counseling to pregnant women as a part of their PNC services. all obstetricians agreed that breastfeeding support and advice was provided by the obstetricians or the on-duty staff nurse during the PNC rounds. Most common topics that were addressed during nutritional counseling / advice were, importance of balance diet during pregnancy, food groups and variety of foods, addresses myths and misconceptions, regular weight monitoring, dietary hygiene, iron, folic acid and calcium rich food and supplementation.

Almost all the obstetricians said that discharge advice/counseling is provided by the obstetrician / on duty medical officer / staff nurse. nutritional advice, iron calcium supplementation and issues related to breastfeeding are addressed. But there is no written protocol for the same.

One to one counseling is done to ANC but it is not according to any protocol. Counseling mainly is provided if ANC mother is having problem such as less weight gain/Diabetes/ Hypertension. - obstetrician from Nursing home

Counseling is done on how to breastfeed baby, position, care of breast, counseling on if mother complains of breast engorgement and retracted nipple- Obstetrician from multispecialty hospital.

On enquiring about the services provided for Low-birth-weight babies, the obstetricians responded that low birth weight babies were looked after by the pediatricians. Based on pediatrician's assessment and advice the babies were placed in kangaroo mother care or referred to NICU /SNCU. Almost all obstetricians responded that they did not have any specific protocol for low-birth-weight babies. 60.71% obstetricians said that kangaroo mother care was provided, in their facility, to low birth weight stable newborn who are not sick,

C) Practice regarding education about preparation for breastfeeding:

	Single person clinic (N=8) %	Nursing home (N=41) %	Multi- speciality hospital (N=50) %	Total (N= 99) %
Frequency of education about				
preparation for breastfeeding to				
the pregnant women attending				
your OPD :				
Always/Very often	3 (37.5)	25 (60.9)	24 (48.0)	52 (52.5)
Often	3 (37.5)	12 (29.3)	17 (34.0)	32 (32.3)
Rare	1 (12.5)	3 (7.3)	9 (18.0)	13 (13.1)
Never	1 (12.5)	0	0	1 (1.0)
Frequency of assessment of the				
dietary or the feeding practices				
of the Pregnant women				
attending your OPD				
Always/Very often	3 (37.5)	29 (41.5)	27 (54.0)	59 (59.6)
Often	4 (50.0)	8 (19.5)	21 (42.0)	33 (33.3)
Rare	0	3 (7.3)	2 (4.0)	5 (5.1)

Table 11: Practice regarding educating and assessing the pregnant women:

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When enquired regarding the frequency of education to the pregnant woman attending OPD, about preparation for breastfeeding, 52.5% obstetrician responded that they always / very often practiced educating pregnant women about preparation for breastfeeding, whereas 32.4% obstetricians only practiced it Often and not always. Interesting observation was that there was a sizeable number (14.1%) of obstetricians who rarely or never practiced the above.

Also, only 59.6% of the obstetricians always/ very often assessed the dietary or feeding practices of pregnant women attending the OPD. This is a significant finding indicating a that hardly half of the obstetricians are educating the pregnant women about preparation for breastfeeding always (at every visit) and nearly half of the obstetricians assessing the dietary or feeding practices of pregnant women attending OPD.

D) <u>Practice of advice/counseling and involvement of husband in nutrition and breastfeeding</u>

	Single person clinic (N-8)	Nursing home	Multi- speciality hospital	Total (N= 99) %
	(1 1 -0) %	(1 1 - 1) %	(11-50) %	
Importance of advice/counseling to husbands regarding pregnant woman's nutrition &/or breastfeeding	8 (100)	41 (100)	45 (90.0)	94 (94.9)
Involvement of husband in discussion about pregnant woman's nutrition &/or breastfeeding Every time / Most of the time	6 (75.0) 1 (12.5)	33 (80.5) 5 (12.2)	33 (66.0) 16 (32.0)	72 (72.7) 22 (22.2)
Not every time Not at all	1 (12.5)	3 (7.3)	0	4 (4.0)

 Table 12: Practice regarding counseling of husbands in maternal nutrition and breastfeeding

Almost 94.9% of the obstetricians agreed that it was important to counsel husbands regarding pregnant woman's nutrition and breastfeeding. All Single person clinic and nursing home obstetricians agreed to the above. But when enquired regarding involvement of husband in discussion about pregnant woman's nutrition and breastfeeding, it was observed that 72.7 % of the obstetricians practiced this at all visits

or most of the time and 22.2% practiced it but not always. With respect to the above indicators, there was no significant variation among the four types of facilities.

E) <u>Practice of MIYCN service delivery:</u>



Figure 17: Staff engaged for education or counseling on MIYCN (%)

As per the obstetricians participating in the survey, only 53.5 % responded that the facilities in which they worked provided dedicated MIYCN nutrition advice/counseling services.

The study findings indicate that, among various health care providers, 47.5 % doctors, 38.4% nurses, 18.2 % dieticians and 14.1 % counselors were engaged in providing MIYCN advice/counseling services in the facility. There was no variation found among four types of facilities. The findings suggest that mainly the doctors and nurses provide MIYCN advice/counseling services and counselors and dietitians are involved in very few of the facilities.





While providing MIYCN advice/counseling services only 49.5 % of the health care providers use Audiovisual aides / job aides, indicating most of the advice/counseling is verbal in nature.





The need for dedicated nutritional or lactational counselor in their facility was felt by 90.9 % of the obstetricians, similar figures were observed in all type of facilities.

Knowledge and practices regarding IMS Act:

	Single person clinic (N=8) %	Nursing home (N=41) %	Multi- speciality hospital (N=50) %	Total (N= 99) %
Frequency to prescribe formula feed to new-born after delivery				
Always	0	2 (4.9)	1 (2.0)	3 (3.0)
Very often	0	1 (2.4)	0	1 (1.0)
Often	3 (37.5)	4 (9.8)	5 (10.0)	12 (12.1)
Rare/ Never	5 (62.5)	34 (83.0)	42 (84.0)	81(81.8)
Awareness about Infant Milk	5	25	30	60
Substitute Act	(62.5)	(61.0)	(60.0)	(60.6)

 Table 13: Knowledge and practices of obstetricians regarding IMS Act:

Formula milk was rarely/never prescribed by 81.8 % obstetricians, in case of single person clinic it was 62.5%. This reflects the awareness about Infant Milk Substitute Act, which was 60.6 % in all the obstetricians

In-depth interview observation reflected that 25.93 % of the obstetricians interviewed were aware of the Infant Milk Substitute act. Among those who were aware, majority of them responded that they did not have any Hospital policy on IMS act.

Availability of a record system and maintaining specific MIYCN records:

Qualitative assessment showed that all the facilities had a record keeping system, of which all of them kept manual records in the form of registers supplemented by a computer system for maintaining records. When further enquired about recording specific MIYCN indicators, it was observed that more than 50% facilities included MIYCN indicators in the patient record system. Majority of the facilities recorded maternal weight, Maternal Hemoglobin levels, IFA and Calcium supplementation, Newborn gender, birthweight only.



Willingness and Challenges to adopt MIYCN practices in the facility:

Majority of the obstetricians, 86.9 %, irrespective of their type of facility expressed their willingness to adopt MIYCN practices in their facility and 71.7 % admitted that it was feasible for them to adopt MIYCN practices in their facility. These findings indicate the felt need, willingness and feasibility of implementing MIYCN practices among private HCEs.

Figure 20 : Adopting MIYCN guidelines in the facility (%)

94.7% irrespective of their type of facility expressed their willing to adopt MIYCN practices in their facility

85.8 % admitted that it was feasible for them to adopt MIYCN practices in their facility. Participants mentioned that some of them and their staff are unaware of MIYCN guidelines and therefore needs training. Overcrowding or busy out-patients dept. limited skilled staff for MIYCN advice/counseling pose challenges for provision of MIYCN services at all service points. Participants also mentioned that mother or caregivers are reluctant to follow MIYCN, may be due to myths and misconceptions.

Almost all the obstetricians expressed a positive attitude when enquired about the conducive

environment in their facility for adopting MIYCN interventions. they agreed that there was required infrastructure and administration willingness, capable and enthusiastic staff if trained properly, also they were willing to adopt MIYCN interventions if they are trained in the standard protocols and guidelines for MIYCN. But the willingness is accompanied by various challenges.

Challenges in adopting MIYCN practices in their facility was reported by 22.2% of the obstetricians.:

Challenges faced by obstetricians in adopting MIYCN practices

Patients socioeconomic and educational status play an important role in ensuring the implementation of the counseling services.

The trend of women getting pregnant in their 30s, brings additional challenges of Hypertension and Diabetes. customized nutritional advice is necessary in such situations

It is observed that it is difficult to address cultural beliefs such as consuming jaggery, curd and foods considered to be hot in nature during pregnancy, giving colostrum to the newborn baby, exclusive breastfeeding practices, by giving nutritional counseling.

Nutritional counseling is a time- consuming activity and difficult to conduct due to patient load.

Availability of trained staff in nutritional counseling and high attrition rate among the paramedical staff is a challenge

Financial constraint of employing extra staff for services like nutritional counseling, which may or may not be utilized by pregnant women.

Lack of adequate and proper knowledge on MN and IYCF policies and guidelines are barriers for providing these services.

Challenges in addressing nutritional myths.

The Participating Obstetricians were encouraged to give recommendations to provide Infacilities in private HCEs.

Recommendations from Obstetricians to improve IYCN services in private HCEs.

- More prominence to social media like WhatsApp groups should be given to spread awareness among pregnant women and general population also.
- Customized dietary plan based on personal preferences and cultural habits should be provided for better compliance.
- Regular updating the knowledge of health care providers with regards to govt. policies related to MCH by IMA, NOGS/ FOGSI CMEs.
- Free supplements, including iron, calcium and proteins should be provided to private hospital or ASHA to be distributed to ANC and PNC
- There should be more emphasis on training the OBG, Pediatrician and nursing staff on MIYCN
- There should be strict guidelines and policies regarding prolateral feeds, the pediatrician and OBS should have a comprehensive policy.
- Sensitize elderly/in-laws to refrain from myths and taboos. Training in nutritional practices for the mother and family members. Focus on good quality of food.
- All centers should have a dedicated dietitian who does nutritional counseling, all staff from obstetricians to staff nurse needs to be trained in this, Correct and culturally acceptable dietary recommendation needs to be given.
- It should start from the very first visit. Childbirth training should happen for couple which will help them understand the process better. It explores their thought and alters their concepts.
- Videos can be displayed in the waiting areas. Regular training to doctors and staff
- Lack of coordination between and OBG and pediatrician is the main obstacle for providing IYCF services in many of the cases, the willingness of the doctor to learn must also be reciprocated by the local body of the respective specialty, only then the objective will be fulfilled
- IEC material like audios, videos, leaflets, banner should be provided by the gov. to make MIYCN practices more effective.

Pediatric Study Findings

General perceptions regarding maternal infant young child nutrition related services

Perceptions of pediatricians regarding MIYCN and related service:

Perceptions of the practicing pediatricians (N= 360) through nationwide online survey regarding MIYCN and related services were comprehended.

Almost 354 (98.3%) participants perceived the importance of MIYCN in Maternal & child health services and 323 (89.7%) agreed that MN & IYCN policy and guideline is applicable for Private Health care settings. Pediatricians have a critical role in improving the nutritional status of children was agreed by 339 (94.2%) of the participants and that it is Doctors responsibility to provide advice/counseling / education on nutritional aspects was perceived by 350 (97.2%) pediatricians.

The general perceptions of the pediatricians regarding the importance of MIYCN and their role in providing counseling and education to mothers on nutritional aspects of child care was encouraging. But the agreement of pediatricians about applicability of MN& IYCN guidelines to private practitioners can be increased.

	Single person clinic (N=85) %	Polyclinic (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186) %	Total (N=360) %
PerceptionaboutimportanceofMIYCNin MCH	82 (96.5)	12 (100.0)	75 (97.4)	185 (99.5)	354 (98.3)
Agreement with MN & IYCN policy and guideline is applicable for Private Health care settings	70 (82.4)	11 (91.7)	69 (89.6)	173 (93.0)	323 (89.7)

Table 14: Perce	eptions of pediatric	cians regarding MIY	CN and related services:

Agreement with critical role in improving the nutritional status of pregnant women and children	80 (94.1)	10 (83.3)	69 (89.6)	180 (96.8)	339 (94.2)
Agreementaboutcounseling/ educationon nutritional aspects isdoctors' responsibility	80	11	75	184	350
	(94.1)	(91.7)	(97.4)	(98.9)	(97.2)

Facility wise there was similarity in perception among all types of facilities , regarding importance of MIYCN in MCH services , applicability of MN&IYCN guidelines for private health care settings ,and critical role and responsibility of doctor (pediatricians) in providing advice/counseling on nutritional aspects to improve the nutritional status of children , only in case of single person clinic only 82.4% pediatricians agree that MN & IYCN is applicable for private settings as compared to average of 89.7% for total pediatricians. Also 83.3% and 91.7% pediatricians from Polyclinics agreed about having a critical role in improving the nutritional status of children and advice/counseling on nutritional aspects being doctor's responsibility respectively.

Similar findings were reflected, in In-depth interviews of the pediatricians from all four type of facilities, all the pediatricians perceived that Nutrition is an important /integral part of Maternal and Child Health. When probed further, they responded that nutrition of mothers is important as it will influence the growth and development of the child in the womb. The pediatricians felt that the Childs growth and development is influenced by nutrition in various phases like antenatalmaternal nutrition, postnatal – breastfeeding and complementary feeding.

MIYCN practices should be followed in private facility was felt almost all pediatricians as they provide services to a large population. When further probed for the reasons, the participants said that application of MIYCN guidelines to private sector will lead to uniform implementation of the services so as to improve the Maternal and child health indicators. During In-depth interview, it was also observed that more than half said that they were aware about MIYCN policy for health service providers, with respect to exclusive breastfeeding, complementary feeding but none of them mentioned anything related to maternal nutrition.

Awareness / knowledge of pediatricians regarding IYCN:

The knowledge of the pediatricians regarding basic concepts of IYCN was assessed as per the following indicators:

- 1) When assessed regarding timing of cord clamping i.e., delayed cord clamping after 1 to 2 mins of birth, 48.6 % of the pediatricians surveyed through online platform had correct knowledge, with pediatricians in Multispecialty 54.3% and 32.9 % of those in single person clinic having correct knowledge regarding timing of cord clamping.
- 2) Assessing awareness of initiation of breastfeeding with in 1 hour: Awareness about the timing to initiate breastfeeding in case of normal delivery and Cesarean section was seen in 70.8% and 19.4% of the pediatricians respectively. Comparable figures were observed in case of the above mentioned four types of facilities. The knowledge of pediatricians about timing of initiation of breastfeeding in case of normal delivery was low, but for cesarean section delivery it was exceptionally low

Only 29.4% of the pediatricians could enumerate all four factors affecting initiation of breastfeeding. Among all the factors Skin to Skin contact was known by 64.4 % of the pediatricians and 54.4% said that rooming/bedding -in influenced initiation of breastfeeding. Non - nutritive suckling is a positive influencer for initiation of breastfeeding was agreed by 26.1%, whereas providing Pre lacteal feed will be a negative influencer was said by 1.7% of the pediatricians. Awareness among pediatricians from private HCEs regarding factors influencing breastfeeding was found to be inadequate.

		Single person clinic (N=85) %	Polyclinic (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186) %	Total (N=360) %
Correct knowledge about Initiation of BF	After normal delivery After CS	61 (71.8) 16 (18.8)	9 (75.0) 4 (33.3)	53 (68.8) 14 (18.2)	132 (70.9) 36 (19.4)	255 (70.8) 70 (19.4)
Correct knowledge about Initiation of BF	All Rooming /bedding in	20 (23.5) 46 (54.1)	1 (8.3) 9 (75.0)	28 (36.4) 38 (49.4)	57 (30.6) 103 (55.4)	106 (29.4) 196 (54.4)

Table 15:	Knowledge	of pediatricians	regarding IYCN:
I able 15.	Isno wieuge	Ji peulati telulis	regarting rr or

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& factors affecting	Skin to skin contact	56 (65.9)	8 (66.7)	46 (59.7)	122 (65.6)	232 (64.4)
	Non- nutritive suckling	17 (20.0)	4 (33.3)	19 (24.7)	54 (29.0)	94 (26.1)
	Providing pre-lacteal feed	3 (3.5)	0	0	3 (3.5)	6 (1.7)

On facility wise differentiation, only 8.3% pediatricians working in Polyclinic knew about all the factors affecting Initiation of breastfeeding, but 75% of them knew about rooming in and 66% knew about skin-to-skin contact. Non- nutritive suckling and provision of pre lacteal feeds was known to very a smaller number of pediatricians across all facilities.

The scenario on In-depth interview showed that all the pediatricians had correct knowledge about the timing to initiate breastfeeding in case of Normal vaginal delivery but only 63.6% pediatricians had corrected knowledge about initiation of breastfeeding for Cesarean delivery, consistent trend is seen in case of different type of facilities.

Yes, of course, Maternal nutrition and Infant Nutrition are very important and should be an integral part of Maternal and Child Health services. The Government is having many programs addressing this important aspect. – Pediatrician from a polyclinic facility

As a pediatrician, am aware that doctors specially those involved in maternal and child health care such as Obstetricians and Pediatricians have a critical role in improving the nutritional status of the mother as well as child, irrespective whether we are from public or private sector. we are equally responsible – pediatrician with 17 years of experience from a Multispecialty hospital.

Traditional Practices, majorly dietary restrictions to breast feeding mother, not taking adequate calories, should all be corrected. Along with that nutrition of the mother is important for the good health of the child. Nutritional Counseling is very important. – pediatrician from nursing home.

Nutrition important for overall development of child including physical and mental development both and to build up immunity to prevent repeated community acquired infection – pediatrician from nursing home.

Indicators assessing awareness about breastfeeding:

A) Knowledge about pre-lacteal feeds:

Awareness of pediatricians regarding breastfeeding shows that 84.2% were aware that there was no need to give pre lacteal feeds to newborn babies, though awareness among polyclinic and multispecialty hospital pediatricians was more as compared to single person and Nursing home pediatricians. 90% of the pediatricians were aware about not giving water to a newborn infant as pre-lacteal feed and also, that there is no need to give water in exclusive breastfeeding. Similar figures were observed in case of facility wise observation of pediatricians, except pediatrician from single person clinic indicating less awareness. Table 16: knowledge regarding prelacteal feeds:

	Single person clinic (N=85) %	Polyclinic (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186) %	Total (N=360) %
Correct knowledge about	70	12	63	158	303
pre-lacteal feeds	(82.3)	(100.0)	(81.8)	(84.9)	(84.2)
Correct knowledge about	70	12	68	176	326
water	(82.3)	(100.0)	(88.3)	(94.6)	(90.6)

The reasons given by pediatricians for prescribing prelacteal feeds were, Low birth weight baby, mother having complications, HIC mother, in case of cesarean section when breastfeeding is delayed for 2-3 days, NICU admission, preterm baby. There is observable gap in the awareness of pediatricians regarding IMS Act, which reflects in the above responses.

I do not promote giving pre-lacteal feed to the newborn. but in special circumstances such as newborn in NICU, mother is having problems in secretion of milk, sick mother not in the same facility as the baby, in absence of milk bank etc., I advise pre lacteal feed ---- pediatrician from nursing home.

Sometimes it is difficult to motivate the mother to breastfeed the baby in the initial hours after deliver, at such times pre-lacteal feed is given. —pediatrician from nursing home.

B) Knowledge about factors influencing breastfeeding:

	Single person clinic (N=85) %	Polyclini c (N=12) %	Nursin g home (N=77) %	Multi- specialit y hospital (N=186) %	Total (N=360) %
Correct knowledge about KMC	56 (65.9)	8 (66.7)	55 (71.4)	157 (84.4)	276 (76.7)
Correct knowledge Mothers can breastfeed new- born in lying down positions.	55 (64.7)	9 (75.0)	42 (54.5)	136 (73.1)	242 (67.2)
Correct knowledge Incorrect attachment of baby to breast is the most common reason for lactation failure	79 (92.9)	11 (91.7)	74 (96.1)	182 (97.8)	346 (96.1)

Table 17: knowledge regarding factors influencing breastfeeding :

Knowledge about provision of Kangaroo Mother Care to newborn with birthweight below 2.5 kg was observed in 76.7% pediatricians, indicating a perceptible knowledge gap among pediatricians regarding Kangaroo Mother Care, with single clinic and Multispecialty pediatricians showing least (65.9%) and most (84.4%) awareness respectively.

Mothers can breastfeed new-born in lying down position was known only by 67.2% of the pediatricians, with nursing home and single person clinic pediatricians showing least awareness. Incorrect attachment of baby to breast is the most common reason for lactational failure was known by 96.1% pediatricians.

The above indicators when assessed through in-depth interview, showed only 33.9% of pediatricians being aware about provision of Kangaroo mother care and 91.53% pediatricians being aware about the most common reason of lactational failure being incorrect attachment of baby to breast. (Facility wise pediatricians showing similar trend)

The pediatricians were enquired further to understand their awareness regarding other factors responsible for lactational failure, beliefs like child should be breastfed through

both breasts during every feed was disagreed by 166 (46.1%) participants only, with single person clinic pediatricians having considerably less knowledge. The agreement was towards the mother breastfeeding the infant through one breast and after the breast is fully emptied, then offer another breast so that the baby gets foremilk and hind milk both. It was also observed that "Mother complaining of NO MILK" being a Myth was agreed by only 75% of the pediatricians, whereas formula milk should be prescribed to the newborn always with written consent from mother or family member was agreed by 68.9% pediatricians, indicating a distinct void in knowledge regarding prescription of Formula milk.

	Single person clinic (N=85) %	Polyclini c (N=12) %	Nursin g home (N=77) %	Multi- specialit y hospital (N=186) %	Total (N=360) %
Correct knowledge about Child should be breastfed through both breasts during every feed (breastfeeding through one breast till it fully empties and then offer other breast to the baby)	32 (37.6)	8 (66.7)	33 (42.9)	93 (50.0)	166 (46.1)
Correct knowledge Mother complaining of "No Milk" is a myth.	65 (76.5)	11 (91.7)	64 (83.1)	130 (69.9)	270 (75.0)
Correct knowledge When indicated Prescribing formula milk should always be done with written consent from mother or family member	53 (62.4)	7 (58.3)	61 (79.2)	127 (68.3)	248 (68.9)

Table 18: knowledge regarding breastfeeding :

C) Knowledge regarding Exclusive Breastfeeding:

Exclusive breast feeding to be continued for 6 months was known by 96.4% pediatricians with comparable facility wise figures excluding, single person clinic pediatrician who showed 91.8% knowledge regarding exclusive breastfeeding. Also 84.1% pediatricians agreed that breastfeeding should continue till 2 years of age, similar

figures reflect in facility wise distinction. There is a palpable knowledge gap observed regarding exclusive breastfeeding and continuation of breastfeeding till 2 years among pediatricians. In depth interviews presented parallel figures in case of pediatrician's knowledge of exclusive breastfeeding (94.91%) and continuation of breastfeeding (67. 24%).



Figure 21 : Knowledge about breastfeeding among pediatricians (%)

D) Knowledge regarding Complementary feeding:

Almost all the participating pediatricians, 98.1% exhibited correct knowledge of introduction of complementary feeding after completion of 6 months of age. With all facility wise pediatricians having similar knowledge. The complementary feeding to be introduced after completion of 6 months of age was told by 353 (98.1%) participants. But only 31.3% pediatricians were aware that minimum four different food groups need to be included in the daily diet of 8 months old child, polyclinics showing lesser figure (16.7%). Though majority of the pediatricians felt that complementary feeding should be introduced at 6 months, only 48.3% responded correctly when enquired about infant feeding practice for a normal 10-month-old child, with polyclinic pediatricians having considerably good level of knowledge (75%).

We advise the mother to feed the infant a balanced diet that is a right combination of Carbohydrates, proteins, fats and vitamins. We even have displays of balanced diet food pyramid in the OPD area.

The above figures reflect a observable difference in knowledge among the pediatricians regarding Maternal Infant and Young child nutrition with respect to aspects like initiation of breastfeeding, factors influencing breastfeeding, exclusive breastfeeding, continuation of breastfeeding and practical aspects of infant feeding practices like initiation of complementary feeding and minimum food groups to be included in the daily diet of an infant. There was no observable difference in the knowledge gap of pediatricians, when assessed according to the facility that they work in.

The mothers come with a lot of preformed thoughts about the feeding of the infants based on their cultural practices. Counseling for bringing about a behavioral change will require advising the mother at all visits. It will require considerable time and effort.

	Single person clinic (N=85) %	Polyclinic (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186) %	Total (N=36 0) %
Age to introduce complementary feeds – 6 months	81 (95.3)	11 (91.7)	77 (100.0)	184 (98.9)	353 (98.1)
Minimum Four different food groups need to be included in the daily diet of 8 months old child	22 (25.9)	2 (16.7)	23 (29.9)	65 (34.9)	112 (31.1)
Infant feeding practises	40 (47.1)	9 (75.0)	39 (50.6)	86 (46.2)	174 (48.3)

 Table 19: knowledge of pediatricians regarding complementary feeding :

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Training in MIYCN:

MIYCN is not an exclusive part of medical curriculum, but the students informally learn about MIYCN with other maternal and child health topics. Formal training is the foundation for the implementation of any services. The training status of the pediatricians regarding MIYCN and advice/counseling in MIYCN showed that only 47.8% of the pediatricians had received formal training in MIYCN. Of the pediatricians who received formal training in MIYCN, 13.6% were trained during undergraduate course, 32.2% were trained during Post graduate course, 30.3% were trained during CMEs and 24.4% gained knowledge through self- study This reflects that there is no distinct/ exclusive platform for providing and receiving training on MIYCN. Training regarding advice/counseling in health and nutrition, if not exclusively on MIYCN was received by 58.9% of the pediatricians .



Figure 22: Training status of the pediatricians as per the facility (%)

The above lack of training was reflected when 85.8% of the pediatricians felt the need for refresher training. Need for refresher training was equally felt by all pediatricians irrespective of their workplace category.



Figure 23: Source of training for pediatricians as per the facility (%)

**Self rating about knowledge of MIYCN reflected that less than half rated themselves 8 and above. Though only less than half of the pediatricians during Indepth interview acknowledged that they had received MIYCN training, single person clinic pediatricians only 20% and multispecialty pediatricians only 40% received MIYCN training.

Training status of pediatricians observed during in depth interview reflected a similar picture showing 41.8% having received training in MIYCN. Further detailed assessment showed that only 35.41% had some system in their facility for upgradation of knowledge of hospital staff.

With regards to training most of the respondents, mentioned that they got the information mostly from conferences and Continued Medical Education (CME). Very few has received formal (comprehensive training?) training about MYICN. Only 15.25% of the pediatrician mention, having regular training or CMEs organized at the facilities for the staff and doctors. Some of the doctors conduct on job training of its

staff on various topics. Few of the pediatricians mention that it is the responsibility of the doctors to update themselves.

There is an enormous felt need of training in MIYCN, which is indicated in the awareness of pediatricians regarding MIYCN

For getting updated with various topics we mostly attend CME (Continued Medical Education). I attended a CME, in which the topic of breastfeeding, exclusive breastfeeding was explained --- Pediatrician from a single person clinic.

In our hospital the management with the help of doctors organizes training sessions for nurses regarding breastfeeding but I feel that Infant feeding is a topic which takes a back seat with respect to training ---- pediatrician from a multispecialty hospital.

Practices related to MIYCN:

The provision of MIYCN services by the pediatricians was assessed by understanding the practices of pediatricians regarding Maternal and Young Child nutrition.

A) Availability of service protocols:

Availability of MCH protocols in their facility was expressed by 73.3% of pediatricians, among them 50.6% single person clinic and 91.7% of the polyclinic said that they had MCH services protocols in their clinic. when enquired about the details of the protocols, majority of the pediatricians had protocols for advice/counseling on Breastfeeding, child nutrition (80.6%) and Immunization (75%) to be conducted during the immunization session. But surprisingly only 66.7% and 67.7% Multispecialty hospitals had protocols for early initiation of breastfeeding in (OT &LR) and labor room services respectively. Very few Nursing homes and Polyclinics had protocols for maternal nutrition, labor room and ANC services.





In depth interview (N=59) findings suggested well-defined protocols in very few facilities, though they were available at various contact points like labor room, operation theatre, post-natal ward, pediatric OPD and immunization OPD. Surprisingly there was no mention of presence of protocols at ANC service contact point.

On probing, out of 59 pediatricians who responded, most mention of using protocols recommended by IAP and some mention of protocols recommended by Govt. Health department. On nutrition related protocols from among those who responded (23), most of them mention of having protocols on advice/counseling on exclusive breastfeeding and introduction of complementary feeding at six months but few mentions of having protocols on EIBF and protocols on Baby Friendly Hospital Initiative guidelines. None mention of having protocols on feeding during illness.

Also, all the pediatricians (N=59) mentioned that it was important for all staff such as counselor, nurse and pediatrician to adhere to these protocols. But 60% of them pointed out that they were not aware of all the protocols. the biggest challenge for the pediatricians for adhering to all protocols as per the verbatim was lack of time and busy IPD/OPD schedule.

I am not aware of any specific Government protocol for IYCN. we practice nutritional advice to mother when she visits for immunization or for the child illness. With time constraint it becomes difficult to advice every mother on every occasion. so only those mothers are advised who ask us regarding what to feed the child during illnesspediatrician with 30 yrs. of practice from a nursing home

No, I am not aware of any such protocols and there are no specific protocols in our hospital --- pediatrician from a polyclinic

B) Practices related to initiation of Breastfeeding and providing support to the mother:

Initiation of breastfeeding is an important event in the nutrition of infant and young child. Practices related to breastfeeding like initiation of breastfeeding on time, giving prolateral feed, prescription of formula milk, continuation of breastfeeding have a long-term effect on the nutritional status and growth and development of the child.

Among the pediatricians participating in the online study, 76.9% responded that in case of normal delivery breastfeeding was initiated immediately after birth and only 33.1% responded that in cesarean section breastfeeding was initiated within one hour of birth. There was no variation seen in facility wise practices regarding initiation of breastfeeding. **Formula milk** was rarely/never prescribed by 86.4% pediatricians.

Support and advice/counseling for breastfeeding during the rounds was practiced by 82.7% of the doctors and 67.8 % of the nurses consistently during all rounds. This is a noteworthy finding and points towards addressing the challenge of training and sensitizing doctors and more important Nurses in utilizing every opportunity to provide support and advice/counseling to mothers for breastfeeding the baby.

	Single	Polyclini	Nursing	Multi-	Total
	person	c	home	speciality	(N=360)
	clinic	(N=12)	(N=77)	hospital	%
	(N=85)	%	%	(N=186)	
	%			%	
Correct practices about	65	10	57	145	277
initiation of BF after	(76.5)	(83.3)	(74.0)	(78.0)	(76.9)
normal delivery					
Correct practices about	32	6	23	58	119
initiation of BF after CS	(37.6)	(50.0)	(29.9)	(31.2)	(33.1)
Frequency of Support &					
advice/counseling for BF					
by Doctors on rounds					
Always /Very often					
Often	57 (67.0)	11 (91.7)	66 (85.7)	164 (88.2)	298 (82.7)
Rare	9 (10.6)	0	6 (7.8)	17 (9.1)	32 (8.9)
Never	2 (2.4)	0	2 (2.6)	1 (0.5)	5 (1.4)
	0	0	0	1 (0.5)	1 (0.3)
Frequency of Support &					
advice/counseling for BF					
by Nursing staff on					
rounds					
Always/Very often	43(50.5)	9(75.0)	63(81.8)	129 (69.4)	244(67.8)
Often	22 (25.9)	1 (8.3)	9 (11.7)	36 (19.4)	68 (18.9)
Rare	6(7.1)	1 (8.3)	3 (3.9)	14 (7.5)	24 (6.7)
Never	0	0	0	2(1.1)	2 (0.6)

Table 20: Practices of pediatricians regarding Breastfeeding advice andcounseling:

In- depth interview (N=59) reflected more or less similar figures, with 59.26% initiating breastfeeding immediately in case of normal delivery and 48% initiating breastfeeding immediately in case of cesarean section. Practices like rooming in which have a positive impact on initiation of breastfeeding was practiced by 74.41% of the pediatricians. Rooming in was followed by only 57.14% pediatricians in predominantly polyclinics with on call delivery service provision and by 60% of the pediatricians in nursing homes having regular delivery service provision. Support and

advice/counseling provided to mothers during rounds depicts a different image from online survey findings, in this finding 45.94% doctors, 72.97% nurses provided breastfeeding support to mothers and family members.

On probing more than 2/3rd of (59) who responded, initiate breastfeeding immediately with in labor room following skin to skin contact and or in the recovery room and less than 1/3rd mention of initiating breast feeding after the mother is shifted to PNC ward; 3 of them mention of initiating after 2 hours of birth. Most mention of nurses supporting in initiating breastfeeding and few mentions of Obstetrician or a Pediatrician. Formula feed is not prescribed by pediatrician routinely and is only prescribe or provided in special conditions where newborn is sick, admitted in NICU and mother is not available, or mother is having breast related problems.

On detailed enquiry for services provided to low-birth-weight babies, it was seen that breastfeeding advice/counseling and support was provided to 83.67% LBW babies whereas 16.32 % were provided counseling and support for Kangaroo mother care., 32.65% were provided NICU & IPD services and 12.24% were provided other services like nutrition, referral etc.

We have a defined protocol in our hospital and our nurses are also trained. breastfeeding is immediately initiated in case of normal delivery, and in case of cesarean section, we wait for the mother to come out of anesthesia and feel a bit comfortable before initiating breastfeeding---- A very busy pediatrician from a nursing home.

I feel counseling a mother for preparation of breastfeeding is very important if we want to achieve 100% breastfeeding in newborn babies, and this should be initiated in the Antenatal Period ----- Pediatrician from a single person clinic.

C) Practices of IYCN advice/counseling to mother

	Single person clinic (N=85)	Polyclini c (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186)	Total (N=360) %
IYCN advice/counseling	63	11	70	150	294
to mother is part of	(74.1)	(91.7)	(90.0)	(80.6)	(81.7)
pediatric service					
provision at facility					
If yes,					
Always/Very often					
Often	52 (82.5)	7 (63.6)	59 (84.3)	105(70.0)	223 75.6)
Rare	10 (15.9)	2/(18.2)	9 (12.9)	39 (26)	60 (20.4)
Never	0	0	1(1.4)	5(33.3)	6 (2.0)
	0	0	0	0	0

 Table 21: Practices of pediatricians regarding IYCN counseling to mothers:

Nutritional advice/counseling was practiced as part of delivery of Infant and Child Health services 81.7% of pediatricians, to mothers as part of the pediatric services. Among the pediatricians (N=294) who provided IYCN advice/counseling to mothers, 75.6% provided IYCN advice/counseling to mothers always / very often at every contact. 70% of Polyclinics and 63.6% of Multispecialty hospitals provide IYCN advice/counseling to mothers always/ very often. This indicates that though there is provision of services at the facility, implementation is a significant challenge.

As per the verbatim in in-depth interview, most of the pediatricians felt that nutritional counseling is doctor's responsibility and it should be provided by doctor, only few responded that nurses can provide nutritional counseling. Almost more than half of them said that there was no dedicated.

The pediatricians were asked regarding any best practices followed in their health care establishment responded that, dietary guidelines are written in vernacular language for different age groups, mothers are demonstrated breastfeeding techniques using dummy and posters, display of IAP provided videos regarding breastfeeding in waiting area. When probed about the reasons for IYCN counseling to mothers, not being part of the pediatric services that are provided, the responses noted were:

THERE IS NO SUCH PROTOCOL OR GUIDELINES IN THE FACILITY

THERE IS UNAVAILIBITY OF DEDICATED TRAINED STAFF/ COUNSELOR

REQUIRED FACILITIES ARE NOT AVAILABLE

RELUNTANCE FROM ADMINISTRATION, DUE TO INADEQUATE AWARENESS REGARDING THE

Figure 25 : Aspects of breastfeeding advice/counseling to the mothers with children in age group of 0-2 year (%)



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Among the various aspects of **advice/counseling on breastfeeding** to mothers 93.6% was on breastfeeding and its benefits, 95.3% on exclusive breastfeeding till 6 months, 90% on correct attachment and positioning, 98.2% on breastfeeding during illness, 87.2% on no need to give water during summer if adequate on demand exclusive breastfeeding is practiced, 85.3% on difficulties during breastfeeding and 83.1% on continuation of breastfeeding till 2 yrs. of age.

Among aspects of advice/counseling **on Complementary feeding**, timely introduction was given by 96.7%, whereas dietary diversity and frequency and quantity of food was given by only 85 % pediatricians, advice to regularly monitor the growth and development of the child was provided by 88.3% of the pediatricians and 78.3% addressed the topic of nutrition/feeding during illness during the visits.

Figure 26: Aspects of Complementary feeding advice/counseling to the mothers with children in age group of 0 to 2 year (%)



The other aspects covered during advice/counseling were: dealing with food refusal, fussy eating, explaining responsive feeding importance of homemade food and avoiding formula feed / junk food, addressing social and cultural issues related to breastfeeding and also feeding difficulties in special child.

I do not give dedicated time for counseling on complementary feeding, but a general nutritional advice regarding feeding the infant is given at the time of visit. I do agree most of the time only mothers' queries regarding feeding practices are addressed. a proper mandatory protocol is not followed

D) Practice of advice/counseling regarding IYCN to mother / family member accompanying a sick child to OPD:

Advice/counseling / giving advice to mother / family member regarding IYCN, when accompanying a sick child was practiced by only 65.5% pediatricians always / very often. The crucial period of illness of a child, in which he/she is likely to experience feeding difficulties and also nutritional deprivation due to certain prevailing myths is lost as an opportunity to counsel the mother and family members and set the child right on the path to good nutrition and appropriate growth and development.

child in OPD.					
	Single person clinic (N=85) %	Polyclini c (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186 %)	Total (N=360) %
Frequency of IYCN talk to the mothers / family members accompanying the sick child in you OPD					

11(91.7)

1 (8.3)

0

0

53 (68.8)

17 (22.1)

2(2.6)

2 (2.6)

119 (64)

46 (24.7)

15 (8.1)

1(0.5)

53 (62.4)

17 (20.0)

8 (9.4)

2(2.4)

Always/Very often

Often

Rare

Never

Table 22: Frequency of IYCN talk to the mothers / family members accompanying a sick child in OPD.

236 (65.5)

81 (22.5)

25 (6.9)

5(1.4)

E) Practice regarding advice/counseling to husband and other family members regarding Breastfeeding and complementary feeding/ (IYCN)

	Single	Polyclini	Nursing	Multi-	Total
	person	c	home	speciality	(N=360)
	clinic	(N=12)		hospital	%
	(N=85)	%	(N=77)	(N=186)	
	%		%	%	
Importance of					
advice/counseling to	81	11	73	176	341
child's father regarding	(95.3)	(91.7)	(94.8)	(94.6)	(94.7)
breastfeeding &					
complementary feeding					
This is perception					
question.					
Involvement of fathers in					
discussion about child's					
breastfeeding and					
nutrition practices					
Every time/Most of the	70 (82.4)	11 (91.7)	63 (81.8)	128 (68.8)	272
time					(75.5)
Not every time	9 (10.6)	0	11 (14.3)	48 (25.8)	
Not at all	2 (2.4)	1 (8.3)	2 (2.6)	9 (4.8)	68 (18.9)
					14 (3.9)

Table 23: Practice of pediatrician regarding involvement of husbands during counselingfor MIYCN practices.

Involvement of Family members specially fathers in IYCN advice/counseling have been time and again proven to be an important factor in the implementation of an effective feeding practices and positive impact on the nutritional status of the infant and young child. The present study shows that though 94.7% of the pediatricians perceived the importance of providing advice/counseling on breastfeeding and complementary feeding to the father of the child and other family members, but only 75.5% of the pediatricians actually provided advice/counseling on breastfeeding and complementary feeding to fathers and other family members at all visits or most of the visits. There is distinct facility wise variation in this indicator, with single clinic and polyclinic pediatricians practicing the advice/counseling of fathers and family members for breastfeeding and nutrition practices better than nursing home and Multispecialty hospitals. There is a definite gap between perception and practice.

I have observed a very positive change that nowadays, fathers mostly accompany the mother for pediatric visits. And this opportunity can be utilized for counseling them regarding the child nutrition.

Counseling mothers/family members regarding IYCN when they bring in a sick child is very difficult. because at that moment even we are more concerned about the sickness. But at the time of discharge advise on what to feed the child is given. I do feel that this opportunity can be explored further to provide scientific, structured advice regarding nutrition of the child during the period of sickness and after recovery.

F) Assessment of nutritional status of Infant and Young Child:

Every visit to the health care provider if utilized to assess the feeding practices and growth and development of the child and followed with appropriate advice and advice/counseling to address the identified problems in the feeding practices will help to maintain adequate growth and development of the child.

Among the pediatricians, participated in the study, 77.5 % at every visit/most visit assessed the dietary or feeding practices of children less than 2 yrs. of age. The growth of child below 2 yrs. was monitored by 46.7 % using WHO growth chart, 64.4% used revised IAP growth chart and 6.1% used online growth charts. There is no uniformity in the monitoring tool which may lead to varied outcomes.

	Single person clinic (N=85) %	Polyclini c (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186) %	Total (N=360) %
Frequency to assess the dietary or the feeding practices of ≤ 2 yr. old attending facility					
Always/Very often Often Rare	63 (74.1) 14 (16.5) 4 (4.7)	12 (100.0) 0 0	61 (79.2) 15 (19.5) 0	143 (76.9) 37 (19.9) 3 (1.6)	279 (77.5) 66 (18.3) 7 (1.9)

Table 24: Practice of	pediatrician	regarding asse	ssment of child f	or MIYCN indicators:

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Standardtoolusedtomonitorthegrowthparametersof achild ≤ 2 yr. in a facility					
WHO growth chart Revised IAP growth	27 (31.8) 63 (74.1)	8 (66.7) 6 (50.0)	23 (29.9) 62 (80.5)	110 (59.1) 101 (54.3)	168 (46.7)
Chart	1 (1.2)	0	4 (5.2)	0	232
Self-designed growth	3 (3.5)	2 (16.7)	1 (1.3)	16 (8.6)	(64.4)
chart					5 (1.4)
Online growth					22 (6.1)
calculators					

G) MIYCN delivery practice in the facility:



Figure 27: Staff engaged for education or counseling on IYCN (%)

Mostly treating doctors and attending nurses provide counseling on IYCN. we do not have a dedicated service. Also, we do not have dieticians or counselors in our facility. if we provide this service separately, the parents would not be willing to pay separately for it. — pediatrician from nursing home.

We have dietician as well as a nutritional counselor whose role is to counsel the mothers for their nutrition needs as well as for the newborn babies' nutritional needs and educate them for breastfeeding and that is a separate section, in case there is any issue we refer the As per the pediatricians participating in the survey, only 34.7% responded that the facilities in which they worked provided dedicated IYCN nutrition advice/counseling services. With facility wise variation seen in terms of a greater number of Polyclinic and Nursing home having dedicated IYCN nutritional advice/counseling services.

The study findings indicate that, among various health care providers, 60.6% doctors, 43.8% nurses, 16.9 % dieticians and 9.7 % counselors were engaged in providing IYCN advice/counseling services in the facility. There was no variation found among four types of facilities except in single person clinic the number of dieticians and counselors engaged in providing IYCN advice/counseling services was less. Also, in nursing home only 18.2% dieticians and 10.4 % counselors and in multispecialty hospitals, only 20.4% dieticians and 10.2% counselors are engaged providing IYCN in advice/counseling services. The findings suggest that mainly the doctors and nurses provide IYCN advice/counseling services.





While providing IYCN advice/counseling services only 33.1% of the health care providers use Audiovisual aides / job aides, indicating most of the advice/counseling is verbal in nature.

IAP has provided soft copy/videos of IYCF practices which is continuously played on TV in waiting area. – pediatrician from single person clinic

Counselor does counsel of all the patients with the help of charts and leaflets- pediatrician from nursing home.

Figure 29: Requirement of dedicated Nutrition or Lactation counselor in a facility (%)



The need for dedicated nutritional or lactational counselor in their facility was felt by 87.2% of the pediatricians, ranging from 91.9% by multispecialty and 76.5% by single clinic facility.

Further Qualitative findings suggested that 18.64% came for follow up visits on the 3rd day, 23.73% on 7th day, 13.56% on the 14th day after discharge and 10.17% after 30th day of discharge. The range of services provided during the follow up visits are 76.27% advice/counseling for breastfeeding, feeding difficulties and complementary

Nutrition advice to mother regarding the feeding practice of the infant has always been a part of pediatric services provided to newborn as well as infants and children attending the pediatric clinics for various reasons ----- senior pediatrician from a nursing home.
feeding, 98.3% for immunization, 64.41% for growth and development monitoring, and almost all for screening for illness and treatment

Majority mentioned that nutritional advice/counseling was a key component of the PNC care package. Most common topics that were addressed during nutritional counseling / advice were, importance of balance diet during pregnancy, food groups and variety of foods, addresses myths and misconceptions, regular weight monitoring, dietary hygiene, iron, folic acid and calcium rich food and supplementation.

Knowledge and practices regarding IMS Act:

	Single person clinic (N=85) %	Polyclinic (N=12) %	Nursing home (N=77) %	Multi- speciality hospital (N=186) %	Total (N= 360) %
Frequency to prescribe formula feed to new-born after delivery					
Always Very often Often Rare /Never	0 0 5 (5.9) 76 (89.4)	0 0 2 (16.7) 10 (83.3)	1 (1.3) 1 (1.3) 9 (11.7) 64(83.1)	1 (0.5) 3 (1.6) 21 (11.3) 161(86.5)	2 (0.6) 4 (1.1) 37 (10.3) 311(86. 4)
Awareness about Infant Milk Substitute Act	69 (81.2)	8 (66.7)	65 (84.4)	172 (92.5)	314 (87.2)

Table 25: Knowledge and practice of pediatrician regarding IMS Act:

Formula milk was rarely/never prescribed by 86.4% Pediatricians, in case of polyclinic it was 66.7%. This reflects the awareness about Infant Milk Substitute Act, which was 87.2% in all pediatricians.

In-depth interview observation reflected that 76.36 % of the pediatricians interviewed were aware of the Infant Milk Substitute act. Among those who were aware, majority of them responded that they did not have any Hospital policy on IMS act.

Availability of a record system and maintaining specific MIYCN records:

Qualitative assessment showed that all the facilities had a record keeping system, of which all of them kept manual records in the form of registers, whereas 69.49 % facilities were supplemented by a computer system for maintaining records. When further enquired about recording specific MIYCN indicators, it was observed that 77.97 % facilities included MIYCN indicators in the patient record system.

Willingness and Challenges to adopt MIYCN practices in the facility:



Figure 30 : Adopting IYCN guidelines in the facility (%)

Majority of the pediatricians, 94.7%, irrespective of their type of facility expressed their willing to adopt MIYCN practices in their facility and 85.8 % admitted that it was feasible for them to adopt MIYCN practices in their facility. These findings indicate the felt need, willingness and feasibility of implementing MIYCN practices among private HCEs.

Participants mentioned that some of them and their staff are unaware of IYCN guidelines and therefore needs training. Overcrowding or busy out-patients dept. limited skilled staff for IYCN advice/counseling are pose challenges for provision of IYCN services at all service points. Participants also mentioned that mother or caregivers are reluctant to follow IYCN, may be due to myths and misconceptions.

Challenges in adopting MIYCN practices in their facility was reported by 30 % of the pediatricians.

Detailed probing revealed the following challenges faced by the pediatricians for adopting MIYCN practices in their facility:

CHALLENGES IN ADOPTING MIYCN PRACTICES BY PEDIATRCIANS IN THEIR FACILITY

- Administrative effort in providing required dedicated trained staff and space
- Mothers from affluent society reluctant to initiate breastfeeding immediately
- Lack of interest from doctors and nurses
- Challenge of addressing myths
- Patients not willing to pay separately for counseling services
- Time, space, staff constrain along with heavy patient load
- Difficulty in getting qualified professionals
- Difficult for single person clinic
- Literacy level has an effect on the overall understanding the importance of miycn.
- Lack of follow up and adherence by mothers
- Incase of sick child, the expectation of the family is to treat the child rather than listen to nutritional advice
- Support of obstetrician is needed in implementing breastfeeding practices as postnatal ward in under the control of obstetrician
- Regular sensitization and motivation of staff is needed
- Unaware of training programs for staff.

Challenges like myths of community, non-flexibility of community, deep routed sociocultural believes/taboos about nutrition are experienced by participant. Because of this patient's receptivity of nutritional advice decreases ------ Pediatrician from a multispecialty hospital

Latest guidelines come to us after 3-4 years. hence, it is difficult to keep ourselves updated. -----pediatrician from a Nursing Home

Large patient load, cannot dedicate time for the proper type of counseling required, as a clinician. -Pediatrician from a Nursing home.

Difficult to get nutritional counselor for private clinics. IYCF practices by nursing staff depends on their basic understanding and parent's co-operation. - Pediatrician from polyclinic.

The pediatricians were encouraged to give recommendations to provide IYCN facilities in private HCEs.

Recommendations from Pediatricians to improve IYCN services in private HCE.

- Recruitment of dedicated staff, increase salaries of existing staff, get ASHA onto private setting
- Every pediatrician should undergo compulsory training of IYCF at IAP level just like NALS, PALS during PG course, to conduct clinical meetings regularly to upgrade knowledge, to train nursing staff regularly, to develop IEC material for nutritional services,
- Participant recommended that it should be made mandatory for members of IAP to share knowledge of IYCF during formal meeting of IAP. IAP/ IMA / IAPSM should carry out routine training for staff on IYCF. IEC should be provided in local language to private practitioner on IYCF.
- Health education material can be printed and distributed to patients visiting hospital, AV aids can be used, App can made which can be recommended to patients and which will provide timely and adequate information related to IYCF.
- Antenatal stress on breastfeeding should be emphasized so mothers are prepared for it at least from last trimester. Family support for mother is crucial, educating them is also important like mother and mother-in-law.
- Good structured, planning of institutional and community based MIYCN needed. Information and communication centers at the national level and also undertaking IYCF in emergencies.
- IEC material like audios, videos, leaflets, banner should be provided by the gov. to make MIYCN practices more effective.

Facility assessment observation

The facilities were assessed for availability of resoruces and compliance to recommended practices related to MIYCN interventions in the routine delivery of services.

The observations were made based on various identified process indicators related to MIYCN interventions at different contact points like general waiting area, ANC/PNC OPD, PNC ward, Pediatric OPD and Immunization clinic.

In all 120 facilities were observed from 15 sites, for the identified process indicators. the observations are presented below in a graphical form.

Figure 31: Presenting facility details:



Among the total 120 facilities, all states were almost equally represented except Bihar (17.36%). As per the facility type representation, Multispecialty hospitals were 29.75%, single person clinic 28.1%, Nursing homes 22.31% and polyclinics were 19.01%.

The various services provided in these hospitals reflected that predominantly ANC OPD services (75.21%) were provided followed by PNC OPD (70.25%), Pediatric OPD 69.42%. In case of IPD services, Labor room facilities were provided by 62.81%, PNC ward 61.98%, NICU 38.84% and SNCU facilities were provided in 27.27%. Immunization services were provided in 62.81% and nutrition advice/counseling services were provided only in 41.32% of the facilities.

MIYCN related Infrastructure and display of IEC. Figure 32 : General Waiting Area:



In 96.69 % facilities, there was a demarcated waiting area and 94.21 % facilities had adequate seating arrangement for patients and attendants as per the patient load. Only 30.58 % of the facilities displayed Citizen Charter.

When assessed for display of IEC material for MIYCN, it showed that only 40%

facilities displayed IEC on Maternal nutrition, 42.15 % on Breastfeeding, 37.19 % on Complementary feeding, 24.79 % on WASH and 10.74 % on IMS Act.

Take away IEC material was kept in 44.63 % of the facilities, and only in 23.14 % of the facilities MIYCN information was displayed through audiovisual mode.



Figure 33: ANC/PNC -CLINIC OPD

Display of Technical protocols including maternal nutrition advice/counseling was done by 31.4% of the obstetrician. Functional weighing scale was present in 70.25% of the facilities whereas handwashing stations were available in 61.98% of the facilities.

Regarding display of IEC material in the ANC/PNC OPD, it was noted that information related to maternal nutrition was 34.71%, breastfeeding was 41.32%, complementary feeding was 31.4%, WASH 24.79% and IMS Act was 8.26%.

Take away IEC material was seen in 34.71%, also Mother and child cards were provided in 26.45% of the facilities. 64.46% of the facilities had adequate space for one-to-one advice/counseling, mostly the consulting room where the obstetrician is consulted. Whereas only 39.67% of the facilities had adequate space for group advice/counseling separate from examination room.

Figure 34 :PNC Ward



As per the observations of the PNC Ward, privacy of mothers was maintained in 53.72% of the facilities only. Also, mothers and infants were kept together in 55.37% of the facilities only. Display of IEC material regarding various themes was similar to the other areas.

Safe drinking water facility in the PNC ward was seen in 53.72% of the facilities, Availability of discharge / MCP Cards was observed in 52.89% of the facilities,

mention of nutritional advice on discharge cards was seen only in 43.8% of the facilities. Whereas take away material on MIYCN was seen in 24.79% of the facilities.



Figure 35 : Pediatric OPD

In case of pediatric OPD, adequate seating arrangement for staff and patients was seen in 64.46% of the facilities. Privacy of parents and children was maintained in 60.33% of the facilities and vailability of WHO growth charts were observed only in 53.72% facilities. Functional handwashing facility was seen in 61.98%. Display of IEC material was similar to other areas mentioned in the report.

Take away IEC material was present in 34.71% facilities only. Availability of adequate space for one-to-one advice/counseling was observed in 57.85% of the facilities. Whereas adequate space for group advice/counseling was available in 43.8% of the facilities.

Figure 36: Immunization Clinic:



Availability of protocol on advice/counseling on IYCN was seen only in 33.06% of the facilities other figures are similar to the above observed areas.

Discussion

This discussion focuses on the key indicators of MIYCN. An attempt is made to discuss the plausible reasons for the observed rates in these indicators based on both the quantitative and qualitative findings. Qualitative data from this survey was used wherever appropriate to triangulate, or provide in-depth information, to the quantitative findings. Discrepancies between quantitative and qualitative findings, if any, are highlighted. The findings of this study will provide information useful for improving MIYCN services in private HCEs.

MIYCN services provided in the facility:

The data about types of services provided by the participating health care providers was asked to get an overview of the range of services provided in four types of MCH facilities. The obstetricians responded that majority of the services provided in the facilities were ANC services (57.1%) followed by basic emergency obstetric care, and comprehensive emergency obstetric care. Newborn services, child immunization services and preventive services for under five children were predominantly provided by pediatricians in their facilities. Nutrition related services and advice/counseling facilities, in terms of nutrition related services and services varied in the advice/counseling being provided to a larger extent by pediatricians. As four types of facilities were studied, a distinct variation is seen in the provision of maternal and child services. The single person clinics and polyclinics providing predominantly OPD based services like ANC/PNC OPD, preventive and curative services for children. immunization clinic and a very few providing nutrition related services. Whereas Nursing home and Multispecialty hospitals providing an array of OPD, IPD, surgical and NICU/SNCU as well as immunization, nutrition related and advice/counseling services.

As responded by the obstetricians and pediatricians 88.9% facilities had some MCH protocols. There was variation, in availability of different protocols observed as per the type of facility.

Perceptions of health care providers regarding miycn advice/counseling:

Perceptions of health care providers regarding MIYCN practices have a definite effect on the practices of health care providers. The perceptions of obstetricians as well as pediatricians was almost similar regarding the few identified indicators of MIYCN. Almost all the health care providers perceived the importance of MIYCN in maternal and child health services and agreed that MN&IYCN policy and guideline is applicable for private health care settings. All the healthcare providers unanimously agreed that they played a critical role in improving the nutritional status of pregnant women and children. They also were in agreement that advice/counseling about nutritional aspects was doctor's responsibility. Around 60% of them concurred that when needed/indicated formula milk should be prescribed with written agreement from the mother or any family member. Almost all (94. 9%) perceived the importance of advice/counseling husband regarding maternal nutrition and breastfeeding. The perceptions of all the health care providers were positive towards MIYCN interventions and imply ease in adoption of these interventions.

Maternal nutrition:

Maternal nutrition is vital component of MIYCN as it not only effects maternal health but has an impact on fetal outcome as well. It is important for healthcare providers, especially obstetricians to have correct knowledge regarding the key indicators of maternal nutrition.

The knowledge of obstetricians regarding maternal nutrition was assessed, it was found that knowledge about indicators like weight gain during pregnancy (11%), dosage (30%) and duration (42.4%) of IFA tablet consumption, prevention of side effects of IFA consumption (61.6%), minimum food groups to be included in daily diet (47.5%) was less than expected. whereas almost none of them were aware of the frequency of food intake by a pregnant woman in second trimester.

It is alarming that obstetricians had extremely low knowledge regarding the exact weight gain during pregnancy. Also, the knowledge regarding dosage and duration of IFA supplementation was low. Diet Diversity concept was known by few.

The practices of obstetricians regarding maternal nutrition showed that, 83.8% obstetricians said that nutrition advice/counseling to mothers was part of the MCH

services provided by them in the facility. But only 59.6 % obstetricians assessed the dietary practices of pregnant women All aspects of maternal nutrition to ANC mother were given by 62.6% and to PNC mothers was given by 69.7%. Among the various aspects of maternal nutrition, individual topics like quantity and frequency of meals (32.3%), Dietary diversity (24.2%), adequate weight gain (30.3%), IFA and Calcium supplementation (30.3%), advise of rest and reduced workload (24.2%), deworming was 15.2%. Also, in case on PNC mothers Importance of colostrum was told by 24.2% only, exclusive on demand breastfeeding (22.2%), Demonstration for proper attachment and positioning of breastfeeding (25.3%), advice on difficulties in breastfeeding (21.2%) was given.

The reasons for not providing nutritional advice/counseling to pregnant women were given as, Lack of time, lack of paramedical staff, lack of training and availability of reference material.

The above practices and coverage of nutritional advice/counseling of pregnant women during ANC and PNC period is very inadequate and is a serious concern, in improving the nutritional status of mothers

72.7% of the obstetricians and 75.5% of pediatricians involved husbands /family members during advice/counseling on maternal nutrition and breastfeeding. It shows that though 94.9% perceive the importance of involving husbands, but in practice it is not followed.

Breastfeeding

Knowledge of the health care providers regarding **timing of cord clamping** was less than 50%. this is the first step in ensuring adequate blood and nutrient flow to the child. Delayed cord clamping will ensure that there will be boost to the neurodevelopment, reduction in anemia, increased stem cell stores and more importantly improved outcomes in premature infants.

Early initiation of breastfeeding is a critical to newborn survival and to establishing breastfeeding over the long term. When breastfeeding is delayed after birth, the consequences can be life-threatening – and the longer newborns are left waiting, the greater the risk. The health care providers knowledge about initiation of breastfeeding in

normal delivery was around 70 % but in case of caesarean section it was as low as 19%. This gap of knowledge is very decisive in the survival of newborn babies.

Only 29.4% of the pediatricians knew about all the factors affecting initiation of breastfeeding like skin-to-skin contact, rooming in, no prolateral feed, non- nutritive suckling. whereas more than 50% pediatricians at least knew of one factor affecting initiation of breastfeeding.

Surprisingly, the practice graph for this indicator shows an upward trend as compared to knowledge. The correct practice of initiation of breastfeeding in normal delivery for obstetricians is 85.9% and for pediatricians it is 76.9%. The correct practice of initiation of breastfeeding in case of cesarean section is 48.5% for obstetricians and 33.1% for pediatricians. This is a very significant finding in terms of achieving the initiation of breastfeeding of newborn within one hour of birth to at least 50%.

Support and advice/counseling for breastfeeding was provided by doctors in more than 84.8 % pregnant women and by nurses 78.8%.

Exclusive breastfeeding:

Promotion of exclusive breastfeeding and advice/counseling of mothers and family members to not give anything to the baby, not even water for first six months of life is very crucial, it is known to considerably decrease infant mortality on account of common childhood illnesses. Knowledge regarding exclusive breastfeeding was high among the health care providers.

More than 90% of pediatricians provided advice/counseling on breastfeeding and its benefits, correct attachment and positioning during breastfeeding, exclusive breastfeeding till 6 months, breastfeeding during illness, and difficulties during breastfeeding.

The reasons for not proving IYCF advice/counseling was cited as lack of time, lack of training, lack of trained staff, lack of guidelines and protocols, reluctance from administration.

Continuation of breastfeeding

The World Health Organization recommends that a child should be breastfed up to 2 years of age or beyond. Science has documented that some immune factors in breast milk that protect the baby against infection are present in greater amounts in the second

year of life than in the first. This is, of course as it should be, since children older than a year are generally exposed to more infections than young babies. Further, it has been observed that breast milk still contains special growth factors that help the immune system to mature and which help the brain, gut and other organs to develop and mature.

Obstetricians awareness regarding continuation of breastfeeding was less (60%) as compared to pediatricians (84%).

83.1% of pediatricians provided advice/counseling on continuation of breastfeeding till two years of age.

Prelacteal feed

Prelacteal feeding has negative impact on breastfeeding of the newborn. It results in lactation failure, diarrhea, convulsion and shortening of the duration of breastfeeding, insufficient weight gain, and becoming more susceptible to infection. Additionally, pre lacteal feeding is associated with various other sub-optimal breastfeeding practices such as not giving colostrum to the neonate and delayed initiation of breast feeding. Therefore, pre lacteal feeding is widely recognized as an important determinant of childhood malnutrition and, subsequently, childhood morbidity and mortality.

The awareness of the health care providers regarding not to give pre lacteal feed was high, but in in depth interviews it was seen that in case of cesarean section, breastfeeding is not initiated for a few hours till the mother is comfortable, and during this period pre lacteal feed is given. Also due to family members cultural practices of not giving colostrum, prelacteal feed is given. This area is a major deterrent and has huge impact on breastfeeding of the newborn.

Formula Milk

Almost 81.8% of obstetricians and 86.4 % of the pediatricians never/ rarely prescribed formula milk to the newborn babies. This is a positive finding and can have favorable impact on breastfeeding practices.

IMS Act was known by 60% of the obstetricians whereas only 48.3% of pediatricians were aware about it. The awareness is quite low and will tend to have an effect on injudicious prescription of formula milk to newborn babies.

Complementary feeding

Complementary feeding is transition from exclusive breastfeeding to eating family foods, alog with continued breastfeeding till two years of age. It is necessary to start complementary feeding after completion of 6 months. This is a critical period of growth

during which nutrient deficiencies and illness can occur and contribute to undernutrition among under five years of age.

All the health care providers (98%) were well aware regarding the timing of introduction of complementary feeding. Only 31.1% pediatricians were aware of minimum food groups to be included in the daily diet of a child. The knowledge about frequency of meals and dietary diversity was inadequate.

Infant feeding practices

Poor infant young child feeding practices contribute to vulnerability to various childhood illnesses and malnutrition. The child is caught in the vicious cycle of infection and malnutrition causing under-five morbidity and mortality. The effect of inadequate infant feeding practices impacts the growth and development of the child which effects the health in adult life also.

Diversified diet is important for the infants and young children since they need energy and nutrient-dense foods to grow and develop both physically and mentally and to live a healthy life. Low dietary diversity has been associated with stunting. It is recommended that infants and young children should consume foods from at least four different food groups in addition to breast milk

Appropriate feeding of children 6-23 months is multidimensional and hence a composite indicator combines standards of dietary diversity dietary diversity and feeding frequency by breastfeeding status.

Only 48.3% responded correctly when enquired about infant feeding practices. The awareness of pediatricians regarding infant feeding practices, food groups to be included, diet diversity and meal frequency is very low.

There is significant knowledge gap in health care providers regarding the practical advice to mothers for timing of initiation of breastfeeding in caesarean section, factors affecting initiation of breastfeeding, duration of continuation of breastfeeding, Infant Milk Substitute Act. With respect to providing nutritional advice/counseling the health care providers knowledge about infant feeding practices and diet diversity was inadequate.

In practice, assessment of dietary practices of ≤ 2 yr. old infant at all visits was done by 77.5% of the pediatricians. The standard WHO growth chart for assessing the growth and development of the child was used by 46.7% of the pediatricians whereas 64.4%

used the revised IAP growth chart and some of them used online or self-designed growth charts. Assessing the growth and development of the child at all visits is very crucial in identifying the early signs of malnutrition and to take immediate corrective actions.

IYCN advice/counseling to mothers was provided as part of pediatric services by 81.7% of the pediatricians and 65.5% provided IYCN advice/counseling to mothers or family members of a sick child. All aspects of IYCF advice/counseling were provided by 93.6% of pediatricians.

Training status of health care providers regarding miycn advice/counseling

The complexity of nutrition as a discipline and practice tends to be overlooked; doctors, nurses and community health workers need specific preparation or guidance to deliver the nutrition services that health facilities are expected to deliver. In Asia, a study in three countries showed that the nutrition knowledge of health professionals was outdated and that nutrition competencies were limited to curative activities (e.g., correcting nutritional deficiencies or treating severely malnourished children). The limited capacity of trainers was also noted.

In this study, less than 50% of the health care providers had received some form of training in MIYCN. mostly this training was in the form of CMEs, topic taught during PG course followed by self-study.

Need for refresher training was felt by more than 90% of the health care professionals. This shows the perceived level of knowledge of participating health care professionals and their willingness to improve their capacity regarding MIYCN and nutrition advice/counseling skills.

Staff involvement in providing nutritional advice/counseling to mothers:

The nutrition advice/counseling on maternal nutrition was mostly provided by doctors (47.5 %) and nurses (38.5%) whereas in very few facilities, 18.2% it was provided by dietitian and in 14.1% by counselors.

Nutritional advice/counseling on IYCF was mostly provided by doctors (60.6%), nurses (43.8%), dietitians (16.9%) and counselors (9.7%).

Though there should be dedicated specialized nutritional counselors for providing advice/counseling to mothers on maternal nutrition and IYCF practices, but in resource poor countries where there is lack of availability of Nutritional counselors, most of the advice/counseling is done by doctors and Nurses. In this scenario it becomes imperative that the capacity building of the health care providers such as doctors and nurses should be prioritized, if we want to achieve the MIYCN targets by 2030.

System preparedness for adopting MIYCN advice/counseling interventions.

To implement MIYCN interventions, the health care delivery system of the private health care providers should be adequate in terms of infrastructure, human resources, willingness and feasibility of implementation. System preparedness of the private health care facilities in terms of the above indicators was assessed.

There was variation among the obstetricians and pediatricians regarding availability of dedicated staff for providing nutrition advice/counseling to pregnant women in terms of 56.6% and 33.1% respectively.

Availability of health care staff (doctors and nurses) trained in nutritional aspects of MIYCN were almost around 60-65%.

The requirement of dedicated lactational counselor to provide nutritional advice/counseling services to pregnant women regarding maternal nutrition and IYCF practices was felt by almost 90% of the health care providers.

In terms of facility assessment conducted as part of qualitative component of the study it was observed that, there was variation in the availability of required infrastructure and logistics for provision of MIYCN services at different contact points such as ANC/PNC OPD, Pediatric OPD, immunization Clinic, PNC Ward etc.

The general observations were, almost 94.21% facilities had seating arrangement in the general waiting area, whereas around 60% of the facilities had seating area near the specific OPD. Display of IEC material was seen in the general waiting area as well as near the specific OPDs/IPDs. The IEC material was predominantly on Maternal nutrition (40.5%), breastfeeding (42.1%) and complementary feeding (37.19%) but IEC

material regarding water sanitation and hygiene and IMS Act was displayed in very few of the facilities.

Takeaway material was kept at all contact points in almost 40% of the facilities. Display of audiovisual material was seen in only 23% of the facilities. Display of technical protocols was not seen at all contact points. availability of adequate space for one-to-one advice/counseling was seen in almost 50-60% of the facilities. but adequate space for group advice/counseling was seen only in 35-40% of the facilities. Mention of nutritional advice was observed in 43.8% of the facilities. Availability of WHO growth cart was seen in 53.72% of the facilities.

Willingness to adopt MIYCN guidelines in private health care settings was expressed by 86.95 of obstetricians and 94.7% of pediatricians. Also, feasibility to adopt was stated by 71.7% obstetricians and 85.8% pediatricians.

Challenges to adopt MIYCN guidelines in private health care settings was stated by 22.2% obstetricians and 30% pediatricians.

The challenges that were conveyed were heavy patient load, lack of time, unavailability of trained staff, dedicated counselors, reluctance of administration to provide extra space and staff, difficult to clarify the myths regarding MIYCN, cooperation of patients.

Conclusion

Good nutrition is basic right of an individual. There are many factors that influence nutritional status of the population, especially vulnerable groups such as mother and child. India's nutritional indicators need consistent effort on all fronts be it public or private. Government programs and guidelines developed is predominantly implemented in the public sector, leaving the private sector a choice to adopt. As the role of private sector has been observed to be significant in the provision of health care services, also with regards to maternal and child health care, inclusion of private health care sector in implementing the nutritional programs targeted towards mother and child is the necessity of the hour

Hence this unique study provided valuable insight into the existing knowledge, perception and practices of health care providers of private HCEs regarding MIYCN. It also provided the system and process overview of the private HCEs regarding the feasibility of providing nutritional advice/counseling services to the pregnant women specific to MIYCN practices.

The study revealed that the perceptions of the health care providers were positive towards the importance of MIYCN and applicability of MIYCN guidelines in private HCEs. There was an observable knowledge gap regarding MIYCN among the health care providers both obstetricians and pediatricians. The practices related to maternal nutrition, breastfeeding, complementary feeding were not aligned to evidence based recommendations. The private health care systems showed lacunas, in terms of availability of adequate space, trained and dedicated staff to provide nutritional counseling, administrative hesitancy, unavailability of well- defined protocols at every contact point. Maintenance of records for specific to MIYCN indicators was not available. Regardless of the findings, the obstetricians and pediatricians, both groups were receptive towards adopting MIYCN guidelines in private HCEs.

Through this study opportunity to sensitize obstetricians and pediatricians in the country towards importance of maternal nutrition and infant and young child nutrition counseling was availed. Thus, setting stage to influence further action towards enhancing various aspects of MIYCN to bring about positive changes in the nutrition status of mother and child.

Recommendations

Recommendations:

Improving MIYCN knowledge and practices

The study has identified that the primary source of MIYCN training has been through the pre-service education during undergraduate and post graduate trainings. However, these teaching and learning platforms often do not cover MIYCN adequately and the curriculum are not updated with the current national and global recommendations. It is important that the UG curriculum and PG curriculum integrate MIYCN component not just in the theoretical but also in the practical learning exposures to the students who would be then better skilled in evidence based MIYCN practice as future practitioners in public or private setting.

Recommendation: Medical colleges should adopt/adapt a competency based MIYCN focused curriculum that includes both theory and practice. Such a curriculum was recently developed for the UP and Bihar medical colleges based on the recent recommendation of Medical Council of India i.e., National Medical Commission and is available for any medical college to adopt and integrate into their UG and PG programs.

The study has also identified that there are not much in-service knowledge or skill upgradation programs or the Continued Medical Education (CME) programs focusing on Nutrition (MIYCN) aspects for the private practitioners. Additionally, there is untapped potential to use technology and online platforms for organizing training, regular online webinars, and eLearning courses on MIYCN topics which can offer the practitioners to upgrade their knowledge at their pace with the comforts of their home or workplace setting.

Recommendation: Professional associations like FOGSI, IAP, IAPSM and other professional medical associations should consider nutrition as important subject and create regular CME program offering CME credit points to Nutrition training programs

and deliver it to the practitioners through their state and district chapters. Development partners can support and collaborate professional associations in this initiative.

Recommendation: MIYCN trainings/refresher training should be made as one of the essential trainings to be received by all the health care practitioners every 5 years and to be mandated by hospital managers and Professional Associations with endorsement of MOHFW.

Recommendation: Knowledge and skill building initiatives need to focus on evidencebased high impact MIYCN intervention components like assessment of Dietary/Feeding Practices , nutrition status assessment(including anthropometric assessment), and counseling on I) nutritional status assessment including anthropometric measurements during pregnancy and identification & management of nutrition at-risk pregnant women ii) maternal diet diversity, trimester wise frequency and quantity recommendations; iii) addressing compliance issues in terms of consumptions of IFA and Ca supplements ; iii) counseling on early & exclusive breastfeeding during ANC period iv) EIBF for both normal and c-section delivered newborns; v) Adherence to Infant Milk Substitute act; vi) appropriate and adequate skilled support & counseling for breastfeeding including addressing difficulties; vii) counseling on age appropriate complementary feeding focusing on diet diversity, frequency, quantity and consistency recommendations; and viii) assessment of child growth and early identification & appropriate management of growth faltering/MAM/SAM.

In the last two decades several new MIYCN guidelines were introduced or modified. These include National guidelines on Anemia Mukt Bharat, 2018, National guidelines on calcium supplementation during pregnancy, 2014, National guidelines on deworming during pregnancy, 2014, National guidelines on screening and management of gestational diabetes, 2018, Feeding norms for in-facility postnatal care, 2018, Enhancing optimal infant and young child feeding practices, 2013, National guidelines on Lactation Management Centers for Public health facilities 2017. Additionally, the IMS Act, 1992 was modified in 2003.

Recommendation: It is important that professional associations and hospital managers disseminate these guidelines to all the practitioners and also to include it in training programs.

Strengthening Health Systems/Facilities to deliver MIYCN services

It has been identified that apart from the individual practitioners the hospital or the health facility systems also contributes to what type and the quality of the services would be provided to the clients.

Recommendation: Private health facilities need to ensure that provision of MIYCN services is the policy or the standard clinical practice of the facility. This policy needs to be communicated in writing to all the facility staff on a regular basis.

Recommendation: Develop and/or institutionalize service delivery protocols for MIYCN most likely to be missed during interaction with clients at various service delivery contact points like I) ANC OPD; ii) Labor room/Operation theatre; iii) PNC ward; iv) PNC OPD; v) Well baby OPD/Immunization OPD; vi) Pediatrics OPD/Sick baby OPD etc. Private health facilities should assess their service delivery protocols to ensure that MIYCN interventions are adequately integrated into routine care.

Recommendation: All health facilities to have a system of their own to organize on job training programs for their staff including on MIYCN topics. And they need to promote the facility staff to be updated on nutrition practices.

Recommendation: It is important that private health facilities be strengthened as mother and baby friendly health facility to integrate delivery of quality MIYCN services. The professional associations FOSGI, IAP and IAPSM jointly need to develop an integrated technical and operational guideline on Mother and Baby Friendly Health Systems in collaboration with MOHFW, adapting from the revised BFHI guidelines (WHO 2018 for its member practitioners and their health facilities.

While standards for a baby friendly hospital are available, minimum requirements for certification/branding for both mother and baby friendly health system are needed along with continual monitoring for adherence to these requirements.

- A Social Franchisee model can be created with branding and certification from FOSGI & IAP with endorsement from MOHFW.

- MOHFW can consider accreditation of private facilities under MAA once they are Mother & Baby Friendly and providing all relevant MIYCN services.

MIYCN indicators being included in quality accreditation of private facilities, can be included in ISO-certification, NABH accreditation. This leads to a mother & bay friendly health system framework and its implementation across both private and public sector.

The current study has identified differences in the understanding and practices of practitioners as per their predominance of working in following type of facilities i.e., single doctor clinic, poly clinic, nursing and multispecialty hospitals. Additionally, one of the important reasons mentioned by private practitioners on not able to provide nutrition counseling even if they are willing or have capacity is lack of time.

The Mother and Baby friendly Health system guidelines to consider having customized recommendations as per the type of the facilities whose differences are due to the differences in the infrastructure, human resources availability and capacity of the practitioner.

Recommendation: Private health facilities should devise customized recommendations on task shifting to nurses, dieticians, lactation consultants, or other counselors or any staff as per the availability in the different type of facility to ensure that clients receive timely and quality nutrition counseling given that doctors' workload often challenges them from being able to provide individualized nutrition counseling.

Limitations of the study

The study was a mixed method study, having two components online survey and onsite survey (In -depth interviews and facility assessment). An attempt was made to obtain a comprehensive data through mixed method. The sample size was estimated including the non- response rate. The study response rate was low in obstetricians, even after frequent reminders and extending the survey period. The study was designed to capture data from four type of facilities (the facility in which the obstetrician /pediatrician works for longer period of time). The representation from all four type of facilities was not as planned in the study design. Predominance of multispecialty and nursing home facility was observed in obstetricians as well as pediatricians, which might influence the results in terms of provision of range of MYCN services, adequacy of resources, presence of dedicated staff for nutritional advice / counseling. The onsite In-depth interview and facility observation was affected by the COVID pandemic. The study findings cannot be generalized to all private sector obstetricians especially due to the purposive selection of study sites and exclusion of rural areas. The rural picture regarding MIYCN knowledge, services provided, availability of staff and challenges faced may be completely different from this study findings. To obtain a comprehensive perspective of MIYCN, and the maternal and infant indicators of rural areas, there is a need to plan and conduct similar study in rural setting.

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