KNOWLEDGE & PRACTICES OF LACTATING MOTHERS (0 – 6 MONTHS) OF URBAN VADODARA REGARDING BREASTFEEDING POSITION AND TECHNIQUES AND IMPACT OF SENSITIZATION ON IT

DEPARTMENT OF FOODS AND NUTRITION

FACULTY OF FAMILY AND COMMUNITY SCIENCES

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

VADODARA, GUJARAT, INDIA

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B.Sc. (F.C.Sc) Hons.

Foods and Nutrition

(Public Health Nutrition)

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KNOWLEDGE & PRACTICES OF LACTATING MOTHERS (0 – 6 MONTHS) OF URBAN VADODARA REGARDING BREASTFEEDING POSITION AND TECHNIQUES IMPACT OF SENSITIZATION ON IT

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIRED FOR THE DEGREE OF

MASTERS OF SCIENCE

(Faculty of Family and Community Sciences)

(PUBLIC HEALTH NUTRITION)

BY

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VADODARA – 390 002 – INDIA

CERTIFICATE

This is to certify that the research work presented in this thesis has been carried out independently by

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Under the guidance of Dr. Hemangini Gandhi in pursuit of a Master's degree in Science (Family and Community Sciences) with Major in Foods and Nutrition (Public Health Nutrition) and represents her original work.

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Guide

Date: 17/04/2023

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I am grateful to my dearest darlings of my life, my parents. Thank you so much for motivating me and supporting me. I have no words to express my feeling towards you. I am grateful to God who gave me such a wonderful parents in my life.

PALAK NILESH BHAGAT

ABBREVIATION

APL: Above Poverty Line

BPL: Below Poverty Line

ANC: Ante Natal Care

ANM: Auxiliary Nurse Midwife

AWC: Anganwadi Centre

AWW: Anganwadi Worker

AWH: Anganwadi Helper

UHC: Urban Health Centre

BF: Breast Feeding

EIBF: Early Initiation of Breast Feeding

EBF: Exclusive Breast Feeding

CF: Complementary Feeding

CNNS: Comprehensive National Nutrition Survey

NFHS: National Family Health Survey

PLW: Pregnant and Lactating Women

IFA: Iron Folic Acid

ICDS: Integrated Child Development Services

IYCN: Infant and Young Child Nutrition

LBW: Low Birth Weight

MO: Medical Officer

CDPO: Child Development Program Officer

SDG: Sustainable Development Goals

MDG: Millennium Development Goals

THR: Take Home Ration

TT: Tetanus Toxoid

USG: Ultrasound Sonography Test

UNICEF: United Nations International Children's Emergency Fund

WHO: World Health Organisation

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ABSTRACT

ABSTRACT

BACKGROUND

Breastfeeding is important for survival, growth and development, health and nutrition of infants and confers from physiological to psychological benefits to both child and mother(WHO). Exclusive Breastfeeding is crucial for attaining POSHAN ABHIYAN targets and SDG goal 3.

BROAD OBJECTIVE

To understand the knowledge and practices among lactating mothers on breastfeeding techniques and positions.

SPECIFIC OBJECTIVE

1. To assess socio demographic data of lactating mothers (0-6 months).
2. To assess knowledge and practices of lactating mothers (0 – 6 months) regarding selected Infant and Young Child Nutrition (IYCN) practices.
3. To collect information of lactating mothers (0 – 6 months) on utilization of selected ICDS services during Ante Natal Check-up & Post Natal Check-up.
4. To assess breastfeeding positions and techniques of enrolled mother.
5. To sensitize lactating mothers (0 – 6 months) on breastfeeding positions and techniques.
6. To study the impact of sensitisation on breastfeeding position and techniques in enrolled lactating mothers.

METHODOLOGY

Out of 34 UHC's in Urban Vadodara 1 UHC was purposively selected and lactating mothers (0-6 months) of all the anganwadi's under UHC were enrolled for the study. A community based interventional study was conducted. Anganwadi Workers were also interviewed for understanding their trainings in IYCN and knowledge about IYCN practices. 100 mothers who gave consent were enrolled and their knowledge and practice about IYCN were elicited through pre tested semi structured questionnaire. Observation for breastfeeding positioning, attachment and suckling was done through using IMNCI guideline. Anganwadi workers /ASHA worker accompanied to assess breastfeeding position and technique at the mother's place.

The breastfeeding process was observed for 5 min to assess the mother and infant's position, attachment to the breast and effective suckling. The mothers who lack the knowledge and were

following wrong practices were counselled after observation by trained ASHA/ANM using IMNCI guidelines and with the help of dummy models / pictures base. All the mothers who received interpersonal counselling were called into the UHC for reinforcement about correct Breastfeeding positions and techniques. Dummy models and a UNICEF booklet were used together with a trained ASHA who had received IMNCI training to provide counselling. Mothers who couldn't visit the UHC were counselled at their local Anganwadi Centre's using similar IEC materials after sensitization.

HIGHLIGHTS OF THE FINDING

The average percent response rate was 91.3%. Age range of lactating mothers was 18-35 years. 52% of mothers were primipara and 48% of mothers were Multipara.100% mothers had live births. 5% were Low Birth Weight (Mamta card report). All mothers reported about 8 ANC check-ups at UHC. 94% of women were counselled by IYCN practices by trained functionaries. 90.4% mothers were counselled for Breastfeeding position, Attachment and Suckling at the place of delivery by nurses and doctors. There were 53% of infants in the age range of 0 – 1 month, 34% of infants in the age range of 2 – 3 months, 13% of infants in the age range of 4 – 5 months. All AWW had training of induction, refresher and job and on IYCN practices.

Sensitisation workshops were conducted for were 70 mothers at UHC and for 30 mothers at their respective anganwadi's on community-based events. Trained functionaries AWW/ASHA facilitated sensitization workshop. Dummy models and IEC material which were used for the sensitisation are depicted below. Sensitization workshop duration was for 2 hours/session. Total 7 sessions were conducted.

Only 18% of mother's had good position, attachment and suckling practices. Significant improvement was found in Breastfeeding positioning, attachment and suckling in post sensitization workshop (from 18% to 40%).

CONCLUSION

It can be concluded that knowledge and practices of selected IYCN practices were found to be sub optimal. At baseline, only 18% mothers had practiced correct positioning and technique for breastfeeding. Proper counselling with IEC and dummy model facilitated the correct breastfeeding position and techniques.

INTRODUCTION

INTRODUCTION

Infant and child feeding practices

Human breast milk is a complete food for an infant up to 6 months. It is safe, clean and contains essential antibodies which help protect against many common childhood illnesses, it also contains all the nutrients needed for an infant's survival, physiological and cognitive growth and development.

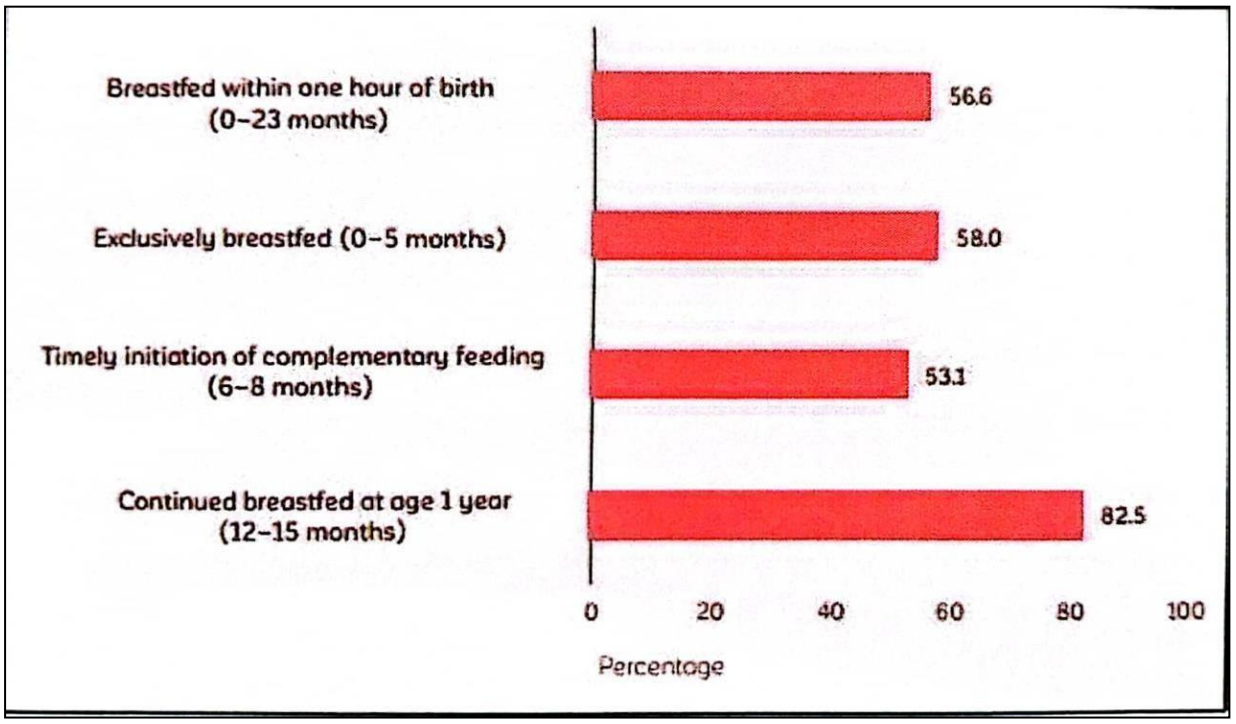
The recommendations for breastfeeding of children include Early Initiation of Breastfeeding within 1 hour of birth, Exclusive Breastfeeding for the first 6 months of life and continued breastfeeding through the second year of life. Suboptimal breastfeeding practices increases the risk of child mortality and morbidity. As per WHO records suboptimal breastfeeding results in more than 800,000 child deaths annually. Undernutrition is responsible for 45% child deaths globally.

Breastfeeding is one of the most effective ways to ensure child health and survival. However, nearly 2 out of 3 infants are not exclusively breastfed for the recommended 6 months – a rate that has not improved in 2 decades.

Of the135 million babies born every year, only 42% are breastfed within the first hour of life, only 38% of mothers practice exclusive breastfeeding during the first six months, and 58% of mothers continue breastfeeding up to the age of two years and beyond.

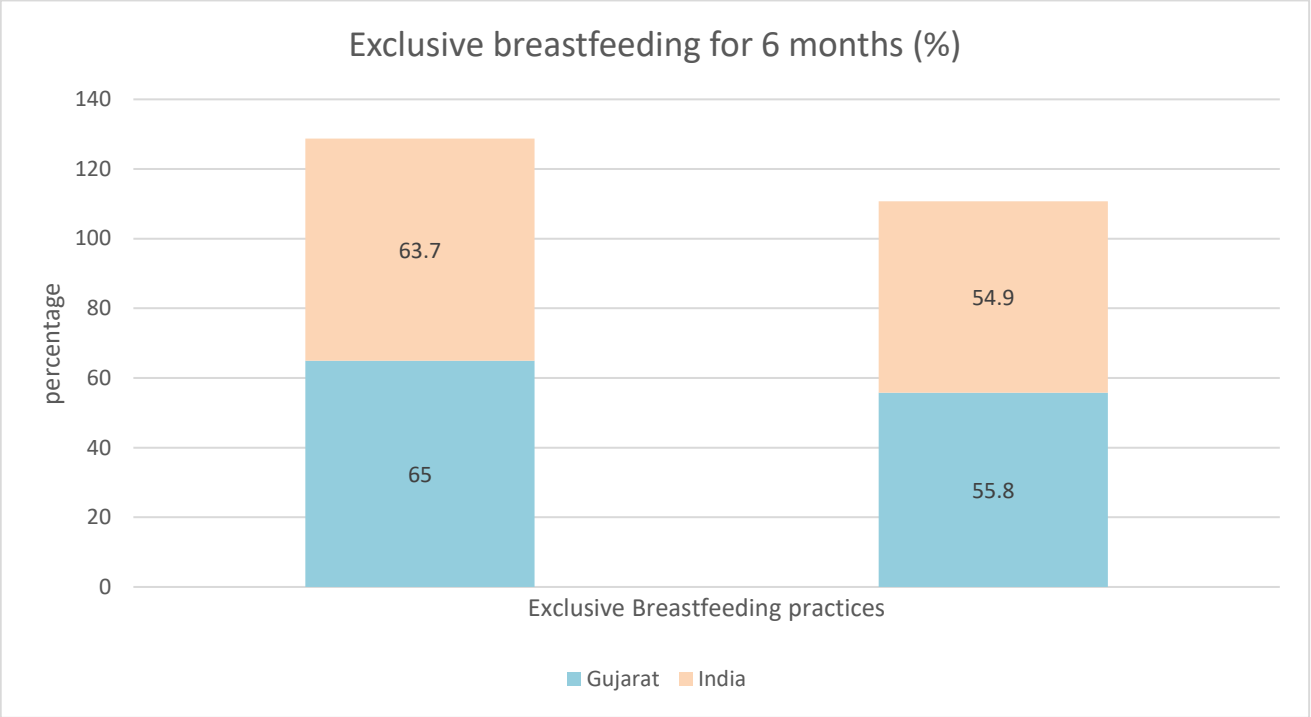
From the CNNS (2016-2018). It can be said that only 56.6% of women-initiated breast milk within one hour of birth. Exclusive breastfeeding was done by only 58% of women.

Fig 1.1 Infant feeding practices, Comprehensive National Nutrition Survey (2016 – 2018) reported the IYCF practices which is presented in figure 1.1



From the NFHS Gujarat data it can be said that Exclusive Breastfeeding is not satisfactory.

Fig 1.2 Exclusive Breastfeeding for 6 months (Comparison of breastfeeding statistics as per NFHS)



BREASTFEEDING POSITIONS:

Effective positioning and technique for latching on are necessary to prevent nipple soreness and allow the baby to obtain enough milk.

Babies can successfully latch on to the breast from multiple positions. Each baby may prefer a particular position. The "football" hold places the baby's legs next to the mother's side with the baby facing the mother. Using the "cradle" or "cross- body" hold, the mother supports the baby's head in the crook of her arm. The "cross-over" hold is similar to the cradle hold, except that the mother supports the baby's head with the opposite hand. The mother may choose a reclining position on her back or side with the baby lying next to her.

No matter the position the parent-infant dyad finds most comfortable, there are a few components of every position which will help facilitate a successful latch. One key component is maternal comfort. The mother should be comfortable while breastfeeding, and should have her back, feet, and arms supported with pillows, as necessary. Additionally, when starting the latch process, the infant should be aligned with their abdomen facing their mother, which can be remembered as "tummy-to-mummy," and with their hips, shoulders and head aligned. This alignment helps to facilitate proper, efficient swallowing mechanics.

Standing mother breastfeeding her baby, Canjambari,

- Breastfeeding – Cradle hold

- Breastfeeding – Cross cradle position

- Breastfeeding – Football hold

- Breastfeeding – Semi-reclining position

Breastfeeding – Side-lying position

- Breastfeeding – Supine position

- Breastfeeding – Twins, cross cradle position I

- Breastfeeding – Twins, football or clutch hold

- Breastfeeding – Twins, parallel position II

LATCHING:

Latching refers to how the baby fastens onto the breast while feeding.

Making use of anatomy and reflexes:

Sebaceous glands called Glands of Montgomery located in the areola secrete an oily fluid that lubricate and protect the nipple during latching. The visible portions of the glands can be seen on the skin's surface as small round bumps.

The rooting reflex is the baby's natural tendency to turn towards the breast with the mouth open wide.[83] When preparing to latch, mothers should make use of this reflex by gently stroking the baby's philtrum, the area between the upper lip and the nose, with their nipple to induce the baby to open their mouth with a wide gape.

One way to help the infant achieve a deep latch is to compress the breast tissue into a "U" or "hamburger shape," so that the infant can fit the breast tissue into their mouth. This is done by the mother placing her thumb and fingers in line with the infant's nose and mouth respectively and using this grip to compress the breast tissue

Bringing the infant in to latch:

If the new-born seems to need help in latching on, the mother should focus on helping the by infant bringing their chin to the breast first. This facilitates a deep, asymmetric latch, and also helps the infant extend their neck and tilt their forehead back to maintain this deep latch and ease the swallowing process.

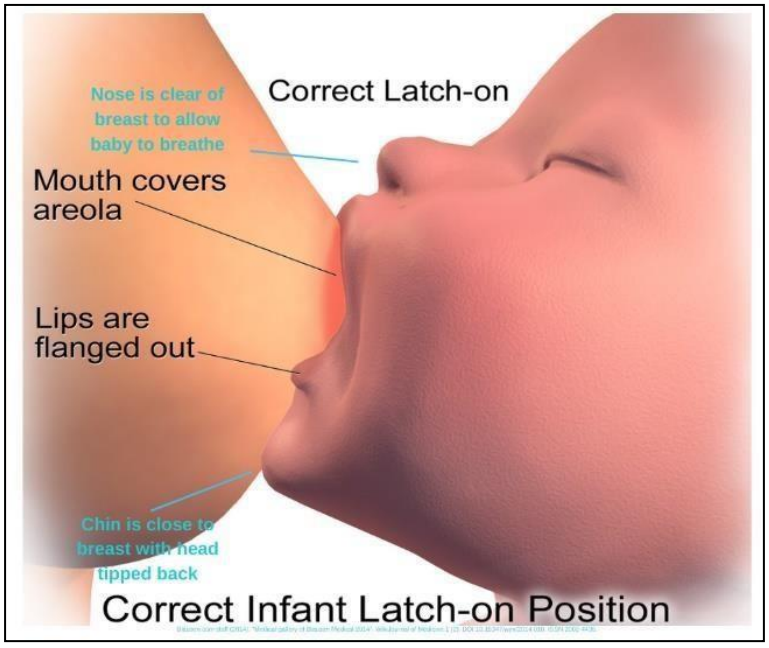
Signs of a good, deep latch:

In a good latch, a large amount of the areola, in addition to the nipple, is in the baby's mouth. The amount of areola visible on either side of the infant's mouth should be asymmetric, meaning most of the "bottom" of the areola should be in the infants mouth and much more of the "top" of the areola should be visible. This position is helpful in pointing the nipple toward the roof of the infant's mouth, helping the infant recruit more milk. The baby's lips should be flanged out.

The neck should be extended to facilitate swallowing, and as such, the chin will be close to the breast, and the forehead and nose should be far from the breast. Another sign of a

good latch is the contour of the infant's cheeks; the cheeks should be rounded all the way to the edge of the mouth, rather than dimpled or creased at the edge of the mouth.

This is a good indicator of effective suck mechanics. Additionally, in order to achieve a deep latch, the infant's mouth must be open wide, preferably wider than 140 degrees.



Signs of poor shallow latch:

In a poor, shallow latch, the infant latches close to or at the nipple, causing the mother intense pain during latching that is relieved with infant release from the breast

While the infant is at the breast, the first indicators of a shallow latch are having the areola be largely visible outside the infant's mouth and a narrow infant mouth angle.

Additional signs result from poor positioning when the infant comes toward the breast to latch. If the infant leads with their brow or forehead, they are likely to flex their neck; this mechanism of latching causes the nipple to point down and then hit the hard palate during sucking.

From an external view, this manifests as the nose and forehead being close to the breast and the chin far from the breast. This neck flexion also obstructs the normal swallowing mechanism, preventing the infant from drinking efficiently.[84] In addition to not being able to swallow properly, this shallow latch prevents the infant from adequately

compressing the glandular tissue behind the nipple and stimulating milk flow; thus, they may begin to apply more suction, which manifests externally as cheek dimpling, or sucking their cheeks in

Let-down reflex:

When the baby suckles muscles in the breast squeeze milk towards the nipples. This is called the let-down reflex. Some women report that they do not experience anything while others report a tingling feeling which is sometimes described as quite strong. The baby may be seen to respond to the beginning of the flow of milk by changing from quick sucks to deep rhythmic swallows. Sometimes the let-down is so strong that the baby splutters and coughs and the mother may need to remove the baby from her breast for a short time until the flow becomes less forceful. Milk may also let-down unexpectedly when a mother hears her baby cry or even only thinks about the baby. Nursing pads may be made or purchased to absorb unexpected milk flows.

BREASTFEEDING PROBLEMS:

While breastfeeding difficulties are not uncommon, putting the baby to the breast as soon as possible after birth helps to avoid many problems.

Low milk supply:

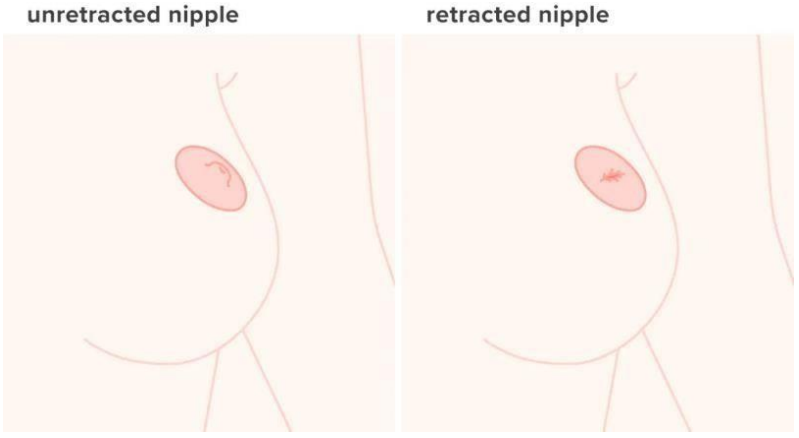
- Primary lactation failure occurs when the mother has a condition incompatible with full milk production, for example breast hypoplasia, breast reduction surgery, or bilateral mastectomy.
- Secondary lactation failure: milk production that is low due to preventable factors, such as formula supplementation, poor milk transfer by the baby, or unrelieved breast engorgement.
- Chronic low milk supply is estimated to be experienced by 10-15% of women.

Breast pain:

Pain often interferes with successful breastfeeding. It is cited as the second most common cause for the abandonment of exclusive breastfeeding after perceived low milk supply

***Inverted nipples*:**

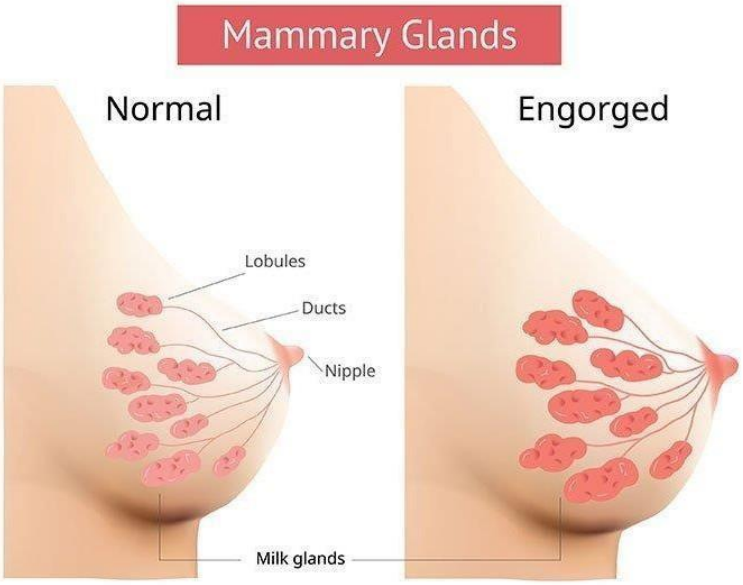
Inverted or retracted nipples sometimes make attachment to the breast difficult.[20] These mothers need additional support to feed their babies. Treatment is started after the birth of the baby. The nipple is manually stretched out several times a day. A pump or a plastic syringe is used to draw out the nipple and the baby is then put to the breast



***Engorgement*:**

Breast engorgement is the sense of breast fullness experienced by most women within 36 hours of delivery. Normally, this is a painless sensation of "heaviness". Breastfeeding on demand is the primary way of preventing painful engorgement.

To prevent or treat engorgement, remove the milk from the breast, by breastfeeding, expressing, or pumping. Gentle massage can help start the milk flow and so reduce the pressure. The reduced pressure softens the areola, perhaps even allowing the infant to feed. Warm water or warm compresses and expressing some milk before feeding can also help make breastfeeding more effective.



***Nipple pain*:**

Sore nipples (nipple pain, or thelalgia) are probably the most common complaint after the birth. They are generally reported by the second day after delivery but improve within 5 days. Pain beyond the first week, severe pain, cracking, fissures or localized swelling is not normal

Sore nipples, a common cause of pain, often come from the baby not latching on properly. Factors include too much pressure on the nipple when not enough of the areola is latched onto and an improper release of suction at the end of the feeding. Improper use of breast pumps or topical remedies can also contribute. Nipple pain can also be a sign of infection.

***Candidiasis*:**

Symptoms of candidiasis of the breast include pain, itching, burning and redness, or a shiny or white patchy appearance. The baby could have a white tongue that does not wipe clean. Candidiasis is common and may be associated with infant thrush.

***Mastitis*:**

Mastitis is an inflammation of the breast. It causes local pain (dolor), redness (rubor), swelling (tumor), and warmth (calor). Later stages of mastitis cause symptoms of systemic infection like fever and nausea. It mostly occurs 2–3 weeks after delivery but can happen at any time.

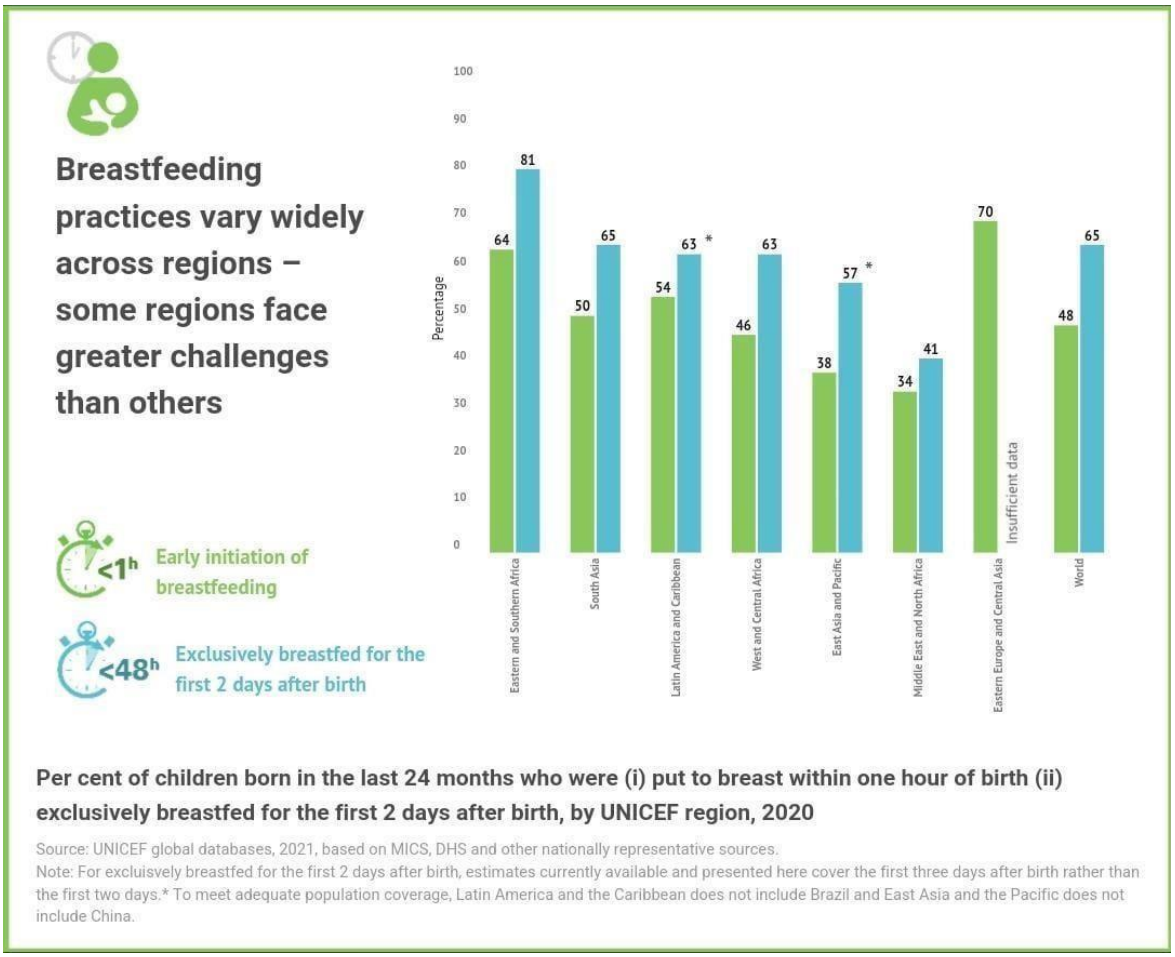
Early initiation of breastfeeding (EIBF, defined as the provision of only breast milk to the new-born within the first hour of birth) has been well-documented to reduce the risk of neonatal mortality. The protective effect of EIBF is based on the immunological components of the breast milk, the improvement in exclusive breastfeeding and the avoidance of pre lacteal foods that deprive new-borns of colostrum, rich in nutrients and immunoglobulins needed to fight disease.

What, when and how young children are fed during the first two years of life lay the foundation for survival, growth and development. Ideally, infants should be put to breast within one hour of birth, breastfed exclusively for the first 6 months of life and continue to be breastfed up to 2 years of age and beyond. Starting at 6 months, breastfeeding should be combined with safe, age-appropriate feeding of nutritious solid, semi-solid and soft foods.

In 2021, UNICEF and WHO published a set of updated indicators for assessing infant and young child feeding practices during this critical window of birth to up to 2 years of age.

Too few children benefit from recommended breastfeeding practices.

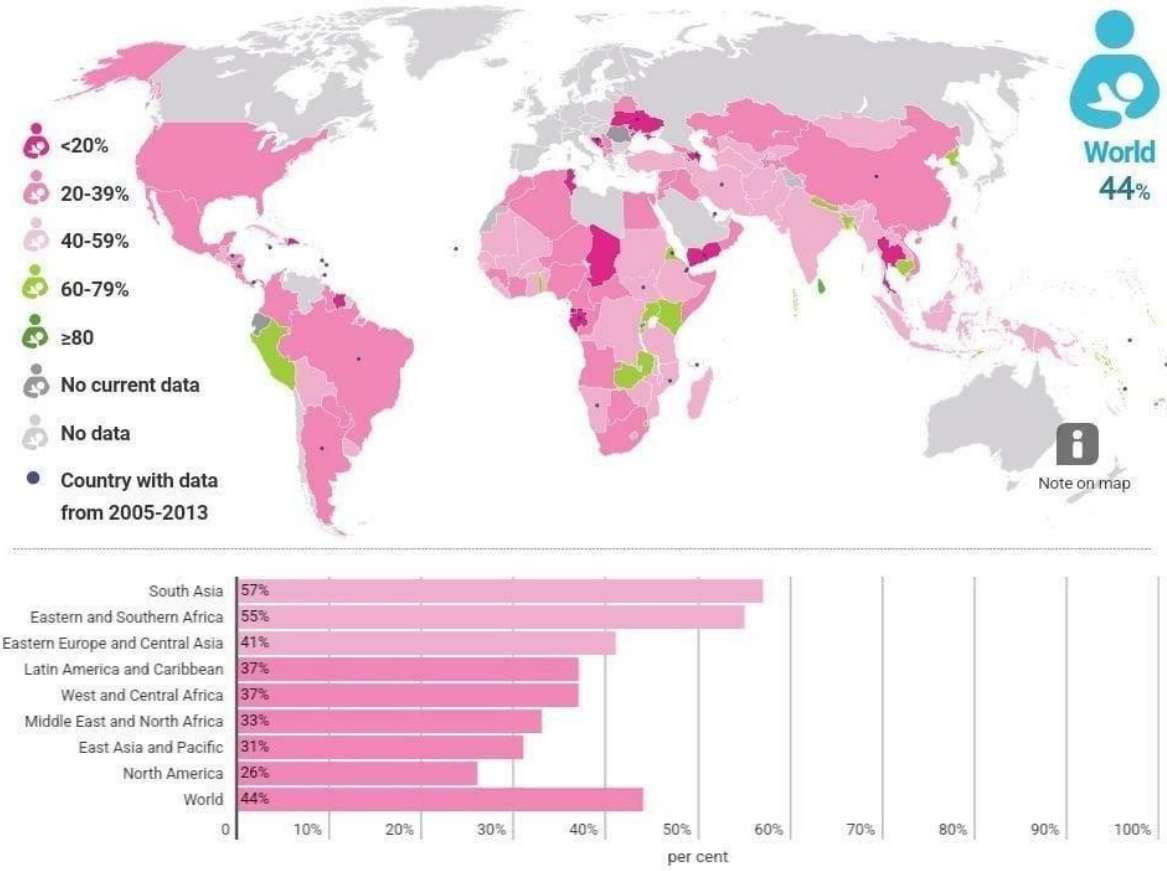
From birth to 6 months of age, feeding infants nothing but breastmilk guarantees them a food source that is uniquely adapted to their nutrient needs, while also being safe, clean, healthy and accessible, no matter where they live. Putting new-borns to the breast within the first hour of life – known as early initiation of breastfeeding – is critical to new-born survival and to establishing breastfeeding over the long term. When breastfeeding is delayed after birth, the consequences can be life-threatening – and the longer new-borns are left waiting, the greater their risk of death. (UNICEF)



Per cent of children born in the last 24 months who were (i) put to breast within one hour of birth (ii) exclusively breastfed for the first 2 days after birth, by UNICEF region, 2020

Source: UNICEF global databases, 2021, based on MICS, DHS and other nationally representative sources.
Note: For excluisvely breastfed for the first 2 days after birth, estimates currently available and presented here cover the first three days after birth rather than the first two days.* To meet adequate population coverage, Latin America and the Caribbean does not include Brazil and East Asia and the Pacific does not include China.

Globally, less than half of all new-borns (48 per cent) are put to the breast within an hour of birth – leaving far too many new-borns waiting too long for this critical contact with their mothers. This practice varies widely among regions. The prevalence of early initiation of breastfeeding in Eastern Europe and Central Asia (70 per cent) and Eastern and Southern Africa (64 per cent) is twice as high compared to Middle East and North Africa (34 per cent). Feeding new-borns anything other than breastmilk has the potential to delay their first contact with their mother and can make it more difficult to establish breastfeeding. Yet, 1 in 3 new-borns still receive food or liquids in the earliest days of life, when their bodies are most vulnerable.



Per cent of infants aged 0–5 months exclusively breastfed, by country and UNICEF region, 2020

Source: UNICEF global databases, 2021 based on MICS, DHS and other nationally representative sources, 2014–2020 (• denotes countries with older data between 2005-2013; data from these countries are not included in the regional or global aggregates with the exception of China). Countries shaded in dark grey have estimates from 2004 or earlier; these countries are not included in the regional or global aggregates.

An infant that is not exclusively breastfed could be at a substantially greater risk of death from diarrhoea or pneumonia than one who is. Moreover, breastfeeding supports infants' immune systems and may protect them later in life from chronic conditions such as obesity and diabetes. Yet despite all the potential benefits, only two fifths of infants 0–5 months of age worldwide are exclusively breastfed. South Asia has the highest prevalence of exclusive breastfeeding with nearly 60 per cent of infants being exclusively breastfed. In contrast only 26 per cent of infants 0–5 months in Northern America are exclusively breastfed.

Rationale

Global nutrition Targets 2025 focuses on Improving Exclusive Breastfeeding.

Region specific data is scarce on Breastfeeding positions and techniques.

In view of the above, present study was planned with the broad objective:

Broad objective

To understand the knowledge and practices among lactating mothers on breastfeeding positions and techniques.

The specific objectives were:

1. To assess socio demographic data of lactating mothers (0-6 months).
2. To assess knowledge and practices of lactating mothers (0 – 6 months) regarding selected Infant and Young Child Nutrition (IYCN) practices.
3. To collect information of lactating mothers (0 – 6 months) on utilization of selected ICDS services during Ante Natal Check-up & Post Natal Check-up.
4. To assess breastfeeding positions and techniques of enrolled mother.
5. To sensitize lactating mothers (0 – 6 months) on breastfeeding positions and techniques.
6. To study the impact of sensitization on breastfeeding position and techniques in enrolled lactating mothers.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

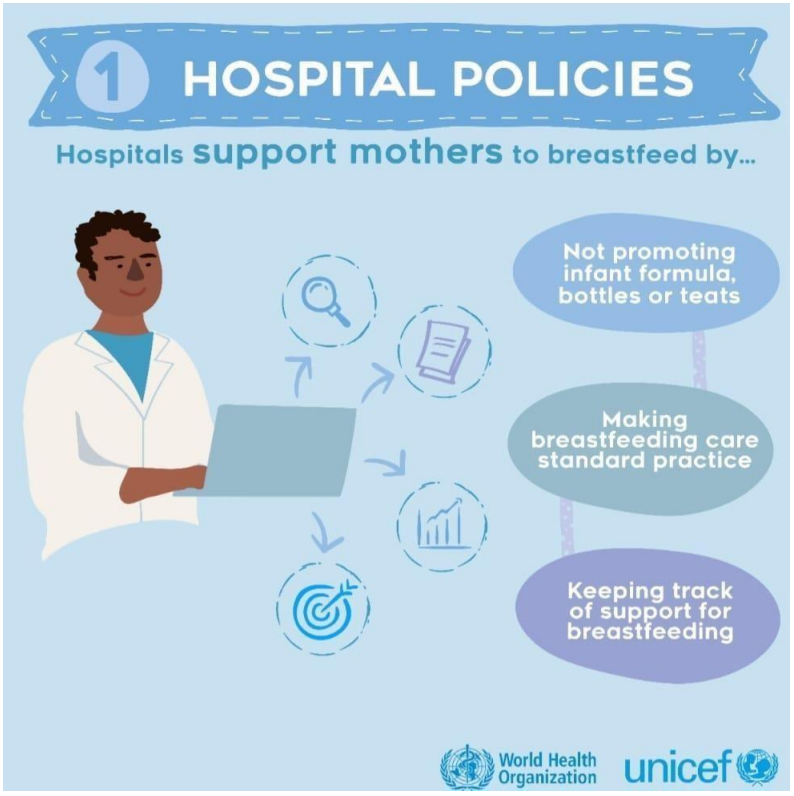
Health is a very significant aspect of human life. The advantages of breastfeeding for mothers and infants have been extensively acknowledged by the researcher. There are various scholars from time to time who have contributed to the studies on breastfeeding. The review of literature regarding my research has been discussed in the followings:

- Global, National and regional trends in IYCN
- Factors for poor IYCN practices in India
- Role of correct Breastfeeding positions and latching.
- Knowledge of mothers about IYCN
- Studies on breastfeeding positions and latching
- Training needs of health/ICDS functionaries regarding correct breastfeeding position and latching
- Status of utilisation of ante-natal care services and the factors affecting it
- MAA program
- Regional studies in the area of IYCN

Ten steps to successful breastfeeding

WHO and UNICEF launched the Baby-friendly Hospital Initiative (BFHI) in 1991 to help motivate facilities providing maternity and new born services worldwide to implement the Ten Steps to Successful Breastfeeding. The Ten Steps summarize a package of policies and procedures that facilities providing maternity and new born services should implement to support breastfeeding. In 2018, WHO revised the Ten Steps based on the 2017 guideline on protecting, promoting and supporting breastfeeding in facilities that provide maternity and new born services.

WHO has called upon all facilities providing maternity and new born services worldwide to implement the Ten Steps. The implementation guidance for BFHI focuses on integrating the programme across healthcare systems to facilitate universal coverage and ensure sustainability over time. The guidance outlines nine key national responsibilities to scale up implementation of the Ten Steps.

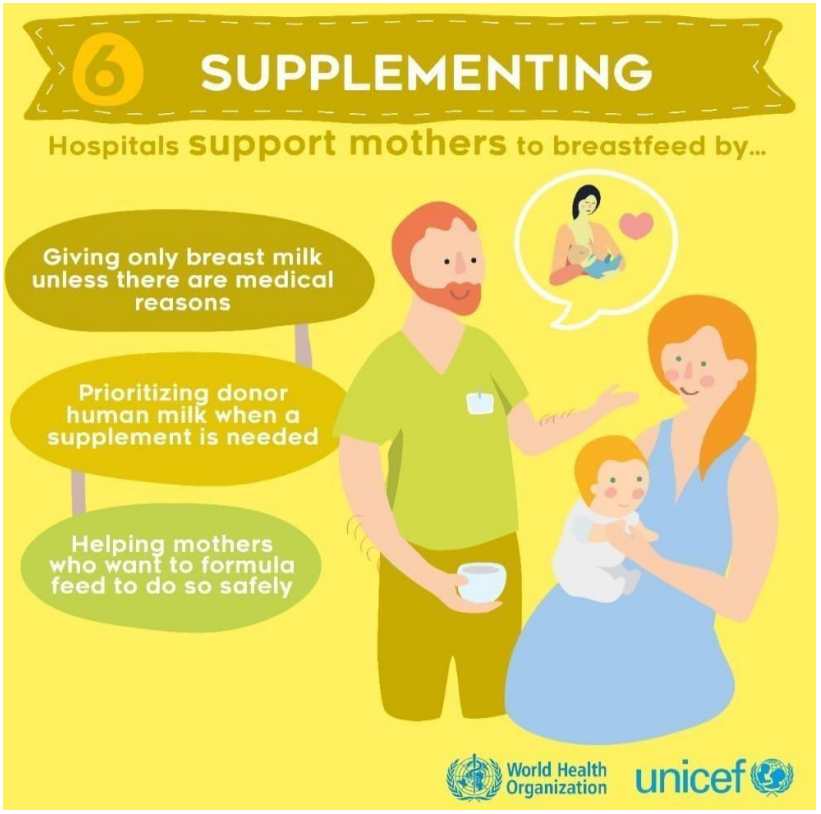

1 HOSPITAL POLICIES
Hospitals support mothers to breastfeed by...
Not promoting infant formula, bottles or teats
Making breastfeeding care standard practice
Keeping track of support for breastfeeding
World Health Organization
unicef

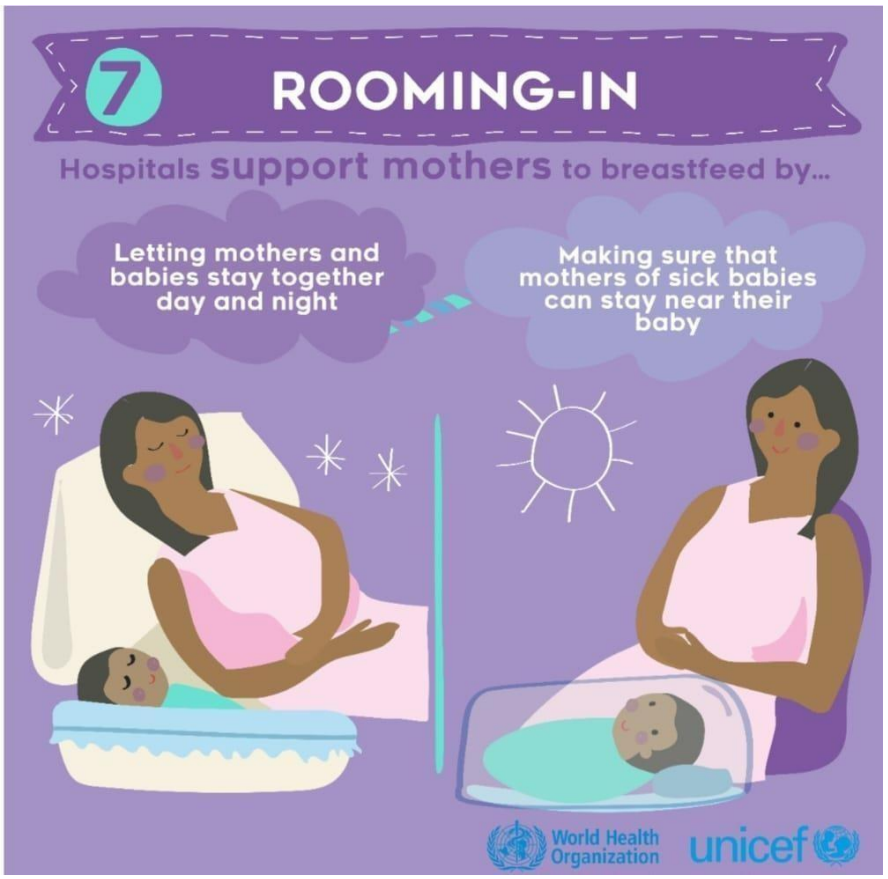

2 STAFF COMPETENCY
Hospitals support mothers to breastfeed by...
Training staff on supporting mothers to breastfeed
Assessing health workers' knowledge and skills
World Health Organization
unicef


3
ANTENATAL CARE
Hospitals support mothers to breastfeed by...
importance of breastfeeding
Discussing the importance of breastfeeding for babies and mothers
Preparing women in how to feed their baby
World Health Organization
unicef


4
CARE RIGHT AFTER BIRTH
Hospitals support mothers to breastfeed by...
Encouraging skin-to-skin contact between mother and baby soon after birth
Helping mothers to put their baby to the breast right away
World Health Organization
unicef


5
SUPPORT MOTHERS WITH BREASTFEEDING
Hospitals support mothers to breastfeed by...
Checking positioning, attachment and suckling
Giving practical breastfeeding support
Helping mothers with common breastfeeding problems
World Health Organization
unicef


6
SUPPLEMENTING
Hospitals support mothers to breastfeed by...
Giving only breast milk unless there are medical reasons
Prioritizing donor human milk when a supplement is needed
Helping mothers who want to formula feed to do so safely
World Health Organization
unicef


7
ROOMING-IN
Hospitals support mothers to breastfeed by...
Letting mothers and babies stay together day and night
Making sure that mothers of sick babies can stay near their baby
World Health Organization
unicef


8
RESPONSIVE FEEDING
Hospitals support mothers to breastfeed by...
Helping mothers know when their baby is hungry
Not limiting breastfeeding times
World Health Organization
unicef


9
BOTTLES, TEATS AND PACIFIERS
Hospitals support mothers to breastfeed by...
Counsel mothers on the use and risks of feeding bottles, teats, and pacifiers
World Health Organization
unicef


10
DISCHARGE
Hospitals support mothers to breastfeed by...
Referring mothers to community resources for breastfeeding support
Working with communities to improve breastfeeding support services
World Health Organization
unicef

Global, National and regional trends in IYCN

Rosenblatt et al (1998) reported that 59% of females initiated the breastfeeding immediately after the birth and 22% women continued the breastfeeding for six months. These rates were found significantly lower than that of USA.

Khan and Basu (1998) studies and made an "Attempt in Gujarat to assess the perception of mothers towards breast milk. Their study showed that 99% of the women in urban areas and 89% of those in rural areas believed that in comparing breast milk commercial milk and animal milk breast milk was best of the child. About 10% of the rural respondent could not give an opinion regarding the milk most suitable for their child. The main reasons for considering breast milk best for children were its nutritional (83.2%) and immunological (20.5%) properties while very few women from rural areas mentioned about the anti-infective properties of breast milk (i.e. 7.6%) about one fifth (19.6%) considered breast milk good because it costs nothing. Almost 100% of the lactating mothers in rural area and those working in the unorganized sector were feeding their children on demand".

Reddy et al (2001) Early initiation of exclusive breastfeeding is important and improving rates suggest continuation of efforts in this direction energetically. Continuation of exclusive breastfeeding practice is significantly low in these urban slums with introduction of animal milk and complementary foods even before six months of age. This highlights the urgent need to evaluate pragmatic interventions to raise awareness on the importance of exclusive breastfeeding and its practice.Breastfeeding was initiated within the first hour of birth in 148 (59%) infants. Colostrum was given in 225 (89.6%) infants whilst 32 (12.7%) infants received prelacteal feeds. Exclusive breastfeeding up to four months was observed in 55 (22.1%, 95% Confidence Interval [CI] 17.1%, 27.5%) infants with only three (1.1%, 95% CI 0.2%, 3.5%) of the cohort mothers continuing to exclusively breastfeed up to six months. Cox proportional hazard regression analysis revealed no gender differences to being exclusive breastfed (Adjusted Hazard Ratio [AHR] 0.97; 95% CI 0.74, 1.27). Children from families of low socioeconomic status had a lower risk of early cessation of exclusive breastfeeding compared to children from middle or higher socioeconomic status (AHR 0.52; 95% CI 0.38, 0.71).

Chandoik N et al (2015) in their article titled, Changes in Exclusive Breast Feeding Practices and its determinants in India,1992-2006: Analysis of National Survey Data

concluded that the rate of exclusive breastfeeding in India continues to be sub optimal with no appreciable gains in last ten to fifteen years. Interventions to seek to increase the exclusive breastfeeding should timely with an increased focus on mothers with infants four to six months of age and those who are most at risk of early discontinuation of exclusive breast feeding.

Vasantakumar et al (2017) in their article titled, Exclusive Breast Feeding Practices Among Mothers o in Urban Slum Settlements: Pooled Analysis From here Prospective Birth Cohort Studies In South India stated that their study results indicated that mothers feeding their babies exclusively by breast milk is below the international standards. There is a requirement of educational intervention to upgrade this standard to improve breast feeding practices.

UNICEF 2022 has reported that globally

Less than one in two newborns receive the benefits of early initiation of breastfeeding (recommendation is to place newborns skin-to-skin with their mother immediately after birth and to support mothers to initiate breastfeeding within one hour of birth).

Only two in five infants under six months of age are exclusively breastfed (recommendation is to feed infants only breastmilk from birth until they turn 6 months of age).

Less than two in three young children aged 12-23 months are still breastfed during their second year of life (recommendation is for breastfeeding to continue for up to 2 years of age or beyond).

WHO Breastfeeding Survey (2017) recommended that "babies should be breastfeed exclusively in the first 6 months. Result of the breast-feeding survey 2017 revealed that the median age of introduction of complementary food to infants was 6 months 0 week. Regarding the feeding practice at 6 months of age 27.9% of infants were fed with breast milk without using any formula milk of this about 27% of surveyed infants continued to be fed with breast milk white taking complementary food at 6 months of age Whereas 0.9% of infants had not started complementary feeding at 6 months and was fed with breastfeeding only".

According to **NFHS (2001)** data, 56 percent of the infants of 0-3 months of age received exclusive breastfeeding. "The percentage dropped off rapidly to 2 percent after 3 months

and to less than 4 percent at 6-7 months at all India level. In Jammu and Kashmir 41.5 percent of the infants in 0-3 months age group are exclusively breastfed which is low in comparison to the national figure. For 12-15 months and 22 out of 36 infants continued breastfeeding beyond 15 months. Results of a survey carried out in north Chennai slums revealed that only 17 percent continued breastfeeding their infants beyond one year". According to NFHS (2001)80 found that 56% of the infants of 0-3 months of age received exclusively breastfeeding. The percentage dropped off rapidly to 22% after 3 months and to less than 4% at 6-7 months at all India level. In Jammu and Kashmir 41.5% of the infants in 0.3 month age group are exclusively breastfed which is low in comparison to the national figure. For 12-15 months and 22 out of 36 infants continued breastfeeding beyond 15 months result of Survey carried out in north Chennai slum revealed that only 17% continued breastfeeding that only 17% continued breastfeeding their infants beyond one year.

Goyal et al (2001) About 15% of the infants were about a week old (early neonatal period) and 85% were in the late neonatal period. There was poorer positioning among primipara (24.0%) than multipara (8.9–12.5%)mothers. Poorer attachment was also more evident among primipara (30.0%) compared to multipara (20.9%) mothers. Parity was significantly associated with poor position (P = 0.028) and attachment (P = 0.002). Poor attachment was related to cracked nipples and mastitis. Preterm and low birth weight were significantly associated with poor attachment and poor effective suckling. Poor suckling was more (42.8%) in the early neonatal period than late neonatal period (32.9%).

Pandey (2002) reported that "A high discarding rate of colostrum by mothers (90%) in Varanasi. Just 20% of mothers fed colostrum to their infants in urban slums of Maharashtra and Gujarat".

Mridula Mishra (2004) in her a study on Varanasi infants reported that "breastfeeding was started at or after 36 hours of delivery and mother's education and per capita family income had no relation with initiation of breastfeeding several reasons have been cited for the delayed initiation of breast milk. The reasons differ from area to area. Some people believe that it is difficult to digest while other has the false notion that it causes illness. The lesser duration of exclusive breastfeeding was more prevalent amang educated high

caste and upper socio economic group mothers. Literacy status and economic level had in verse relation with length of exclusive breastfeeding".

According to the **NFHS-3**, the initiation of breastfeeding within one hour of birth was only 24.5%, however, more recent data from the District Level Household and Facility Survey-3 (DLHS-3), shows slight improvement, to 40.2%. An analysis of data of 534 districts, revealed that initiation of breastfeeding within an hour is between 0-29% in 138 districts, between 30-49% in 197 districts and 50-89% in 194 districts and only in 5 districts it is above 90%. The NFHS-3 also reported exclusive breastfeeding up to the age of six months was seen in only 46.4%. Further analysis of age wise data revealed that exclusive breastfeeding rapidly declines from first month to sixth month, and only about 27.6% children continue to receive it for six months, giving a real low figure of exclusive breastfeeding. According to DLHS-3, in 485 districts exclusive breastfeeding for the first six months is below 50%. This pattern of low rate of exclusive breastfeeding for the first six months and complementary feeding is equally prevalent in both rural and urban India.

The officer on women's health (2012) found that "The components of breast milk provide the needed nutrition for babies and boost the baby's immune system. These breast milk components are easier to absorb and digest than baby Review of Literature 63 formula because is contains living factors hormones and enzymes which help a baby to easily digest all the goodness from every feeding".

Bhar RH et al (2015) in their article titled, Investing In Breastfeeding – the World breastfeeding costing initiative expressed the concept of World Breast Feeding Costing Initiative (WBCi) is a policy advocacy initiative to integrated action that enable breastfeeding . WBCi will Help countries plan and prioritise actions and budget them accurately. International agencies and donors can also use the tool to calculate or track investment in breastfeeding.

Ingram J et al (2015) in their article titled, The development of new breast feeding assessment tool and the relationship with breast feeding self efficacy stated that Bristol breast feeding assessment tool (BBAT) is a concise breast feeding assessment tool facilitating accurate rapid breast feeding appraisal and targeting breast feeding advice to mothers accruing early breast feeding skills or those experiencing problem with an older infant. Accurate assessment is essential to ensure enhance breast feeding efficiency and increased maternal self-confidence.

Chandoik N et al (2015) in their article titled, Changes in Exclusive Breast Feeding Practices and its determinants in India,1992-2006: Analysis of National Survey Data concluded that the rate of exclusive breastfeeding in India continues to be sub optimal with no appreciable gains in last ten to fifteen years. Interventions to seek to increase the exclusive breastfeeding should timely with an increased focus on mothers with infants four to six months of age and those who are most at risk of early discontinuation of exclusive breast feeding.

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Hanna et al (2018) in their article titled, A Description of Breastfeeding Outcomes Among US Mothers Using Nipple Shield stated that a majority of mothers were satisfied with nipple shield and 72% found it to be extremely helpful. The median duration for nipple shield used was 6.6 weeks, with close to half of mothers stopping use of nipple shields by 5th week of postpartum.

Phukan et al (2018) in their article titled, Impact of Timing of Breast-Feeding Initiation on Neonatal Mortality in India revealed that less than one fourth of children were breastfed within one hour of birth across the different districts of India. They found out that timely initiate of breastfeeding is beneficial and that reduces the neonatal mortality rates. Therefore, efforts in formulating an effective policy focussing on early initiation of breastfeeding are needed.

According to **NFHS 5 data** it was observed that children had early initiation of breastfeeding within 1 hour of is equals to 44.6%.

"Good Attachment" was observed among 42% of infants and 60% mothers held infant in "correct position" in study carried out by **Sai et al (2021)** in North India.

Factors for poor IYCN practices in India

Nandini, S. (2003), has conducted a descriptive study to assess the knowledge, attitude, practice and problems of postnatal mothers regarding breastfeeding. Random sampling method was used to select 100 postnatal mothers who have normal deliveries in the selected hospitals of Maduri. The instrument used for data collection was structural interview technique. Overall knowledge regarding breast feeding in the study population was 97.4. All the study population used to breastfeed their babies and were aware more of the benefits of breastfeeding.

Sindhuri et al (2010) About 28.3% and 27.3% of mothers demonstrated improper positioning and poor attachment, respectively. Young mothers, housewives, <10 days old infants, and failure to receive breastfeeding counseling were associated with poor breastfeeding techniques. Poster displays, healthcare workers' training, targeted counseling, and assistance were the priority action points suggested by the staff nurses.

Smith et al (2015) in her article titled, Markets, Breastfeeding and Trade in mothers' milk has introduced concept of marketing opportunities of the breast milk. Human milk is being bought and sold. Co-modifying and marketing human milk and breast feeding risk reinforcing social and gender economic inequities. Yet there are potential benefits for breast feeding, and some of the world's poorest women might profit.in the article she explained the ways how the society can benefit by the donation of human milk.

Davra (2022) Inspite of recommendation of initiation of breastfeeding within the first hour of birth, only few mothers had initiated it within the first hour. Majority of the mothers were giving EBF, but the frequency of feeding in 24 hours was low. Considering high potential benefits of EBF, every opportunity of mothers' interaction with the health facilities like immunization and Ante Natal Clinic visits should be utilized for promoting correct feeding practices.

Essa et al (2022) found about and more than 2/3rd (73.7% and 63.7%) of respondent had poor body position and poor attachment grade respectively. While no one of the, had either good body position or attachment grade in Brazil.

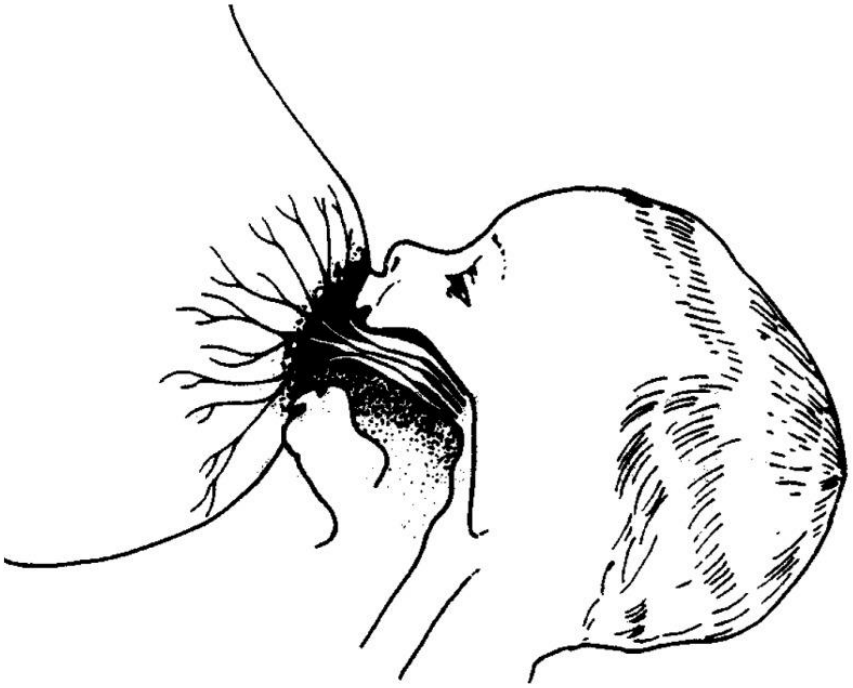
Physiology of breastfeeding

How a baby attaches and suckles at the breast

To stimulate the nipple and remove milk from the breast, and to ensure an adequate supply and a good flow of milk, a baby needs to be well attached so that he or she can suckle effectively. Difficulties often occur because a baby does not take the breast into his or her mouth properly, and so cannot suckle effectively.

Good attachment

Figure shows how a baby takes the breast into his or her mouth to suckle effectively. This baby is well attached to the breast.



The points to notice are:

- much of the areola and the tissues underneath it, including the larger ducts, are in the baby's mouth;
- the breast is stretched out to form a long ‘teat’, but the nipple only forms about one third of the ‘teat’;
- the baby's tongue is forward over the lower gums, beneath the milk ducts (the baby's tongue is in fact cupped around the sides of the ‘teat’, but a drawing cannot show this);
- the baby is suckling from the breast, not from the nipple.

As the baby suckles, a wave passes along the tongue from front to back, pressing the teat against the hard palate, and pressing milk out of the sinuses into the baby's mouth from where he or she swallows it. The baby uses suction mainly to stretch out the breast tissue and to hold it in his or her mouth. The oxytocin reflex makes the breast milk flow along the ducts, and the action of the baby's tongue presses the milk from the ducts into the baby's mouth. When a baby is well attached his mouth and tongue do not rub or traumatise the skin of the nipple and areola. Suckling is comfortable and often pleasurable for the mother. She does not feel pain.

Poor attachment

Figure shows what happens in the mouth when a baby is not well attached at the breast.

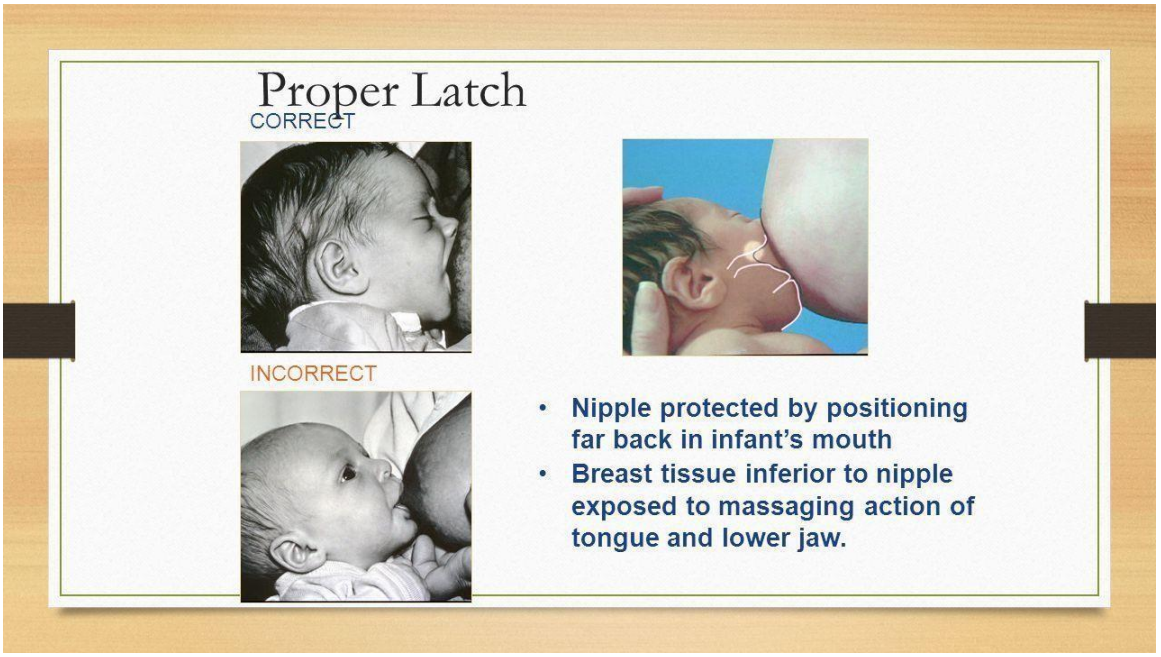
The points to notice are:

- only the nipple is in the baby's mouth, not the underlying breast tissue or ducts;
- the baby's tongue is back inside his or her mouth, and cannot reach the ducts to press on them.

Suckling with poor attachment may be uncomfortable or painful for the mother, and may damage the skin of the nipple and areola, causing sore nipples and fissures (or “cracks”). Poor attachment is the commonest and most important cause of sore nipples, and may result in inefficient removal of milk and apparent low supply.

Role of correct Breastfeeding positions and latching

WHO and UNICEF recommend that children initiate breastfeeding within the first hour of birth and be exclusively breastfed for the first 6 months of life – meaning no other foods or liquids are provided, including water. Infants should be breastfed on demand – that is as often as the child wants, day and night.



Pineda et al (2011) in his article titled, Direct breast - feeding in the neonatal intensive care unit: is it important? revealed that breast milk feeding are encouraged in most NICU’s, but direct breast feeding is often overlooked as an important area of research in

the tightly controlled environment of NICU. His study demonstrates a link between direct breast feeding behaviours in the NICU and success with provision milk at discharge, as well as how early participation can be important factor in the breast feeding process for mothers of NICU infants.

Obilade et al (2015) in his article titled, The Knowledge, Attitude and Practice of Exclusive Breastfeeding among Mothers in Two Semi-Urban Areas around a Baby Friendly Hospital Initiative (BFHI) designated hospital in Lagos State, Nigeria concluded that the knowledge, attitude and practice of breastfeeding are mostly affected by the education and the profession of the mother. Certain beliefs about breast milk and sperm were statistically significant across all the socio demographic data examined. Recommendations were made to increase health education targeted at correcting beliefs about colostrum and breast milk. Recommendation was also made for a re-evaluation of BFHI.

Mazariegos et al (2016) in their article titled, Validity of Guatemalan mothers self reported breastfeeding practices of three month old infants concluded that current feeding practice and the 24 hour recall instruments over estimated exclusive breastfeeding. Nevertheless, the use of reported current feeding practice provided more accurate data to assess breastfeeding practices in public health settings.

Shashank KJ and Chethan TK (2016) in their article titled, A study on breastfeeding practices among mothers in rural area of Mangalore district: a cross-sectional study revealed that large number of the mothers were aware about the importance of initiation of Breastfeeding within one hour after delivery , exclusive breastfeeding till 6 months of age and were practicing it. Though majority of the mother were educated still prelacteal feeds administration was done and colostrum was discarded by the majority of the primi parous mothers than multiparous mothers. This showed the lack of information about the breastfeeding to the mother during the antenatal period in the first pregnancy. Whereas multiparous mother had obtained the knowledge about the proper breastfeeding practises in there last pregnancy in the hospital during the time of delivery.

Haider R and Saha KK (2016) in their article titled, Breastfeeding and infant Growth Outcomes in the Context of Intensive Peer Counselling Support in Two Communities in Bangladesh stated that well trained and supervised community-based peer counsellor can

assist a lot in encouraging and initiating breast feeding within an hour of delivery and continue exclusive breastfeeding till six months.

Khan GN et al (2017) in their article titled, Determinants of Infant and Young Child Feeding Practices By Mothers In Two Rural Districts Of Sindh, Pakistan: A Cross Sectional Survey revealed that infant and young child feeding rates (IYCF) were below the acceptable level and associated with maternal age. They also stated that this level may increase by educating the mothers and reducing the poverty.

Davra (2022) Inspite of recommendation of initiation of breastfeeding within the first hour of birth, only few mothers had initiated it within the first hour. Majority of the mothers were giving EBF, but the frequency of feeding in 24 hours was low. Considering high potential benefits of EBF, the every opportunity of mothers' interaction with the health facilities like immunization and Ante Natal Clinic visits should be utilized for promoting correct feeding practices.

Thakre et al (2022) observed in North India that during breastfeeding chin touching to the breast is 58.65% infant, more areola visible above than below in 26.92% infant. Poor positioning of breast and poor attachment were documented at 24 hours after birth.

Other comparable study by Coca et al (Sao Paublo, Brazil). And Kronborg et al reported that parity was significantly associated with position and attachment. However, Gupta et al from North India did not find any statistically significant association between parity, age of baby, literacy of mothers and effective breastfeeding.

Knowledge of mothers about IYCN

Ryan and Martinez in (1989) surveyed "the rate of breastfeeding among mothers. They found that the same percentage of unemployed women and women employed full time were breastfeeding in the hospital (54.5%). At 6 months post partum the rates were 24.3% in unemployed women and 10% in employed women respectively".

Van and Greiner (1989) stated that "in both developed and developing countries many health workers assume that breast milk substitutes were needed by women because of employment and they sometimes promote the use of breast milk substitutes on this assumption. Professionals women have often been unenthusiastic about making efforts to promote breastfeeding because they believe that the economic advancement of women requires labour force participation and breastfeeding are in conflict with each

other. For such employed women various conditions of employment are separation of the mother from the baby inflexible shifts and lack of work-site child care. Transportation and maternity leave policies".

WHO (1998) reported that for the promotion of breastfeeding it was considered important that pregnant women were informed well about infant feeding and were prepared for this Duty of motherhood. They should be educated completely so that they can make well informed decisions.

Kishore and Garg (1999) - reported that the common substances used as pre-lacteal are honey, sweetened water (with glucose, sugar, Jaggery or honey), Plain water, boiled ghutti or herbal mixture, castor oil, cow's milk, goat's milk, gangajal, cow's urine, Kalma pani and ujwain water with (sugar) formula etc. The types of prelacteal feeds vary from one community to another depending on cultural beliefs, socio economic status, religion and even sex of the child. The various mode employed to administer pre-lacteal feed include unsterilized coin, cotton which finger and thereby subjecting to baby to the risk of infection.

Mahajan et al (1999) reported that 55% of mothers from areas fed colostrums to infant especially the male child as they considered it good for the baby. Statistically significant association was observed between this notion about colostrums with sex of the infant ($p>0.05$) in India. Pre-lacteal feeding has been widely in practice since ancient times and appears to be widely prevalent among all sections whether rural or urban educated on uneducated mothers. Indian mothers feed on demand. Gender bias was reported in the feeding schedule of infants. Male infants were preferably fed on regimental feeding schedule then female infants.

Ingram et al (2015) in their article titled, The development of new breast feeding assessment tool and the relationship with breast feeding self-efficacy stated that Bristol breast feeding assessment tool (BBAT) is a concise breast feeding assessment tool facilitating accurate rapid breast feeding appraisal and targeting breast feeding advice to mothers accruing early breast feeding skills or those experiencing problem with an older infant. Accurate assessment is essential to ensure enhance breast feeding efficiency and increased maternal self-confidence.

Carroll et al (2015) in their article titled, Artificial Milk Feeding Women's Views of Their Feeding Choice in Ireland stated that these artificial milk feeding women based

their infant feeding decision on many social experimental factors. The major influences on their decisions were personal attitudes towards feeding methods and external influences on infant feeding methods. Attitudes towards other women and future infants reinforced a strong preference towards artificial milk feeding.

Vasantakumar et al (2017) in their article titled, Exclusive Breast-Feeding Practices Among Mothers o in Urban Slum Settlements: Pooled Analysis From here Prospective Birth Cohort Studies In South India stated that their study results indicated that mothers feeding their babies exclusively by breast milk is below the international standards. There is a requirement of educational intervention to upgrade this standard to improve breast feeding practices.

Studies on breastfeeding positions and latching

Optimal infant feeding practices ensure a good start to life. Timely initiation of breastfeeding and continued breastfeeding for 6 months ensures proper growth and development of young infant while ensuring reduced morbidity incidences. Also continued breastfeeding should be given up to 2 years with complementary foods started at completion of 6 months.

While babies are born with the reflex to look for their mother's breast, many mothers need support with positioning their baby for breastfeeding and making sure their baby is correctly attached. Breastfeeding takes time and practice for both mothers and babies!

To help you both make the most of breastfeeding, here are some (of many!) positions to try. Remember, the most important thing is for your baby to be able to feed well. It may take a few tries before you find what works best for both of you. **(UNICEF).**

Breastfeeding is a learned skill. Mums may therefore require breastfeeding latch tips and assistance with positioning and detaching their baby during breastfeeding. Optimal breastfeeding attachment, or latching, aims to ensure an adequate transfer of milk – and therefore sufficient drainage of the breast for continued milk supply – and prevention of nipple pain. The overall aim for good attachment is to have the whole nipple and as much areolar/breast tissue as possible in the baby's mouth.

If the baby is latched well, their chin should be touching the breast, with their mouth wide open and their lips turned out. The baby will begin sucking with a mixture of short and long bursts, with periods of pausing. In addition, the mum should not experience pain before, during or after feeds.

If there is an incorrect latch, the baby may make clicking noises, their lips may be curled inwards or they may frequently move their head. The mum may also experience nipple

pain. Long-term problems resulting from incorrect latch could include nipple trauma and pain, low milk supply and poor weight gain in the baby.

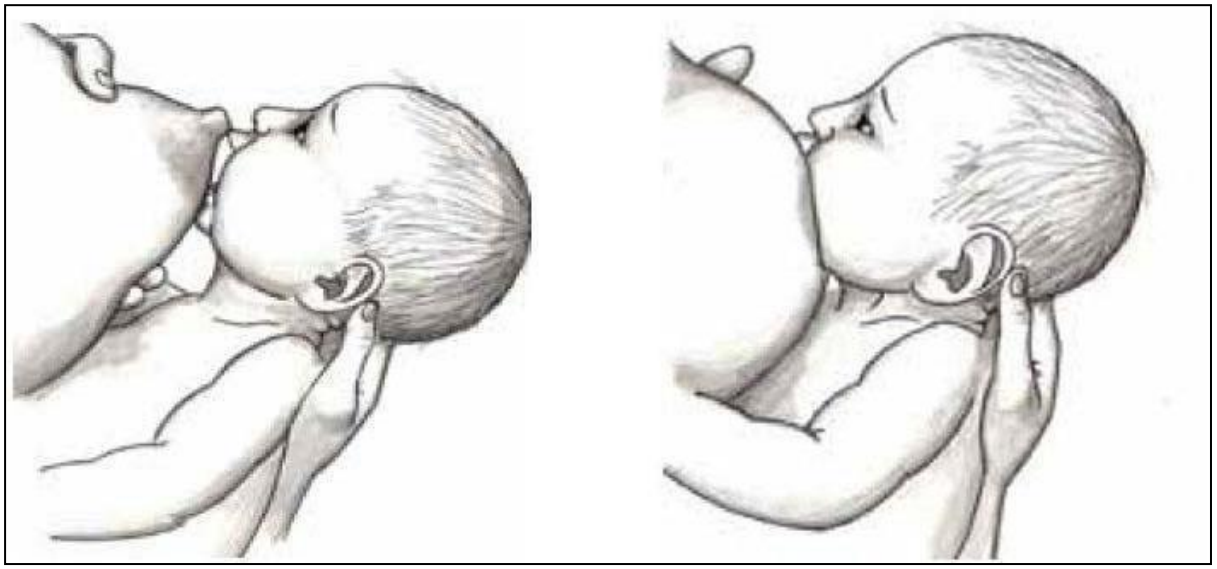
Kishor et al (2009) In six villages of Panchkula district of Haryana, all the mothers of infants between 0-6months were interviewed using a pretested semi-structured questionnaire. Time at initiation of breastfeeding, duration of EBF and their understanding about the usefulness of breastfeeding were assessed. Position of the baby during breastfeeding and attachment of the baby's mouth to the breast were assessed by direct observation while feeding. Breastfeeding knowledge of the mother was evaluated.Out of the 77 mothers, 30% and 10% exclusively breastfed their infants till 4 and 6 months of age, respectively. There was 'good attachment' in 42% mother-infant pairs and infants were held in 'correct position' by 60% mothers. Thirty-nine percent of the mothers had 'satisfactory' breastfeeding knowledge. On multivariate logistic regression analysis, lack of breastfeeding counselling was significantly associated with decreased rates of EBF at 4 months and 6 months (p-value 0.01 and 0.002, respectively) and 'full' breastfeeding (FBF) at 6 months of age (p-value 0.002).

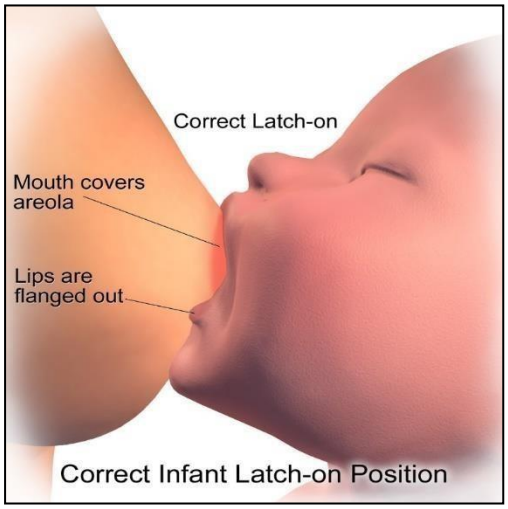
Elten et al (2014) in their article titled, The High Cost of Half Hearted Breast Feeding Promotion In Germany stated that the economic value of breastfeeding to the society at large is under researched and its importance as a preventive public health strategy is underestimated. What little research there is indicated that considerable saving could accrue from following the WHO /UNICEF advice to breastfeed exclusively for six months and continue breast feeding along with complementary foods for two years or more. Despite of relatively high breastfeeding initiation in Germany, neither exclusive breastfeeding nor breast feeding duration come close to the international recommendations

Ying et al (2015) They examined a hypothetical model based on integrating concepts of a breastfeeding decision-making model, a breastfeeding initiation model, and a social cognitive theory among 952 mother-infant dyads. The LATCH breastfeeding assessment tool was used to evaluate breastfeeding techniques and two infant feeding categories were used (exclusive and non-exclusive breastfeeding).

A multigroup analysis in the SEM showed no difference between the caesarean section and vaginal delivery groups estimates of breastfeeding techniques on exclusive breastfeeding initiation. Breastfeeding techniques were significantly positively

associated with exclusive breastfeeding initiation in the entire sample and in the vaginal deliveries group.





Safayi et al (2017) Ineffective breast-feeding technique is one of the factors leading to premature discontinuation of breastfeeding and malnutrition.

An institution-based cross-sectional study was conducted from February 20 to March 20, 2020. An observational checklist and structured interviewer-administered questionnaire were applied to collect the data.

Just under half of the women in the study area applied proper breast-feeding technique Younger and primipara mothers poorly performed to effective BFT. But women having counselling during antenatal care follow-up and immediately after delivery and not

having breast problems applied BFT effectively. Hence, special emphasis has to give for younger and primipara mothers. Besides, educate the mother for preventing breast problems and working on enhancing counselling at postnatal clinic.

Nagendra et al (2017) Educating postnatal mothers who were BF was found to be useful in improving the positioning and the attachment of the baby to the breast. Age, education and parity were significantly associated with mothers BF with correct technique in different areas of Sri Lanka.

Safari K et al (2018) in their article titled, The effect of mother and new born early skin to skin contact on initiation of breast feeding, new born temperature and duration of third stage of labour revealed that skin to skin contact provides an appropriate and affordable yet high quality alternative to technology. It is easily implemented even in small hospitals of very low-income countries, and has a potential to save new-born's and mothers' lives. It is necessary to prioritise training of health providers to implement essential new born care including skin to skin contact. Community engagement is also needed to ensure that all women and their families understand the benefits of skin to skin contact and early initiation of breast feeding.

Nishimura H et al (2018) in their article titled, Determinants of Exclusive Breast Feeding in Rural South India expressed the condition in rural south India that only half of mother from whom samples were taken were following exclusive breastfeeding. They focussed on the fact that it can be improved only by the counselling to the mother during their antenatal visits.

Training needs of health/ICDS functionaries regarding correct breastfeeding position and latching

Dongre et al (2010) In the settings, where practice of institutional delivery is high, the staff of healthcare facility should ensure education of the mothers regarding position and attachment of infant to the breast before discharge from the healthcare facility. At the village level, Village Health Nutrition Day (VHND) can be utilized for health education of future mothers and support for the breastfeeding mothers. The IMNCI assessment form for young infant should also include assessment of positioning of infant.

Karnawat (2011) observed that "hospital staff neither discourages nor prevents the family to indulge in the practice or pre-lacteal feeding with 6 hours of birth. Nearly half of the nurses preferred clock feeding. Almost 60% of hospital staff did not know about the correct posture of mothers and infant during breastfeeding. Most of the doctors and paramedical favoured initiation of breastfeeding on first day".

Sharma (2011) - studied "the attitude of the medical and nursing personnel. They found that the majority of the staff members believed that breastfeeding is best for the mother who had full term new borns. One third nurses and 10% of the doctor were found to belief for preterm infants. A good number of doctor and nurses stated that boild water should be the first feed of the new born. Nearly half of nurses and a small number of doctors recommended the introduction of bottle feed in the first month of the life which is believed to be beneficial for the baby in future life".

Thakre et al (2012) Midwives (ANM) who were trained in IMNCI assessed the breastfeeding positioning and attachment by using the IMNCI guidelines during the study period at a rural hospital in Saoner, Nagpur District. A breast-feeding problem was recognized in 43.27% babies of the subjects. Poor breast positioning (25% - 53.84%) and poor attachment (26% - 58.65%) were recognized before imparting the health education. Health education and supporting the mothers while they were breastfeeding were found to be useful tools in improving the positioning and the attachment of the baby to the breast.

Dongre et al (2012) Maternal age, maternal occupation, infants' age, and breastfeeding counseling influenced breastfeeding techniques. The prioritized action points need to be implemented to achieve the level of Baby Friendly Hospital. About 28.3% and 27.3% of mothers demonstrated improper positioning and poor attachment, respectively. Young mothers, housewives, <10 days old infants, and failure to receive breastfeeding counseling were associated with poor breastfeeding techniques. Poster displays, healthcare workers' training, targeted counseling, and assistance were the priority action points suggested by the staff nurses.

Kapil (2012) observed that 38% mothers out of the 60 mothers used tinned milk in addition to breast milk over the first five days after birth, 29% of them on the advice of the hospital staff and the remaining on relatives advice. Some mothers follow these practices as a social custom or as a tradition of the locality or because of the advice of elders or midwives or due to absence of milk. 40% of the infants are breastfed within 4

hours of the birth. Nearly half of newborns are breastfed within 4 hours of birth and very few started it within 6-8 hours. Eleven per cent of infants were breastfed within 9-12 hours and almost some per cent got in after 12 hours. 29% mother were advised the use of thinned milk by hospital staff.

Anchondo et al (2012) in their article titled, Paediatricians, obstetricians, gynaecologists and family medicine physicians experiences with and attitudes about breast feeding stated that physicians attitude towards breast feeding were positive. They are expected to practice health promotion behaviour including breast feeding; however, physicians breast feeding rates are low and although they are knowledgeable about breast feeding, their training lacks on depth and hands on experience.

Kronborg H et al (2012) in their article titled, Antenatal Training to Improve Breast Feeding. A Randomised Trial concluded that antenatal training can increase confidence of breast feeding is pregnancy and provide women with sufficient knowledge about breast feeding after birth. Antenatal training may therefore be a important low technology health promotion tool that can be at low cost in most settings. the antenatal training programme needs to be followed by post-natal breast feeding support as it is not sufficient in itself to increase the duration of breast feeding or reduce breast feeding problems.

Koskinen KS et al (2014) in their article titled, Maternity hospital practices and breast feeding self-efficacy in Finnish primiparous and multiparous woman during immediate post-partum period stated that breast feeding experiences during the immediate post period have an association with breast feeding self-efficacy. Mothers who are not able to initiate breast feeding with an hour after birth of whose infants are supplemented during the hospital stay may benefits from additional support and breast-feeding counselling.

McFadden A et al (2014) in their article titled, The Impact of Transitional Migration on intergenerational Transmission of Knowledge and Practice Related to Breast feeding elaborated that how migration influences the knowledge and advices the grandmothers pass on to younger mothers could help health professionals facilitate family support for breast feeding. Health professionals could start by asking grandmothers about their experiences of breast feeding in their countries of origin and the host countries. Health professionals should not underestimate their role in influencing breastfeeding decisions of mothers of Bangladeshi origin.

Noor et al (2015) The cross-sectional study conducted for a period of 6 months in the urban slums of Rourkela selected by random sampling technique. A predesigned semi structured questionnaire using open and close ended questions were used to collect the information.

Both knowledge and practices regarding breast feeding was below satisfactory levels. Only 57% had early initiation of breast feeding. Though 77% gave colostrum's to their only 29% knew about its nutritive value.

Gutierrez DB and Chantry C (2015) in their article titled, Life does not make it easy to breast feed: using the socio-ecological framework to determine social breast-feeding obstacles in a low-income population in Tijuana, Mexico stated that socio structural factors influence infant feeding practices in low-income communities in Tijuana. We culture in this population. The target audience for this messages should not be limited to mothers but also include family, health care providers, the work environment and society as a whole.

Haider R and Saha KK (2016) in their article titled, Breastfeeding and infant Growth Outcomes in the Context of Intensive Peer Counselling Support in Two Communities in Bangladesh stated that well trained and supervised community-based peer counsellor can assist a lot in encouraging and initiating breast feeding within an hour of delivery and continue exclusive breastfeeding till six months.

Bridges N et al (2018) in their article titled, Exploring Breastfeeding Support on Social Media concluded that the closed Facebook groups hosted by Australian Breastfeeding Association (ABA) provided both informational and emotional support that appeared to be facilitated by an authentic presence from both trained peer breastfeeding counsellor and other mothers. The group administrator played a vital role in both responding to the queries and overseeing the discussions to ensure they adhered ABA's code of ethics

Gonzalez JL et al (2018) in their article titled, Comparison of Attitudes to Breastfeeding Among Spanish-Born and Chinese-Born Postpartum Women in Madrid stated that Chinese born women resident in Spain present the lowest score on the IIFAS (Iowa Infant Feeding Attitude Scale) when compared to Spanish born women which implies a more negative attitude towards breastfeeding. The difference in groups is consistent even when adjusting for non co-founders and other factors which could affect the attitude of mother. It was therefore striking that despite being in spin Chinese born

women maintain this preferences/attitudes regarding breast feeding attitudes regarding breastfeeding, compared with Spanish born women, who obtain overall high scores.

Davre et al (2022) The community-based cross-sectional study was conducted after ethics committee approval. They selected 210 mothers through population proportionate to size cluster sampling with 30 slum areas as clusters and 7 mothers from each cluster. Breastfeeding technique was observed by a trained female investigator through a checklist based on Integrated Management of Neonatal and Childhood Illness guidelines. The proportion of mothers with correct breastfeeding technique was low in light of the robust presence of maternal and child health programs.

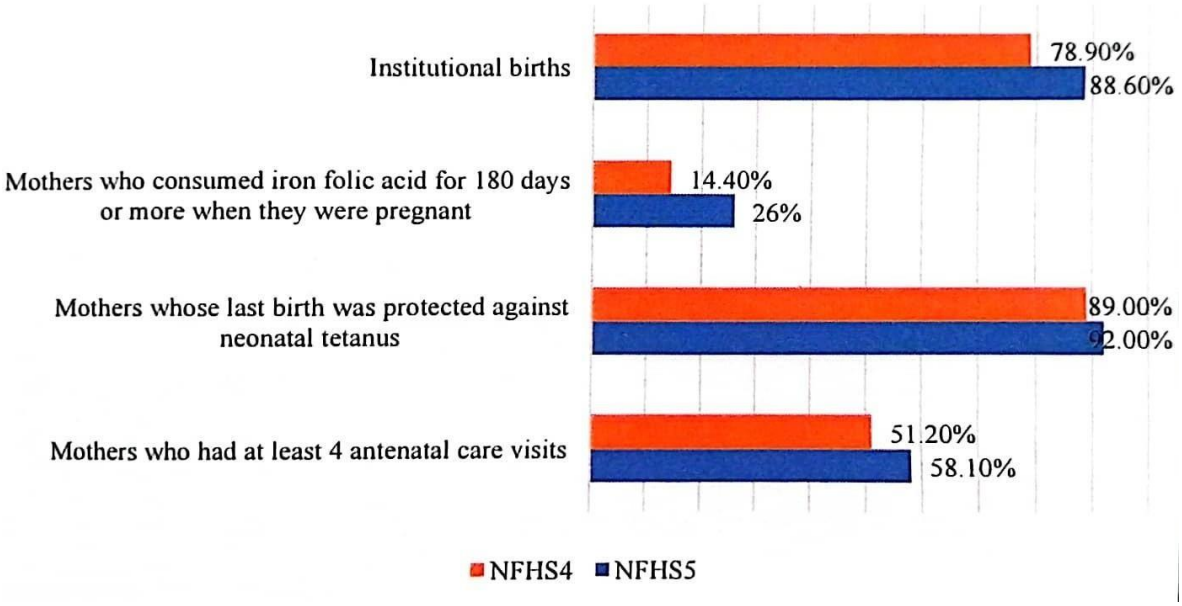
Prajapati et al (2022) study indicates that a mostly (80%) of multiparous mothers had good position and attachment, which could be the outcome of their earlier practice. Rahim et al reported Primiparous women were poorer in position (64% against 38.5%), bonding (50% against 22%) and suckling (59% against 22%) in comparison to multiparous.

Prajapati et al (2022) found that the major source of information regarding breastfeeding technique was doctors (57%) followed by mothers (16%). **Haider et al** found that major providers of infant feeding information were grandmothers (28%).

Status of utilisation of ante-natal care services and the factors affecting it

The status of Ante-natal care for pregnant women in India is still not satisfactory. The findings released in NFHS 5 show that over the period of 5 years there has been only marginal improvement in ANC services utilization for women as shown in figure 2.1.

Figure 2.1 Utilization of ante-natal care services and the factors affecting it



Ogbo et al, (2019) The study examined the relationship between several characteristics and the frequency of ANC service use using data from 183,091 women from the 2015-2016 India Demographic and health survey.

16.6% of women had no ANC visits, and 31.7% had one to three ANC visits, according to the total maternal replies. Nearly half of Indian women receive four or 4 ANC visits. The number of ANC visits varied greatly among Indian regions, with women in the East reporting the highest proportion of non-use of ANC services, followed by women who had four or more ANC visits was highest in the South, while it was lowest in the Northeast.

Jogia et al (2018) A cross sectional study was undertaken in a Gujarati Medical college hospital. Within the first trimester, 78% of the moms had registered for pre-natal care, and 93 had attended at least four ANC visits. The new-borns of 18% of the moms weighed less than 2.5 kg. moms with lower educational standing, multigravida, and mothers with less than 4 visits of ANC as well as premature births and female foetuses, had a considerably increases risk of low birth weight than their counterparts. Lower maternal education, multigravidity, insufficient ANC visits, premature births, and female sex of the foetus were all variables in LBW.

Begum et. al (2016) The researchers looked into the factors that contribute to new-borns being sick and being admitted to the Sick Care Unit. According to the information provided by the mothers of sick neonates, only 72% had attended all four antenatal visits. 58.7% had taken the full course of iron and folic acid tablets (100 tabs), & 87.1% had given birth in the hospital, with 90.4% taking advantage of the Janani Suraksha Yojana (JSY) scheme benefits.

Roy et. al (2013) This study aimed to assess the determinates of utilization of antenatal services by rural beneficiaries in Lucknow.

After comparing the profiles of the women who went for 3 ANC visits and who did not, significant difference was found in terms of age, socio-economic status, timing of registration. About 89.1% women above the age of 25 years took three or more such visits. Majority (91%) of the pregnant women who got them registered early went for more numbers of antenatal visits. The association of religion, caste, education, type of family pr parity was not significant though higher utilization was seen with increasing education.

Kameela et. al (2012) Demographic factors, including level of education, region of residence, marital status, age, religion, and ethnicity were cited 115 times as factors that impact ANC utilization. Education was the second most commonly cited factor that influenced ANC use in 49 studies. The findings of this systematic review demonstrate that women living in FCAS worldwide face many barriers to accessing ANC. These women are not meeting the WHO 2016 recommendations of eight ANC visits, which is contributing to the high MMR in these regions. Although conflict was not commonly identified as a barrier to accessing maternal health services, it is likely that the frequently cited factors, namely socioeconomic status, distance, education, quality of ANC, and gender dynamics, are exacerbated by the effects of conflict.

Patel et al (2012) The study aimed to assess the utilization of antenatal services in Gandhinagar (rural) District, 6366 subjects were enrolled.

83% of the women had registeres for antenatal care and had done at least one ANC visit. Out of those women who had registered for ANC about two third (68.37%) of women had registered at government health facilities and about one third (31.63%) hadegistered at private hospitals.

MAA (Mothers' Absolute Affection) Programme for Infant and Young Child Feeding

MAA - "Mother's Absolute Affection" is a nationwide programme of the Ministry of Health and Family Welfare in an attempt to bring undiluted focus on promotion of breastfeeding and provision of counselling services for supporting breastfeeding through health systems. The programme has been named 'MAA' to signify the support a lactating mother requires from family members and at health facilities to breastfeed successfully.

Goal –The 'MAA' Programme is to revitalize efforts towards promotion, protection and support of breastfeeding practices through health systems to achieve higher breastfeeding rates.

Objective – Build an enabling environment for breastfeeding through awareness generation activities, targeting pregnant and lactating mothers, family members and society in order to promote optimal breastfeeding practices. Breastfeeding to be positioned as an important intervention for child survival and development.

Reinforce lactation support services at public health facilities through trained healthcare providers and through skilled community health workers.

To incentivize and recognize those health facilities that show high rates of breastfeeding along with processes in place for lactation management.

Key components of the programme are –

- **Communication for enhanced awareness and demand generation through mass media and mid media;**
- **Training and capacity enhancement of nurses at government institutions, and all ANMs and ASHAs. They will provide information and counselling support to mothers for breastfeeding;**
- **Community engagement by ASHAs for breastfeeding promotion, who will conduct mothers' meetings. Breastfeeding mothers requiring more support will be referred to a health facility or the ANM sub-centre or the Village Health and Nutrition Day (VHND) organized every month at the village level;**
- Monitoring and impact assessment is an integral part of MAA programme. Progress will be measured against key indicators, such as availability of skilled persons at delivery points for counselling, improvement in breastfeeding practices and number of accredited health facilities; and
- Recognition and team awards will be given to facilities showing good performance, based on evaluation against per pre-decided criteria.

Key messages –

- Early initiation of breastfeeding; immediately after birth, preferably within one hour.
- Breast-milk alone is the best food and drink for an infant for the first six months of life. No other food or drink, not even water, is usually needed during this period. But allow infant to receive ORS, drops, syrups of vitamins, minerals and medicines when required for medical reasons.
- After 6 months of age, babies should be introduced to semi-solid, soft food (complementary feeding) but breastfeeding should continue for up to two years

and beyond, because it is an important source of nutrition, energy and protection from illness.

- From the age of 6–8 months a child needs to eat two to three times per day and thereafter, three to four times per day starting at 9 months – in addition to breastfeeding. Depending on the child's appetite, one or two nutritious snacks, such as fruit, home-made energy dense food, may be needed between meals. The baby should be fed small amounts of food that steadily increase in variety and quantity as he or she grows.
- During an illness, children need additional fluids and encouragement to eat regular meals, and breastfeeding infants need to breastfeed more often. After an illness, children need to be offered more food than usual, to replenish the energy and nourishment lost due to the illness.

Regional studies in the field of IYCN

The study was carried out with the support of a local Non-Government Organization (NGO), which offers health care and other services in 27 villages in and around Nandesari area of Vadodara district. As a part of its many community development programs, the NGO promotes women's economic and social development through microcredit groups or Bachat Mandals.

The IYCF awareness and practices of the mothers were found to be undesirable. Feeding prelacteals was a common practice in the rural area (41%) as mothers perceived that initially there was no breastmilk and child felt hungry. Feeding colostrum was reported by only 50% of mothers and initiation of breastfeeding was delayed (beyond 10 hours) by almost two third mothers. Exclusive breastfeeding (not even water) for 6 months was rarely practiced mainly due to initiation of water feeding. Most of the women reported feeding little milk from both the breasts and not emptying one breast before offering the other. From about half of the children who were receiving top milk, one third had been initiated top milk before six months, as the mothers perceived their breast milk to be inadequate for the child. **(Kanani & Sharma, 2008)**

The primary objective of this study was to measure the impact of capacity building on undernutrition prevalence and IYCF practices. All children under 2 years, approximately 750 per seja i.e. approximately 1500 children, at the time of survey (baseline and post capacity building) formed the main units of observation.

86% AWWs were aware of EIBF within one hour of birth, none of the AWWs and ICDS Supervisors listed mother and child survival as one of the key benefits of EIBF. Similarly, the AWWs were aware that prelacteals can be infectious (78%) and unhygienic (31%); however, none of the AWWs and ICDS Supervisors knew that prelacteals may contain medications which may be harmful for the baby; in 318 Karkar and Sharma, 2013 fact, such message may be useful to encourage caregivers to avoid giving prelacteal feeds. **(Sharma & Karkar, 2013)**

The study was undertaken with the broad objective to study the effectiveness of imparting nutrition heath and food safety education to mothers with children below three years in improving the nutritional status and reducing the diarrheal morbidities among these children residing in the tribal villages of Chikhli taluka of Navsari district. Seventy percent mothers had poor knowledge on breastfeeding. Many mothers (68%) knew that colostrum is good for the child but only 10.6% could mention its correct advantage. Only 73.9% mothers knew that the child should be exclusively breastfed till 6 months and only 30.2% knew that giving prelactals is not good for the child. Only 45% mothers breastfed their babies within 1 hour after the birth, 77% fed colostrum and prelactals were given by 13.7% mothers. **(Seth & Seksaria, 2015)**

ANC services on mamta diwas and during ante natal period in the area of Kutch needs to be strengthened. Sub – optimal IYCN practises by women needs to be concerned through multi – pronged approach. The study highlights the need for focusing on maternal nutrition to reduce the prevalence of LBW. **(Gandhi & Agarwal, 2022).**

METHODOLOGY

METHODLOGY

First 1000 days of life is very crucial for child's life. Correct IYCN practices is the key for overall development of children. Correct EBF (Exclusive Breastfeeding) practices are very important and it depends on positioning and latching of an infant to mother's breast.

The present study was planned with the broad objective.

Broad Objective of the study

To understand the knowledge and practices among lactating mothers on breastfeeding techniques and positions.

Specific Objectives of the study

1. To assess knowledge and practices of lactating mothers (0 – 6 months) regardingselected Infant and Young Child Nutrition (IYCN) practices.
2. To collect information of lactating mothers (0 – 6 months) on utilization ofselected ICDS services during Ante Natal Check-up & Post Natal Check-up.
3. To assess breastfeeding positions and techniques of enrolled mother.
4. To sensitize lactating mothers (0 – 6 months) on breastfeeding positions andtechniques.
5. To study the impact of sensitisation on breastfeeding position and techniques inenrolled lactating mothers.

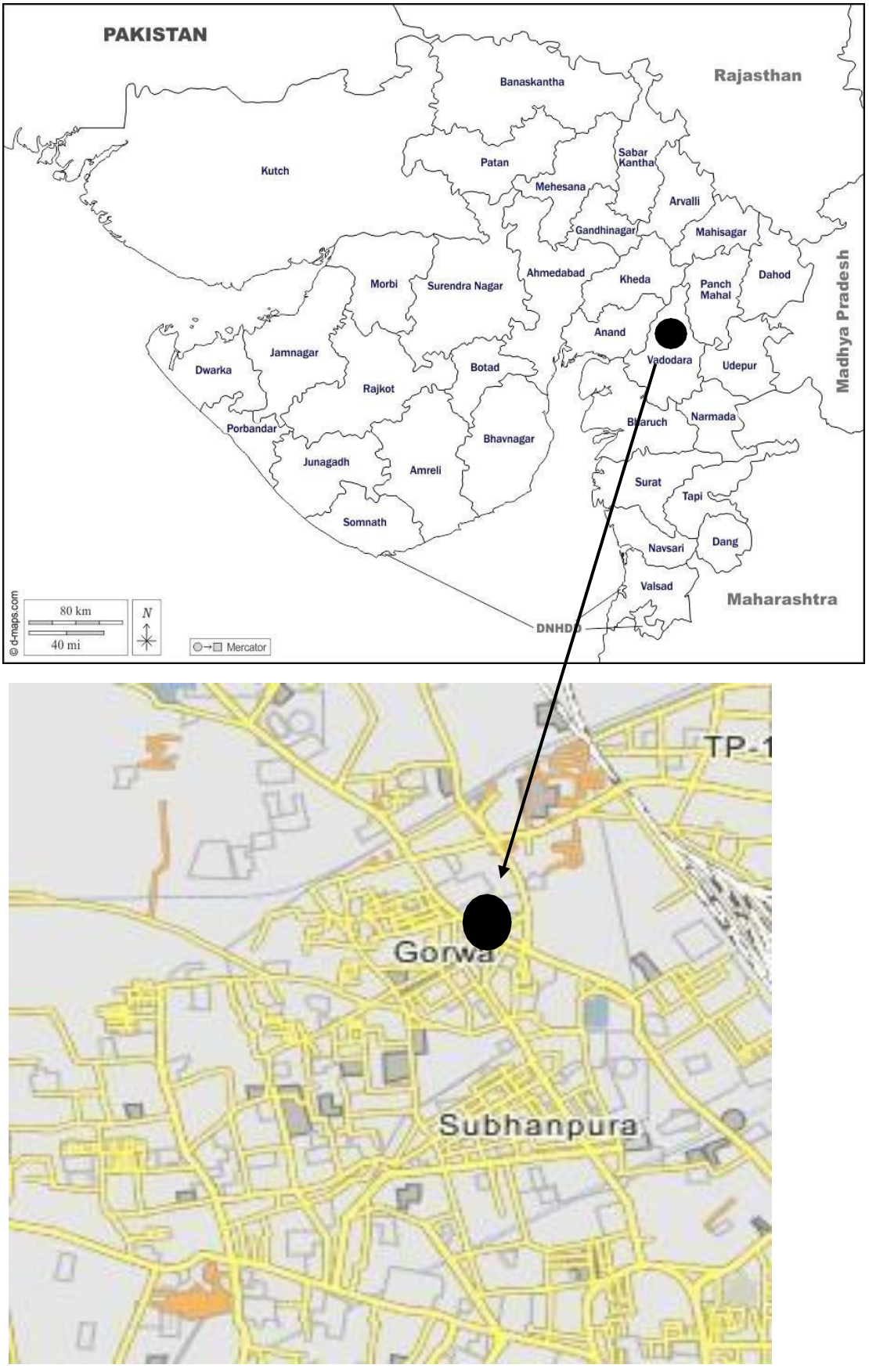
Ethical Approval

The study was approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The study has been allotted ethical approval number **IECHR/FCSc/MSc/2022/34**.

Study area

The study was conducted in Anganwadi's of Gorwa, Urban Health Centre (UHC), Vadodara. (Figure 3.1)

Figure 3.1 Study site



Detailed experimental of design is presented in the fig 3.2.

The study will be conducted in 3 phases:

Phase 1: Knowledge and practices followed by lactating mothers (0-6 months)

Phase 2: Sensitization of lactating mothers (0-6 months)

Phase 3: Observation of lactating mothers (0-6 months) after sensitization for Breastfeeding position and technique.

Phase 1 Knowledge and practices followed by lactating mothers (0-6 months)

There are 34 UHC's in Urban Vadodara out of which 1 UHC was purposively selected where there were maximum number of lactating mothers (0-6 months) can be enrolled.

A community based observational descriptive study was conducted in Urban Vadodara, Gujarat. All the mothers of infants between 0 – 6 months, who gave consent (appendix 3), were enrolled for the study. They were interviewed using a pre – tested semi-structured questionnaire. Information regarding their socio-economic data and utilization of relevant ICDS services (Appendix 5).

Pregnancy outcome, knowledge regarding selected IYCN practices, myths and beliefs about IYCN were elicited.

Anganwadi Workers were also interviewed for understanding their trainings in IYCN and knowledge about IYCN practices (appendix 4).

Anganwadi workers /ASHA worker accompanied to assess breastfeeding position and technique at the mother's place. The breastfeeding process was observed for 5 min to assess the mother and infant's position, attachment to the breast and effective suckling. If the infant had not received feed during previous 1 h, assessment was done at that time. If the infant was fed during the last 1 h, then the assessment was deferred, and it was conducted after waiting for appropriate time for the infant to have next feed. Position of the baby during breastfeeding and attachment of the baby's mouth to the breast was assessed by spot observation while feeding by trained investigator (ASHA/ANM). Spot observation checklist is persecuted in Appendix 4.

The mothers who lack the knowledge and were following wrong practices were counselled after observation by trained ASHA/ANM using IMNCI guidelines and with the help of dummy models / pictures base.

Phase 2 Sensitization of lactating mothers (0-6 months)

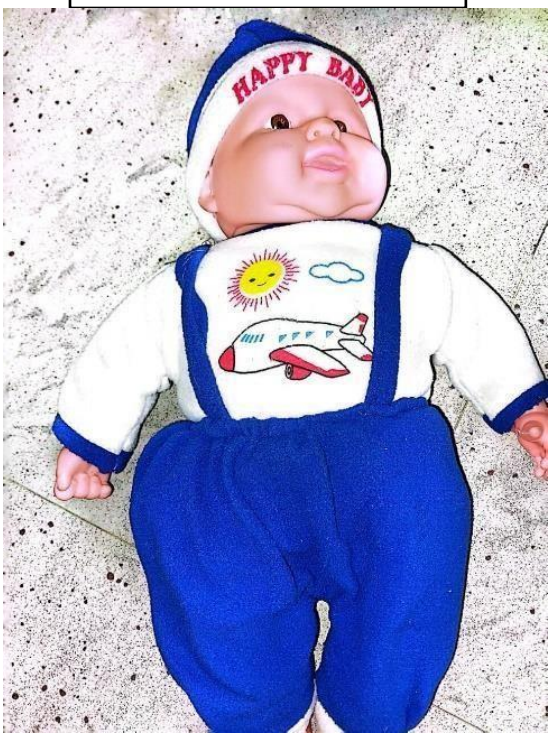
All the mothers who received interpersonal counselling were called into the UHC for reinforcement about correct Breastfeeding positions and techniques.

Dummy models and a UNICEF booklet were used together with a trained ASHA who had received IMNCI training to provide counselling.

Mothers who couldn't visit the UHC were counselled at their local Anganwadi Centre's using similar IEC materials after sensitization.

Dummy models and IEC material is presented below.

Baby's model



Breast model

IEC material

Phase 3 Observation of lactating mothers (0-6 months) after sensitization on breastfeeding position and technique

We re-observed every mother who had received counselling in phases 1 and 2. All 100 lactating women were observed on-site. Spot observation was used to check their practices.

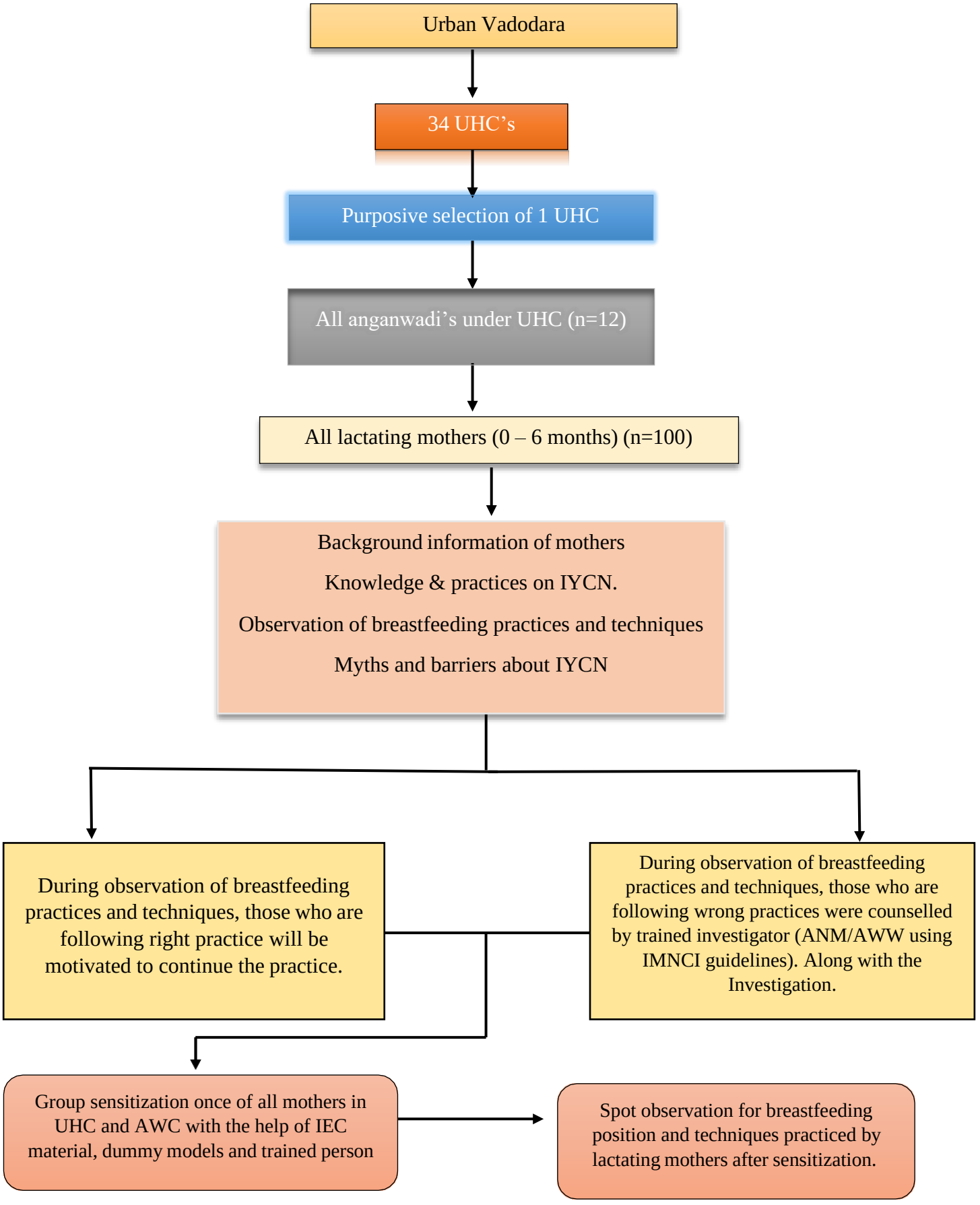
IMNCI checklist to assess Breastfeeding position and latching by enrolled mother.

Criteria for assessing good position, attachment and suckling are presented in table 3.1.

Table 3.1 Criteria for assessing Breastfeeding position, attachment and suckling

Position	1. Infant head and body straight. 2. Infant facing the mothers mother's breast with nose opposite to the nipple 3. Mother supporting infant's whole body	1. Good position (if all criteria met) 2. Not well position (if 1 or 2 criteria met 3. Not proper position at all (no criteria met)
Attachment	1. Chin touching breast 2. Mouth wide open 3. Lower lip turned outward 4. More areola visible above than below the mouth	1. Good attachment (if 3 or 4 criteria met) 2. Not well attached (if 1 or 2 criteria met) 3. No attachment at all (if no criteria met)
Suckling	Infant taking slow deep sucks, something pausing rapid shallow sucks.	1 Infant Suckling effectively 2. Infant not suckling effectively

Figure 3.2 Experimental design



Following Inclusion & Exclusion criteria were used

Inclusion criteria:

- All lactating mothers whose child age was in between 0 – 6 months and who gave consent to participate in the study.
- Lactating mothers who were not planning to migrate during study period.

Exclusion criteria:

- Mothers of children suffering from any abnormal genetic disorder or metabolic syndrome will be excluded.
- Mothers who have migrated or plan to migrate from the region during the study period

Table 3.2 Information about subject enrolled

Particulars	**Information**
Area	Gorwa, Vadodara
Total anganwadis in the selected UHC	12
Total women enrolled from the anganwadi for the study	100

Data was obtained on following aspects

A pre tested semi structured questionnaire was developed to assess:

1. Socio-economic data
    - Education status
    - Type of family
    - Economic category
    - Parity
    - Childbirth information
2. Antenatal factors

   The following ante-natal information was collected from Mamta card or medical records as a source of secondary information:

    - Data of registration at anganwadi centre
    - Blood pressure

- Tetanus toxoid vaccination
- Number of ante natal visits
- Referral information
- Pregnancy outcomes

During interview the women were asked about THR compliance and general dietary practice.

3. Age appropriate IYCN practices
    - Early initiation of breastfeeding
    - Administration of colostrum
    - Administration of pre lacteals
    - Frequency of breastfeeding
    - Exclusive breastfeeding for 6 months
    - Timely introduction of Complementary foods
    - Method of feeding
    - Frequency of feeding complementary foods
4. Maternal knowledge about IYCN practices
5. IYCN Practices followed by lactating mothers (spot observation checklist).
6. Myths and beliefs of lactating mothers (0-6 months)

Primary outcome

- Knowledge and practices of lactating mothers.
- Women practicing correct breastfeeding position and techniques or not.

Secondary outcomes

- Barriers faced by the lactating mothers for exclusive breastfeeding.
- Myths related to breastfeeding practices.

Statistical analysis

Data was entered into Excel. Percentage and frequency were calculated. Appropriate statistical analysis was carried out to present the findings.

RESULTS AND DISCUSSION

RESULTS AND DISCUSSION

World Health Organization (WHO) recommends Early initiation of breastfeeding and Exclusive Breastfeeding (EBF) for the first 6 months of life. Breastfeeding is important for survival, growth and development, health and nutrition of infants and confers from physiological to psychological benefits to both child and mother.

Exclusive Breastfeeding is crucial for attaining POSHAN ABHIYAN targets and SDG goal 3.

The present study was planned with the **broad objective** of to understand the knowledge and practices among lactating mothers on breastfeeding techniques and positions.

The **specific objectives** were:

1. To assess socio demographic data of lactating mothers (0-6 months).
2. To assess knowledge and practices of lactating mothers (0 – 6 months) regarding selected Infant and Young Child Nutrition (IYCN) practices.
3. To collect information of lactating mothers (0 – 6 months) on utilization of selected ICDS services during Ante Natal Check-up & Post Natal Check-up.
4. To assess breastfeeding positions and techniques of enrolled mother.
5. To sensitize lactating mothers (0 – 6 months) on breastfeeding positions and techniques.
6. To study the impact of sensitisation on breastfeeding position and techniques in enrolled lactating mothers.

The phase-wise finding of the studies is presented and discussed below.

Phase 1: Knowledge and practices followed by lactating mothers (0-6 months)

Total 100 lactating mothers (0-6 months) were enrolled from 12 Anganwadi's under 1 UHC (Urban Health Centre) of Urban Vadodara.

Percent response rate per Anganwadi Centre for lactating mothers is presented in table 4.1.

The average percent response rate was 91.3%. Percent response rate was in the range of 70 – 100%. Reasons for low response rate was because for traditional custom to go to parent's place for delivery and stay there for some time.

Table 4.1 Percent response rate of lactating mothers

Anganwadi no.	**Mother responses at AWC**	**Enrolled for the study (n)**	**Response (%)**
1	5	2	70
2	7	7	100
3	10	8	80
4	15	14	90
5	5	5	100
6	10	7	70
7	8	8	100
8	11	11	100
9	15	13	86
10	2	2	100
11	5	5	100
12	18	18	100
Total	**111**	**100**	**91.3%**

Table 4.2 provides background information of enrolled lactating mothers.

It can be seen that age range of lactating mothers was 18-35 years. 55% of mothers reported their education up to primary level. 83% of the mothers was living in Joint families. 94% of the mother were housewives at the time of survey.

Parity and pregnancy outcome for mothers was also elicited which is presented in Figure 4.1. As can be seen from the figure that 52% of mothers were primipara and 48% of mothers were Multipara. 93% of lactating mothers had delivered at full term. 100% mothers had live births and 5% were Low Birth Weight (Mamta card report).

Information about ANC services availed by enrolled mothers was also collected which is presented in Table 4.3 and figure 4.2.

All mothers reported early registration to the health facility and all had 8 ANC check-ups at UHC. 92% of mothers had revealed IFA tablets and 97% of mothers had got Matrushakti THR.

Compliance of Matrushakti is presented in Table 4.4 and Figure 4.3.

During pregnancy 97% of mothers were receiving matrushakti packets and 87.62% of mothers were consuming matrushakti packets, received from their respective anganwadi centre.

After childbirth 95% of mothers were receiving matrushakti packets and 83% of mothers were consuming matrushakti packets regularly.

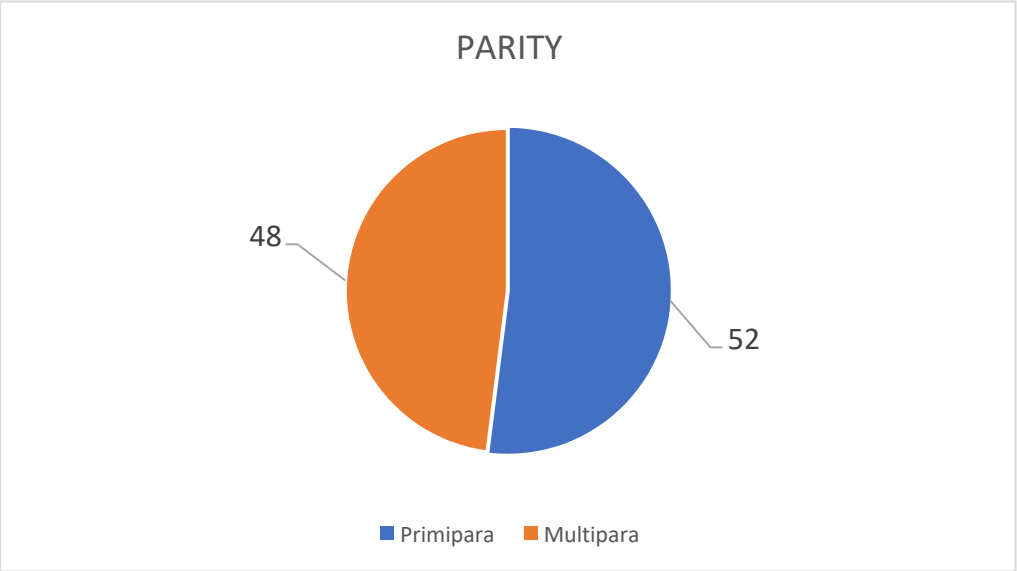
Information regarding IFA supplementation and Calcium was collected which is presented in table 4.5 and 4.6.

During pregnancy 92% of mothers were receiving IFA tablets and after delivery 94% of mothers are receiving IFA tablets. During pregnancy 97.8% of women are getting 30 tablets every month. During pregnancy 99% of women were receiving and consuming Calcium tablets regularly. After child birth 96 percent of women receiving and consuming Calcium tablets.

Table 4.2 Background information of enrolled mothers

Particulars		**N**	**%**
Age groups (years)	18-23	28	28
	24-29	62	62
	30-35	10	10
Total	Mean age: 24±3.007	100	100
Level of education	Illiterate	15	15
	Primary (1^{st} to 8^{th})	55	55
	Secondary (9th to & 10^{th})	15	15
	Higher secondary (11^{th} & 12^{th})	11	11
	Graduate	1	01
	Post graduate	3	03
	Total	100	100
Working status of the mothers	Housewife	94	94
	Labourer	1	01
	Service	5	5
	Total	100	100
Religion	Hindu	65	65
	Muslim	35	35
	Total	100	100
Type of family	Nuclear	11	11
	Joint	83	83
	Extended nuclear	6	06
	Total	100	100
Number of children's	1	52	52
	2	37	37
	3	10	10
	>3	1	1
	Total	100	100

Figure 4.1 Parity and pregnancy outcome



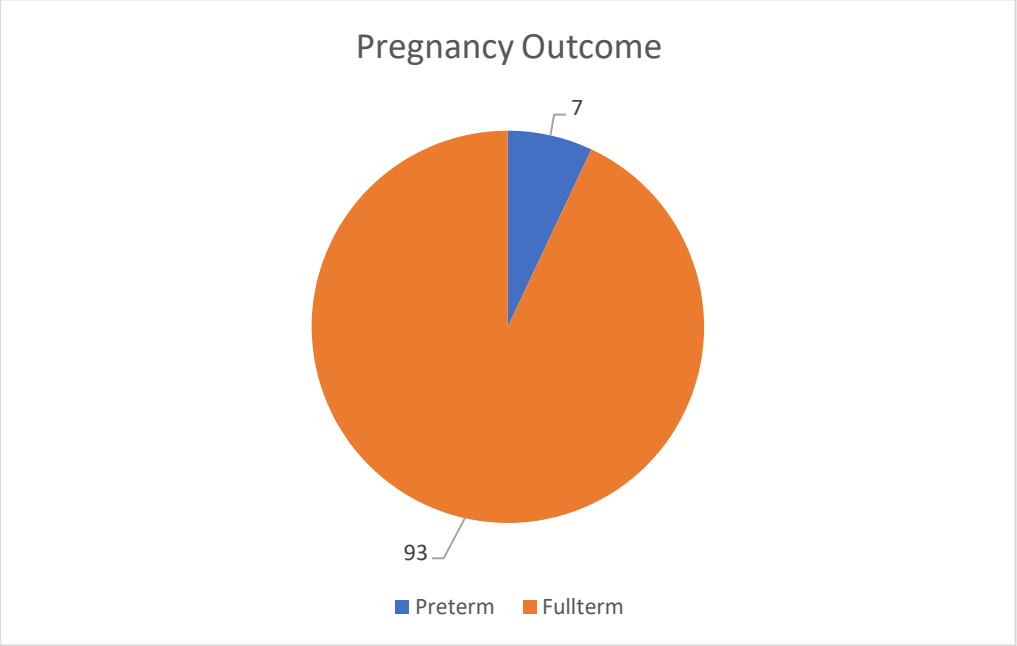


Table 4.3 ANC services availed by enrolled mothers

ANC services	**N**	**%**
Urine test	100	100
Weight monitoring	100	100
BP check	100	100
Blood testing	100	100
IFA	92	92
Matrushakti	97	97
TT injections	100	100
Counselling	100	100
USG (sonography)	100	100
Deworming tablets	100	100

Figure 4.2 ANC services availed by mothers

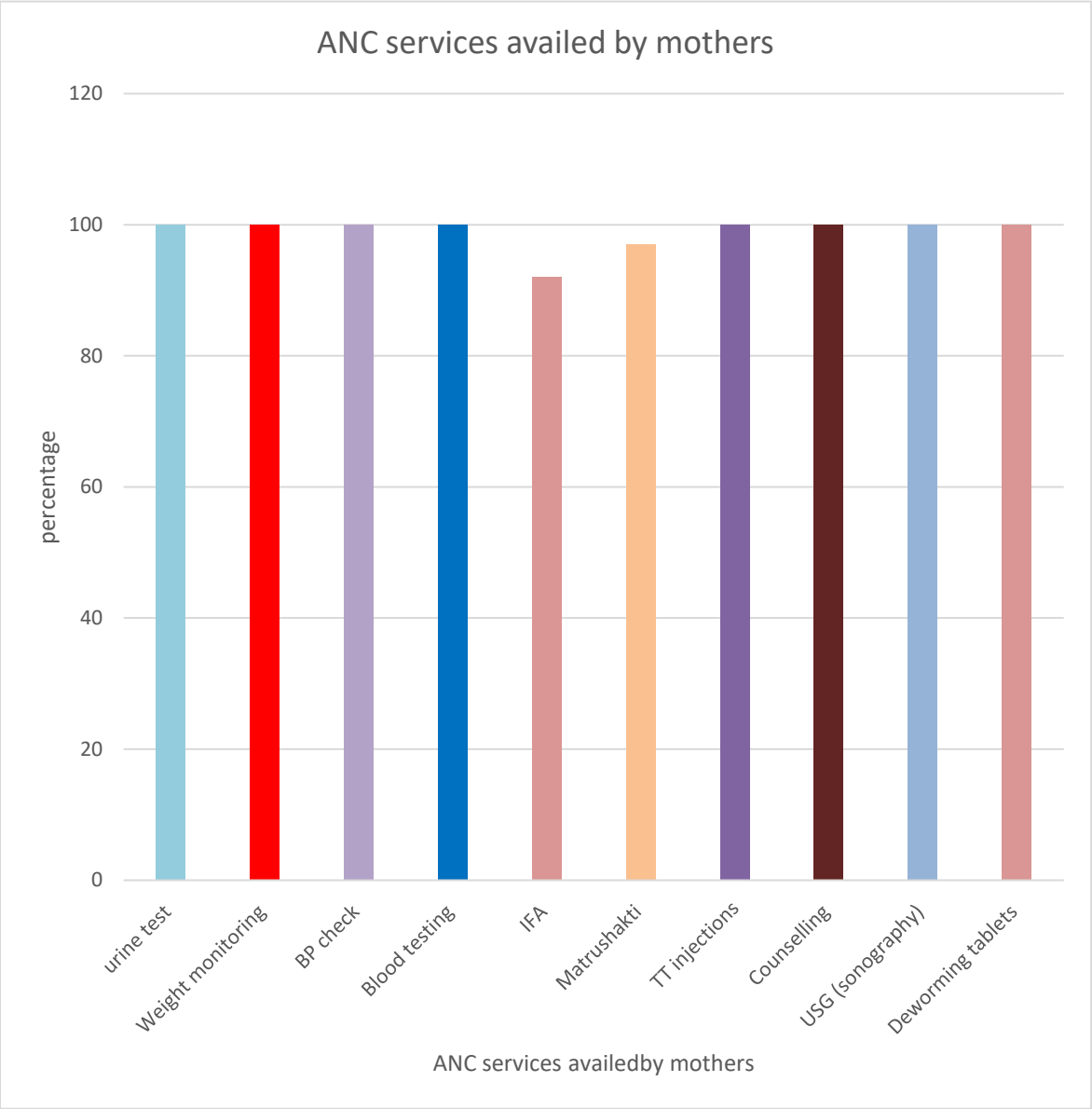
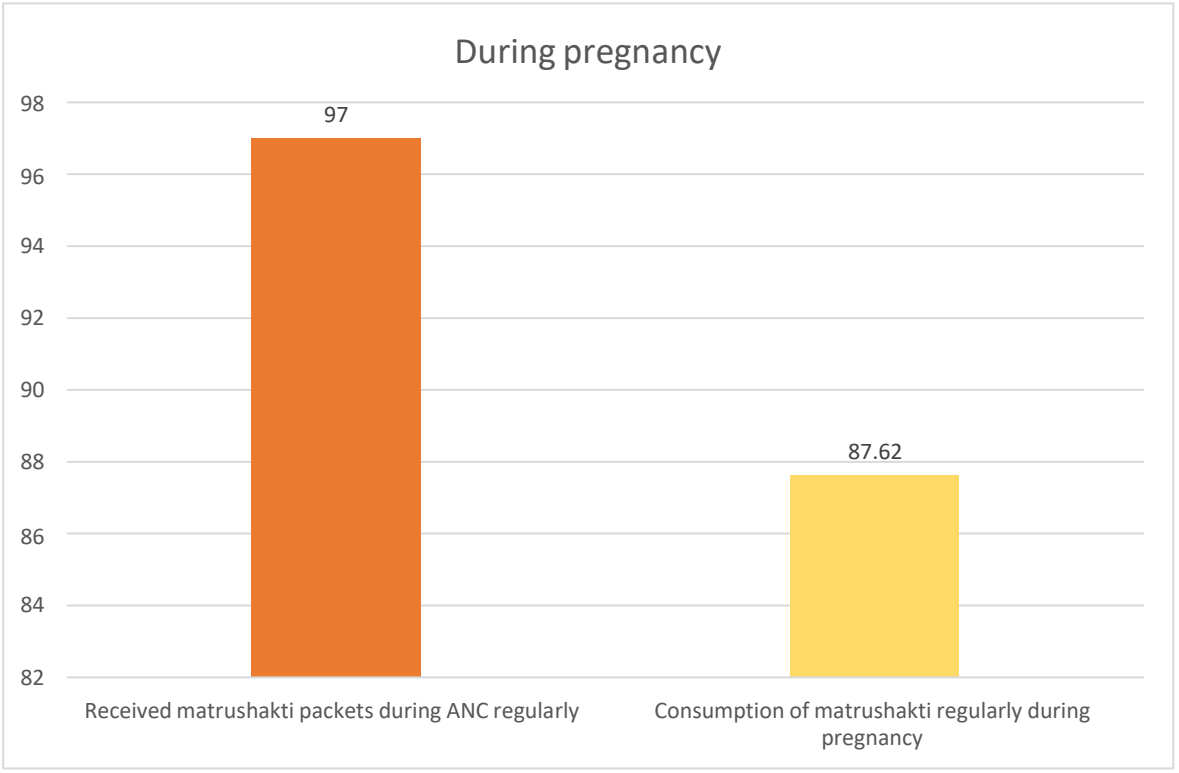


Table 4.4 Compliance of Matrushakti (Take Home Ration) during ANC and PNC period

During Pregnancy		**N**	**%**
Received Matrushakti packets during ANC regularly	Yes	97	97
	No	3	3
	Total	100	100
Frequency of getting matrushakti packets	Every month	96	98.9
	Occasionally	1	1.03
	Total	97	100
Consumption of matrushakti regularly during pregnancy	Yes	85	87.62
	No	12	12.38
	Total	97	100

Lactation Period		**N**	**%**
Received matrushakti packets after delivery regularly	Yes	95	95
	No	5	5
	Total	100	100
Consumption of matrushakti regularly	Yes	83	83
	No	12	12
	Total	95	95

Figure 4.3 Compliance of Matrushakti during ANC and PNC period



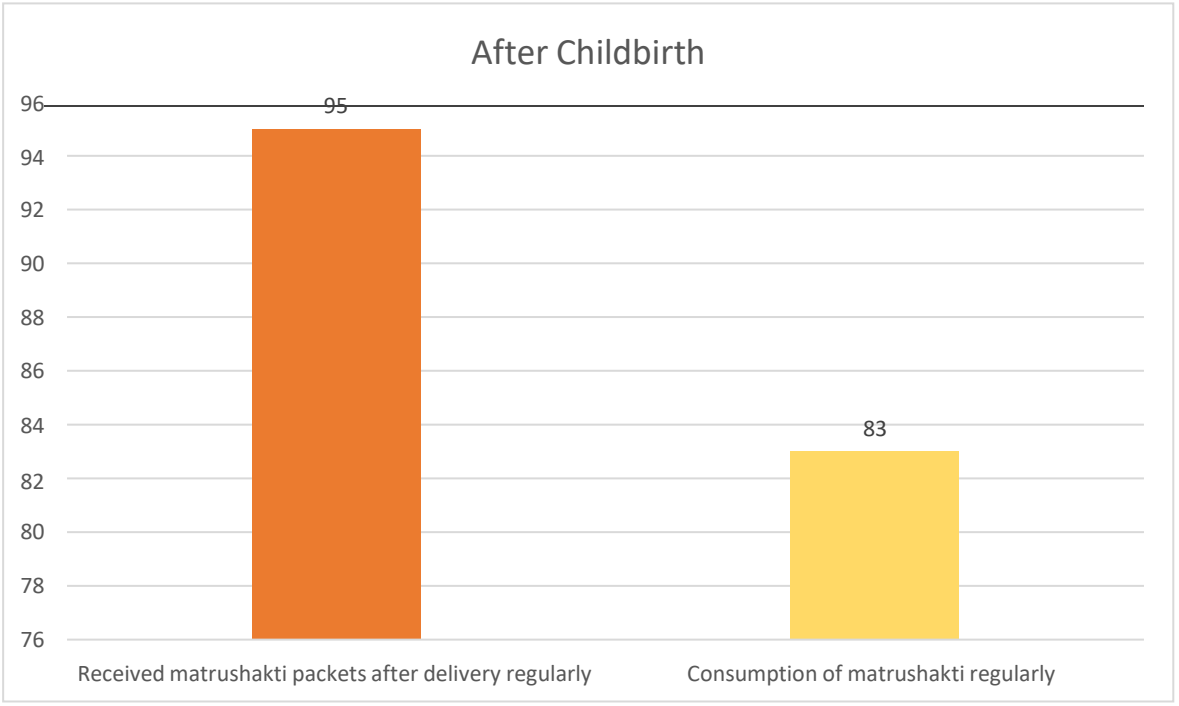


Table 4.5 IFA supplements during pregnancy and after child birth

During Pregnancy		**N**	**%**
Received IFA from AWC regularly	Yes	92	92
	No	8	8
	Total	100	100
Number if IFA received monthly	30	90	97.82
	60	2	2.18
	Total	92	100

Lactation period		**N**	**%**
Received IFA from AWC regularly after childbirth	Yes	94	94
	No	6	6
		100	100
Consumption of IFA tablets after childbirth	Yes	94	94
	Total	94	100

Table 4.6 Calcium supplements given during pregnancy and childbirth

Particulars		**During pregnancy**		**Lactation period**	
		N	%	N	%
Received calcium tablets from AWC	Yes	99	99	96	96
	No	1	1	4	4
	Total	100	100	100	100
Consumption of tablets	Yes	99	99	96	100
	Total	99	100	96	100

Since study focuses on IYCN practices, Knowledge of mothers on selected IYCN practices were also collected and presented in table 4.7. It was found that majority of mothers, 60% that the initiation of breast milk should be done within one hour of life. 61% of mother was aware about colostrum and its importance. Majority of mothers that is 73% of mother opinion not to give pre-lacteals. 75% of women knew that infant should breastfed exclusively for first 6 months. Mothers did not know about most important indicator of adequacy of breast milk i.e., frequency of urination by the child.

It was also thought worthwhile to find out whether enrolled mothers during ANC visits were counselled about IYCN aspects or not.

Data on counselling of mother about IYCN by functionaries is presented in Table 4.8.

94% of women were counselled by IYCN practices by trained functionaries. The majority of mothers that is 90.42% were counselled within the hospital by nurses and doctors.

Data on selected IYCN practices in table 4.9. out of 100 mothers enrolled, 3 mothers could not initiate breastfeeding for reasons like:

1. Severe pain during breastfeeding
2. Severe sore nipples and
3. Milk not coming

Knowledge about IYCN was found to be good so practices of IYCN was also collected. It was found that 61% of women did early initiation of breastfeeding. 75% of mothers fed colostrum to their baby. 47% of mothers were facing difficulties during breastfeeding. 47% of mothers were facing difficulty during breastfeeding. 28% were suffering from sore nipples, 4% were suffering from engorgement, 19% were suffering from redness on breast, 39% were suffering pain during breastfeeding. 73% of mothers did not give pre lacteals to their baby.

Table 4.7 Knowledge of selected Infant and Young Child Nutrition of lactating mothers

Particulars		**N**	**%**
Initiation of breast milk to the baby	Immediately after birth	29	29
	Within 1 hour	62	62
	Don't know	9	9
	Total	100	100
Awareness about colostrum	Yes	61	61
	No	39	39
	Total	100	100
Importance of colostrum	Good for the baby	26	38.80
	Provides energy	27	40.29
	Increases immunity	11	16.41
	Don't know	3	4.47
Pre lacteals given to the child	Yes	27	27
	No	73	73
	Total	100	100
How long infant should be breastfed exclusively	Till 6 months	75	75
	4-6 months	25	25
	Total	100	100
Indication of infant's getting enough milk	Baby stops suckling	77	77
	Urinates (6-8 times)	1	1
	Don't know	22	22
	Total	100	100

Table 4.8 Counselling about IYCN by functionaries

Particulars		**N**	**%**
Counsel of IYCN	Yes	94	94
	No	6	6
	Total	100	100
Counselled by whom	AWW	5	5.31
	ASHA	3	3.19
	FHW	4	4.3
	Government/private hospitals nurses/doctors	85	90.42
	Total	94	100
Place of IYCN counselling	Mamta diwas	1	1.04
	On the day of delivery	60	86.95
	During PNC visit	35	36.95
Aspects of IYCN practices (N=100)	EIBF	87	87
	Colostrum	86	86
	Not to give pre lacteals	95	95
	Breastfeeding positions and techniques	95	95
	EBF	85	85
	Age-appropriate CF	94	94

Table 4.9 IYCN practices followed by lactating mothers (0-6 months)

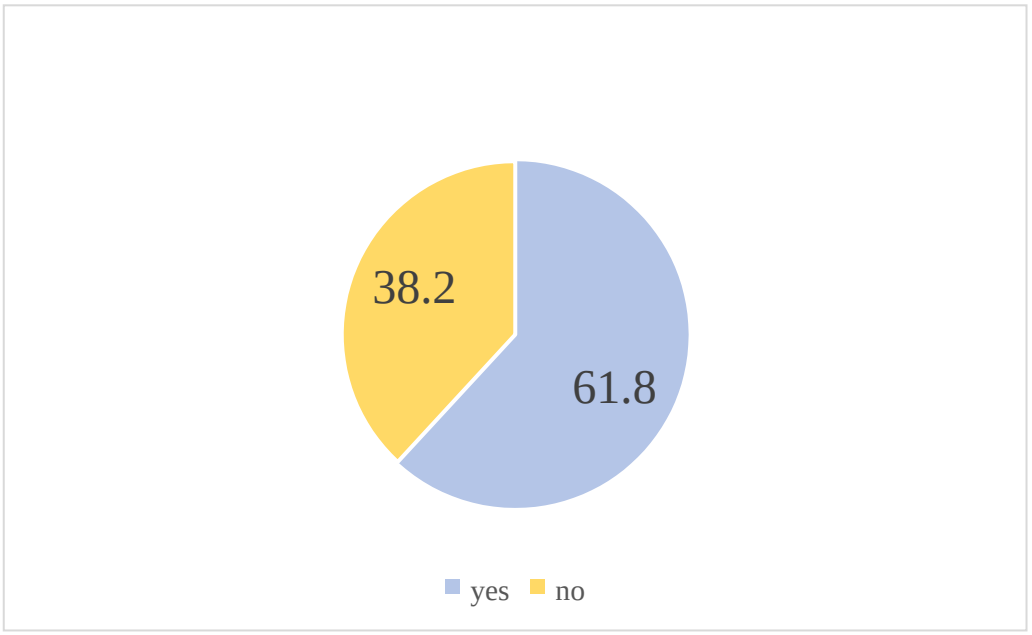
Particulars		**N**	**%**
Early initiation of breastfeeding within 1 hour	Yes	52	53.6
	No	45	46.4
	Total	97	100
Colostrum fed to the baby	Yes	73	75.25
	No	18	18.55
	Don't know	6	6.2
	Total	97	100
Pre lacteals	Yes	27	27
	No	73	73
	Total	100	100
Which pre lacteals was given (N=27)	Animal milk	13	48.14
	Gutti	4	14.81
	Dal water	2	7.4
	Water	3	11.11
	Ghee	5	18.51
Presently breastfeeding your child	Yes	97	97
	No	3	3
	Total	100	100
Reasons for not breastfeeding your child	Insufficient breast milk	1	
	Redness of breast	2	
Beside breast milk what you have given to the infant	Animal milk	3	17.64
	Gutti	4	23.52
	Dal water	2	11.76
	Water	3	17.64
	ghee	5	29.41
	Total	17	100
	2-3 times	10	10.30

Frequency of breastfeeding during day time (N=97)	4-6 times	37	38.14
	7-9 times	30	30.92
	10-12 times	12	12.37
	More than 12 times	8	8.24
	Total	97	100
Frequency of breastfeeding during night time (N=97)	2-3 times	31	31.95
	4-6 times	50	51.54
	7-9 times	11	11.34
	10-12 times	5	5.16
	Total	97	100
Urination of child during the day	2-3 times	2	2
	4-5 times	5	5
	7-8 times	42	42
	10-12 times	44	44
	>12 times	7	7
	Total	100	100
Difficulty during breastfeeding	Yes	46	47.43
	No	51	52.57
	Total	97	100
If yes, what	Sore nipples	13	28.26
	Engorgement	2	4.34
	Redness of breast	9	19.56
	Pain during breastfeeding	18	39.13
	Milk not coming	4	8.6
	Total	46	100
Whom you visit when facing problem during breastfeeding	Government hospital	8	17.4
	Private hospital	10	21.7
	Elderly female in the family	23	50

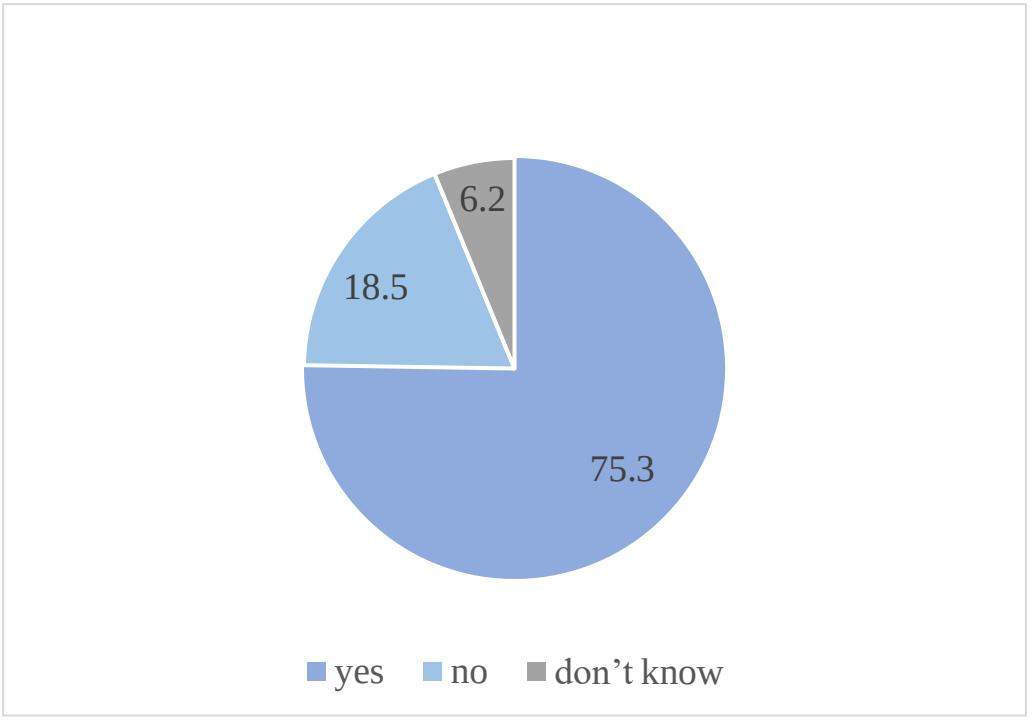
	No one	5	10.9
	Total	46	100
do you clean your breast before and after breastfeeding	Yes	93	95.9
	No	4	4.1
	Total	97	100
With what you clean your breast	Water	88	94.6
	Soup and water	5	5.4
	Total	93	100

Figure 4.4 Practices followed by lactating mothers

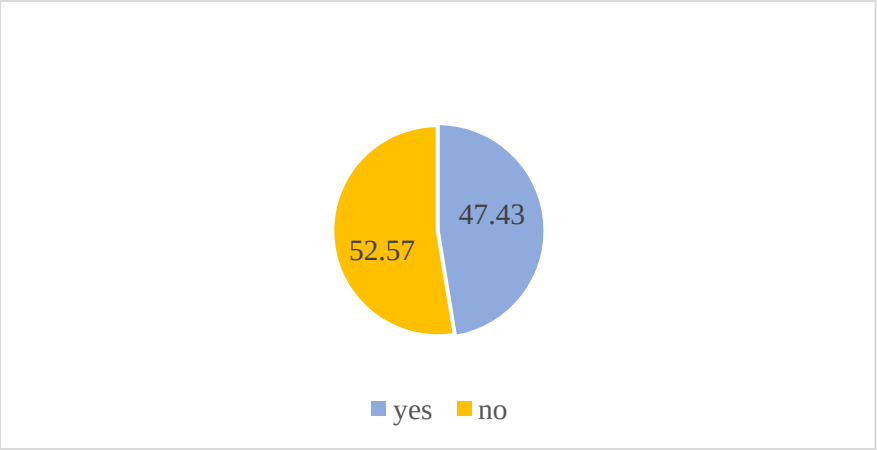
Early Initiation of breastfeeding

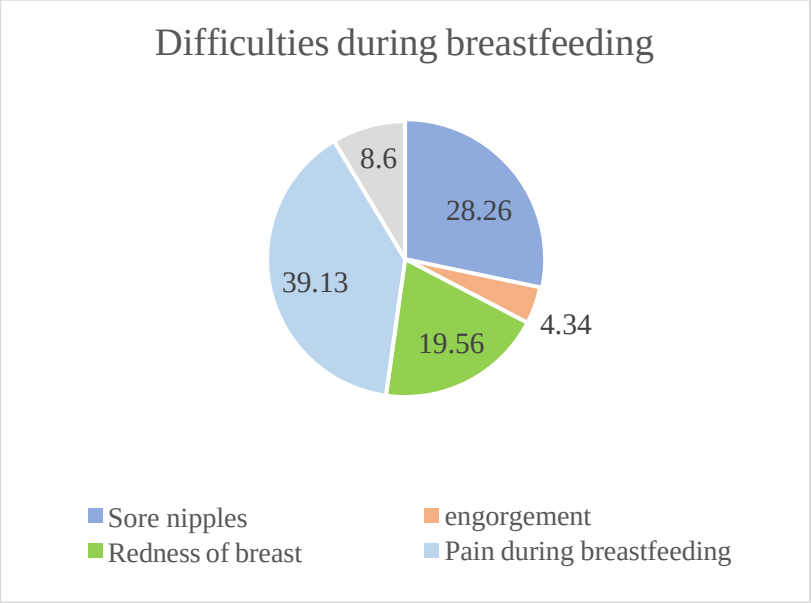


Colostrum feeding

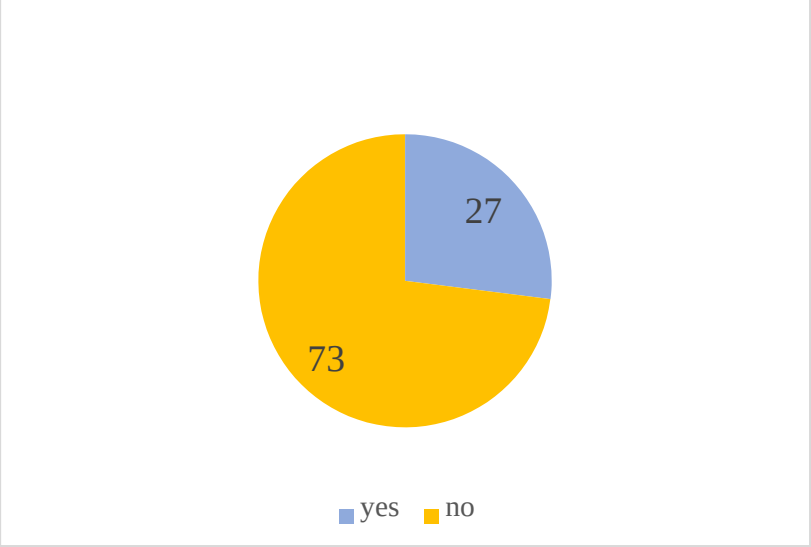


Difficulties during breastfeeding





Pre lacteals given



As you can seen that (figure 4.5) 60% mothers were having knowledge regarding early initiation of breastfeeding but only 53% are following the correct practices. 61% of mothers are having knowledge regarding colostrum but only 58% are following correct practice. 82% mothers are having knowledge regarding pre lacteal but only 73% are following. 60% knew that infant should breastfed exclusively for 6 months but only 44% are following practices. So IYCN practices were found to be sub optimal.

Practice regarding use of galactagogues were also elicited which is discussed in table 4.10. 73% of women were consuming galactagogues like suwa, methi, sudh, gud etc. Frequency of the consumption was daily for majority of the mothers.

Age range of infants is presented in figure 4.6. There were 53% of infants in the age range of 0 – 1 month, 34% of infants in the age range of 2 – 3 months, 13% of infants in the age range of 4 – 5 months.

The age range of AWW was in between 20 to 55 years. 50% of AWW was having experience more than 20 years. All AWW had training of induction, refresher and job. Majority of AWW was trained at Wagodia AWW Training Centre. All anganwadi worker were trained about implementation about THR, Vaccination, IYCN and Poshan tracker. It is presented in table 4.11.

Anganwadi workers are supposed to counsel lactating mothers about IYCN, it was thought worth wile to collect anganwadi workers' profile.

Knowledge of Anganwadi Workers was also collected (Table 4.12) as they are the grass root functionaries to counsel mothers on Community based events.

All anganwadi workers were having knowledge regarding early initiation of breastfeeding, awareness of colostrum, pre lacteals, knowledge of infant is fully breastfed, breastfeeding position and techniques, breastfeeding position, attachment and suckling and exclusive breastfeeding.

Figure 4.5 Knowledge vs Practice followed by Lactating mothers (0-6 months)

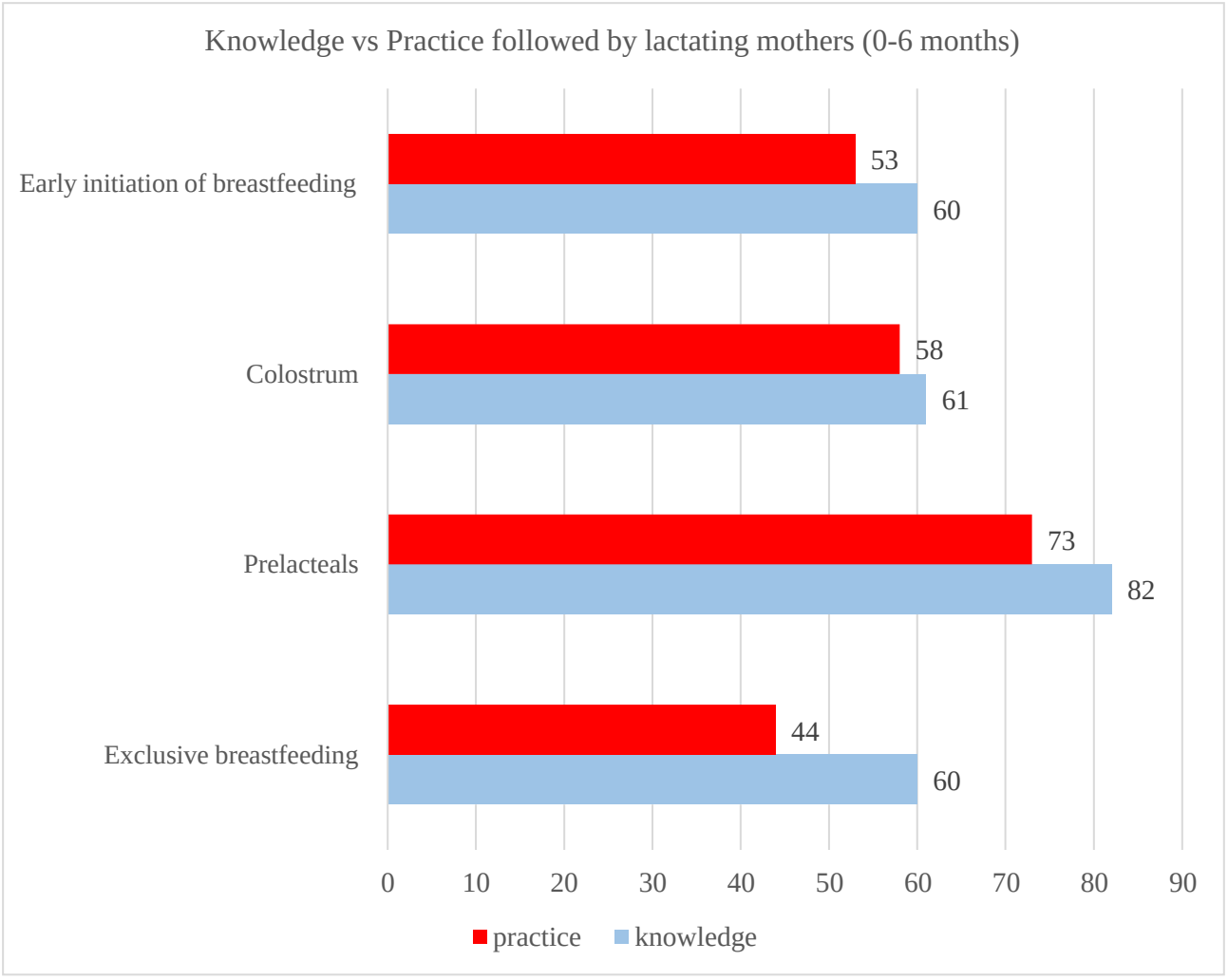


Table 4.10 Use of galactagogues by lactating mothers (0-6 months)

Particulars		**N**	**%**
Consumption of galactagogues	Yes	73	73
	No	27	27
	Total	100	100
If yes what (multiple response)	Suwa	38	38
	Methi	17	17
	Suth	17	17
	Ajma & gud water	6	6
	Khajur	8	8
	Suka mewa (dry fruits)	4	4
	Kopru (dry coconut)	2	2
	Khas khas	2	2
	Dalia	4	4
Frequency of consumption of galactagogues (N=73)	Everyday	32	43.8
	Once in 2-3 day	12	16.4
	Once in 4-5 days	0	0
	Once in a week	2	2.8
	Once in 10 days	0	0
	Once in a month	3	4.1
	Others	24	32.8
	Total	73	100

Figure 4.6 Age range of infant (n = 100)

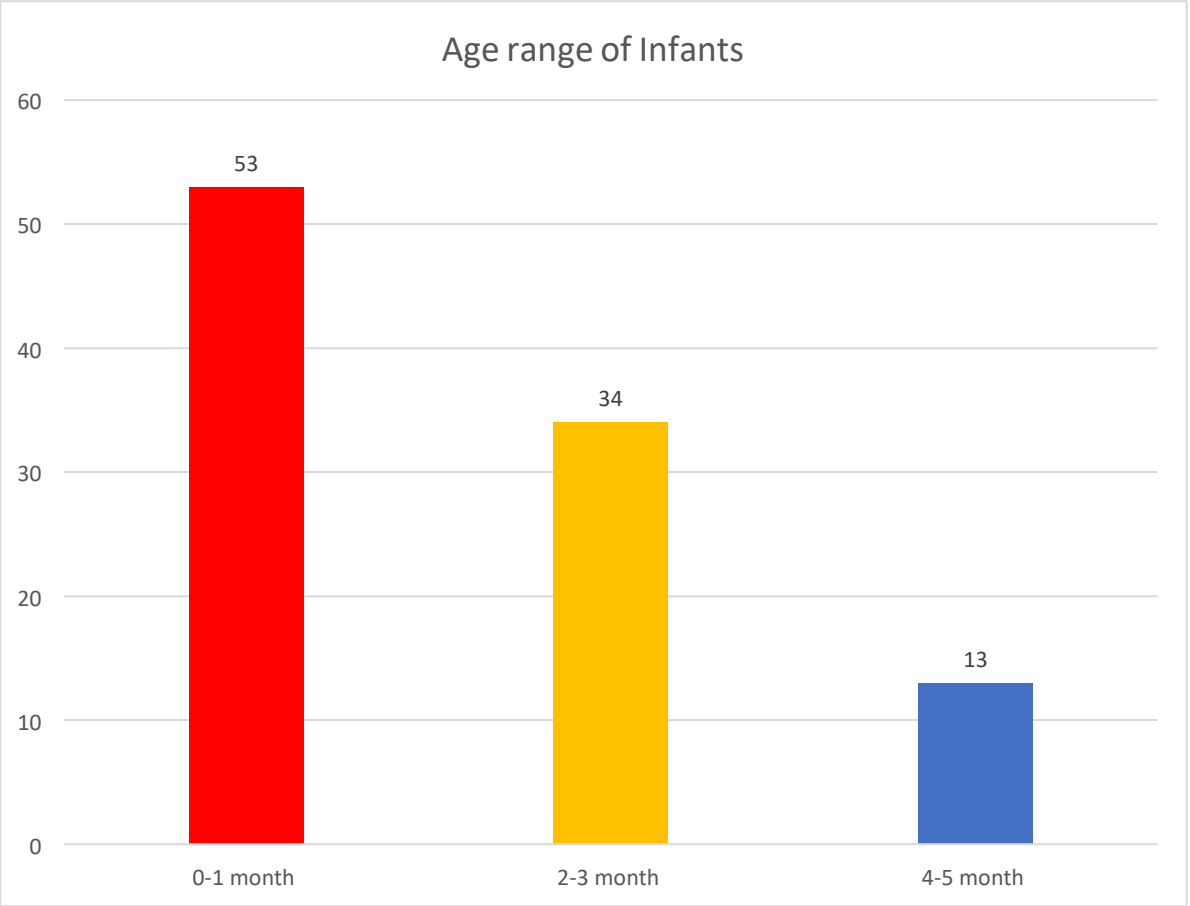


Table 4.11 Profile of Anganwadi workers

Particulars		**N**	**%**
Age range	20 – 30 years	2	16.6
	30 – 40 years	3	25
	40 - 45 years	4	33.3
	45 – 50 years	1	8.3
	>50 years	2	16.6
Experience as AWW	<5 years	1	8.3
	5 – 10 years	0	0
	10 – 15 years	2	16.6
	15 – 20 years	3	25
	>20 years	6	50
Training received	Yes	12	100
Types of Training	Induction	12	100
	Refresher	12	100
	Job	12	100
	All three	12	100
Topics of training	THR	12	100
	Vaccination	12	100
	IYCN	12	100
	Poshan tracker	12	100
Place of training	Waghodia AWW centre	11	83.3
	Others	1	8.3
For how long was your training	<1 month	1	8.3
	1 – 3 months	11	91.6

Table 4.12 Knowledge of Anganwadi Workers

Particulars		**N**	**%**
Were you taught about Breastfeeding position & techniques	Yes	12	100
Early initiation of breastfeeding	Immediately after delivery	12	100
Awareness about colostrum	Yes	12	100
Pre lacteals should be given	No	12	100
Exclusive breastfeeding	Till 6 months	12	100
Knowledge of infant is fully breast fed	Urinates 6 – 8 times	12	100
Positions	1. Infant head and body straight 2. Infants facing the mothers breast with nose opposite the nipples 3. Mother supporting infant's ehole body	12	100
How do you know that attachment is right	1. Chin touching breast 2. Mouth wide open 3. Lower lip turned outward 4. More areola visible above than below the mouth	12	100
How do you know that suckling is proper	Infant taking slow deep sucks, something pausing infant having rapid shallow suck	12	100

Assessment for position, attachment and suckling was examined.

Observation was carried out using IMNCI checklist to assess position, attachment and suckling practice by the lactating mothers. Observation data presented in Table 4.13.

81.4% of mothers kept infant head and body straight. 32.9% of mothers follow the criteria of infant facing the mother's breast with nose opposite to the nipple. Only 34.02% of mothers supports infant's whole body. With regard to position classification Only 18.6% of mothers were in the criteria for good positioning. majority of the mothers were not following proper breastfeeding positioning. with regard to latching practices, Chin touching breast criteria is followed by 72.2% of the mothers. Mouth wide open criteria is followed by 53.6% of mothers. Lower lip turned outward criteria is followed by 22.7% of the mothers. More areola visible above then below the mouth criteria is followed by 18.6% of the mothers. Only 18.6% of mothers were having good attachment criteria.

Table 4.13 Assessment of breastfeeding technique as per Integrated Management of Neonatal and Childhood Illness Guidelines (N = 97)

Pre-Sensitization

Variables (n = 97)	**No.**	**%**
Assessment for position		
Infant head and body straight	79	81.4
Infant facing the mother's breast with nose opposite to the nipple	32	32.9
Mother supporting infant's whole body	33	34.02
Position classification		
Good position	18	18.6
Not well position	72	74.2
Not well position at all	7	7.1
Assessment for latching		
Chin touching breast	70	72.2
Mouth wide open	52	53.6
Lower lip turned outward	22	22.7
More areola visible above than below the mouth	18	18.6
Attachment classification		
Good attachment	18	18.6
Not well attached	64	65.97
No attachment at all	15	15.5
Assessment of effective suckling		
Suckling effectively	19	19.6
Not suckling effectively	78	80.4

Highlights for phase 1

- The average percent response rate was 91.3%.
- Age range of lactating mothers was 18-35 years.
- 52% of mothers were primipara and 48% of mothers were Multipara.
- 100% mothers had live births.
- 5% were Low Birth Weight (Mamta card report).
- All mothers reported about 8 ANC check-ups at UHC.
- During pregnancy 92% of mothers were receiving IFA tablets and after delivery 94% of mothers are receiving IFA tablets.
- During pregnancy 99% of women were receiving and consuming Calcium tablets regularly. After child birth 96 percent of women receiving and consuming Calcium tablets.
- 94% of women were counselled by IYCN practices by trained functionaries. 90.4% mothers were counselled for BFPLS at the place of delivery by nurses and doctors.
- There were 53% of infants in the age range of 0 – 1 month, 34% of infants in the age range of 2 – 3 months, 13% of infants in the age range of 4 – 5 months.
- All AWW had training of induction, refresher and job and on IYCN practices.

Phase 2: Sensitization of lactating mothers (0-6 months)

After observing breastfeeding position, attachment and suckling practiced by mothers, it was thought worth while to sensitize mothers about correct breastfeeding techniques. During observation those mothers who were following right practices were motivated to continue the practices and the mothers who were following wrong practice were counselled on the spot by trained investigator (like AWW).

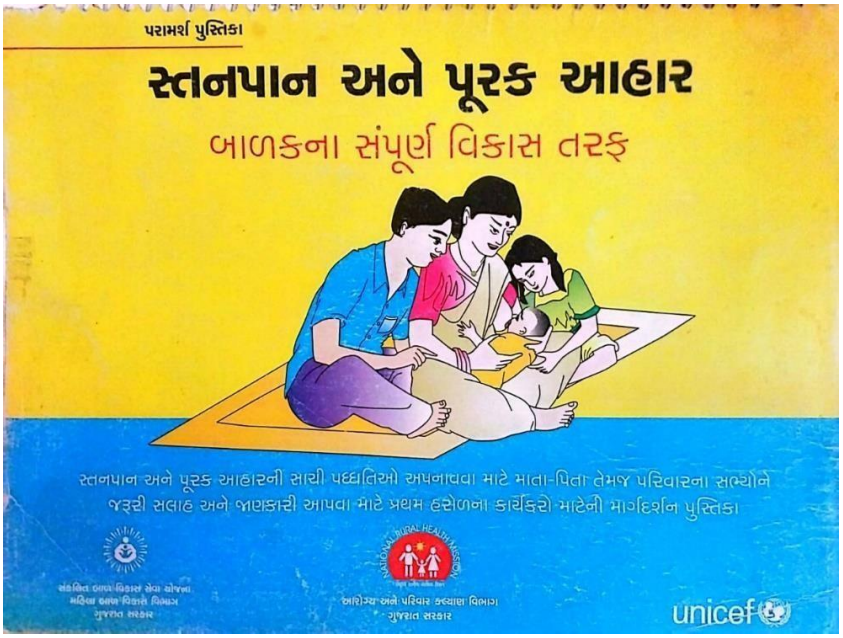
For all mothers a sensitisation workshop was conducted were in 70 mothers were sensitised at UHC and 30 mothers at their respective anganwadi's on community-based events. Trained functionaries AWW/ASHA facilitated sensitization workshop.

Dummy models and IEC material which were used for the sensitisation are depicted below. Sensitization workshop duration was for 2 hours. Total 7 sessions were conducted.

Baby's Model

Breast's Model

IEC material



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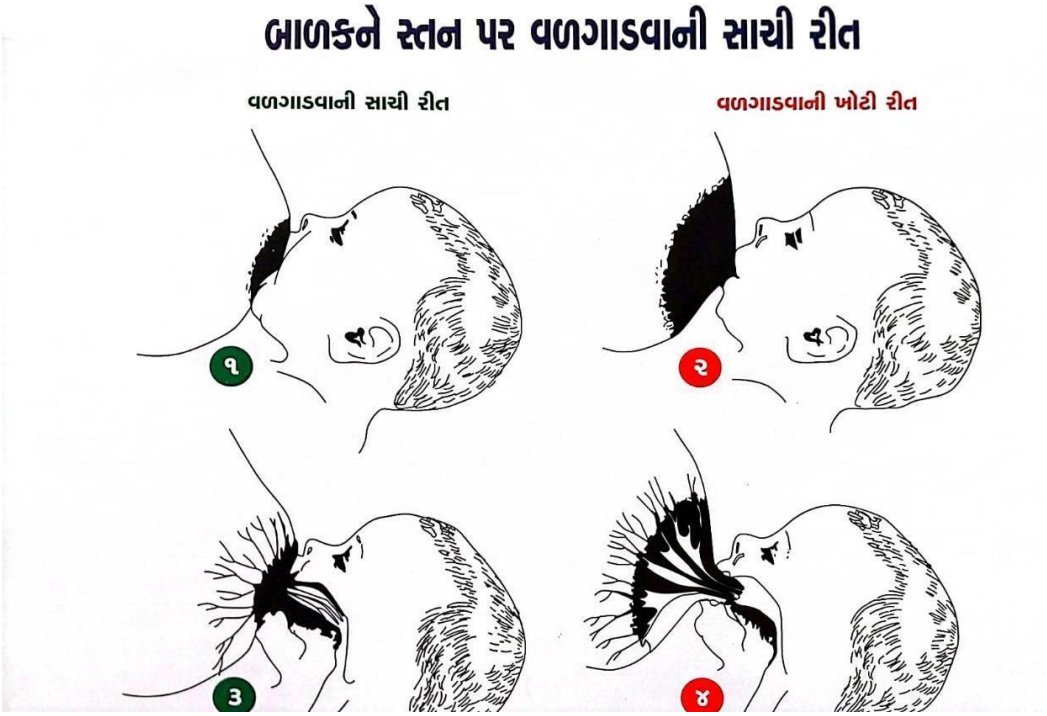
બાળકને સ્તન પર વળગાડવાની સાચી રીત



Highlights of phase 2

- Sensitisation workshops were conducted for were 70 mothers at UHC and for 30 mothers at their respective anganwadi's on community-based events.
- Trained functionaries AWW/ASHA facilitated sensitization workshop.
- Dummy models and IEC material which were used for the sensitisation are depicted below.
- Sensitization workshop duration was for 2 hours/session. Total 7 sessions were conducted.

Phase 3: Observation of lactating mothers (0-6 months) after sensitization on breastfeeding position and technique

After sensitization workshop again observation was carried out to assess change in breastfeeding position, attachment and suckling carried out by mothers. Observation data is presented in 4.14.

Assessment of position, attachment and suckling was examined.

79% of mothers kept infant head and body straight. 32% of mothers did infant facing the mother's breast with nose opposite to nipple. 33% mothers supporting infant's whole body. Only 18% of mothers were in good position. 70% of mothers follow chin touching breast criteria. 52% of mothers did mouth wide open. 22% of mothers met with criteria that is lower lip was turned outwards. 18% of mothers follow more areola visible above than below the mouth. Only 18% of mother's did good attachment. 19% of infants were suckling effectively.

Evaluation of breastfeeding position, attachment and suckling was done based on IMNCI guideline and based on Davra et al (2022). Comparison of breastfeeding position, attachment and suckling pre and post sensitization workshop is presented in table 4.16.

Significant improvement was found in Breastfeeding positioning, attachment and suckling. During pre-sensitization good positioning was observed only in 18% of mothers whereas post sensitization it was observed in 50% of mothers. Similar observation were for good attachment and suckling.

Comparison of good positioning, attachment and suckling was analysed for primipara and multipara mothers in table 4.15. None significance was found for good positioning, attachment and suckling between primipara and multipara mothers.

Factors related to mother for positioning, attachment was analysed which is presented in Table 4.17.

Various factors like mother's age, education of mother, type of family, parity and pregnancy term were analysed and it was found that minimal difference was found for good positioning, attachment and suckling of the mothers.

Table 4.14 Assessment of breastfeeding technique as per integrated management of neonatal and childhood illness guideline (N=100)

Post sensitization

Variables (n = 100)	**No.**	**%**
Assessment for position		
Infant head and body straight	79	79
Infant facing the mother's breast with nose opposite to the nipple	32	32
Mother supporting infant's whole body	33	33
Position classification		
Good position	18	18
Not well position	72	72
Not well position at all	7	7
Assessment for latching		
Chin touching breast	70	70
Mouth wide open	52	52
Lower lip turned outward	22	22
More areola visible above than below the mouth	18	18
Attachment classification		
Good attachment	18	18
Not well attached	64	64
No attachment at all	15	15
Assessment of effective suckling		
Suckling effectively	19	19
Not suckling effectively	78	78

Table 4.15 Breastfeeding positions, attachment and suckling

particulars	Evaluation	pre sensitization (N=97)		post sensitization (N=100)		P-value*
		frequency	percentage	frequency	percentage	
Positions	Good position	18	18.6	40	40	*0.002
	poor position	74	76.3	54	54	
	not good position at all	5	5.16	6	06	
Attachment	good attachment	18	18.6	40	40	*0.02
	poor attachment	64	65.9	47	47	
	not good attachment at all	15	15.5	13	13	
Suckling	Proper suckling	19	19.6	39	39	*0.002
	Not proper suckling	78	80.4	61	61	

* significant ($p<0.05$)

Table 4.16 Comparison of good positioning, attachment and suckling was analysed for primipara and multipara mothers

PARTICULARS	PRE OBSERVATION				POST OBSERVATION				
	Primipara		Multipara		Primipara		Multipara		p value
	n	%	n	%	n	%	n	%	
Good position	11		7		22	22	18	18	0.6
Infant head and body straight	41	42.2	38	39.2	46	46	40	40	0.4
Infant facing the mother's breast with nose opposite to the nipple	19	19.6	13	13.4	27	27	24	24	0.5
Mother supporting infant's whole body	17	17.5	17	17.5	26	26	24	24	0.8
Good Attachment	11	11.3	7	7.2	23	23	17	17	0.2
Chin touching breast	38	39.2	32	32.9	43	43	35	35	0.3
Mouth wide open	25	25.8	27	27.8	33	33	34	34	0.0001
Lower lip turns outward	11	11.3	11	11.3	23	23	19	19	0.7
More aerola visible above than below the mouth	11	11.3	7	7.2	22	22	17	17	0.7
Suckling	12	12.4	7	7.2	20	20	17	17	0.5
Infant taking slow deep sucks, something pausing infant having shallow sucks	12	13.4	8	8.2	23	23	17	17	0.8

Table 4.17 Factors related to mother affecting position and attachment

Category	**n**	**Good position**		**Good attachment**	
Mother's age		n (%)	%	n (%)	%
18-23	28	5	17.8	5	17.8
24-29	61	11	18.0	11	18.0
30-35	11	2	20	2	20
Education					
Illiterate	15	2	13.3	2	13.3
Primary	55	1	18.1	8	14.5
Secondary	15	3	20	4	26.6
Higher secondary	11	3	27.2	4	36.6
Graduate	1	1	100	1	100
Post graduate	3	1	33.3	1	33.3
Type of Family					
Nuclear	11	2	18.1	1	9.1
Joint	83	16	19.2	15	18.1
Extended nuclear	6	2	33.3	3	50
Parity					
Primipara	53	11	20.7	12	22.6
Multipara	47	7	14.5	10	20.8
Pregnancy Outcome					
Pre term	7	3	42.8	2	28.5
Full term	93	15	16.1	16	17.2

Highlight of phase 3

- Only 18% of mother's had good position, attachment and suckling practices.
- Significant improvement was found in Breastfeeding positioning, attachment and suckling in post sensitization workshop (from 18% to 40%).

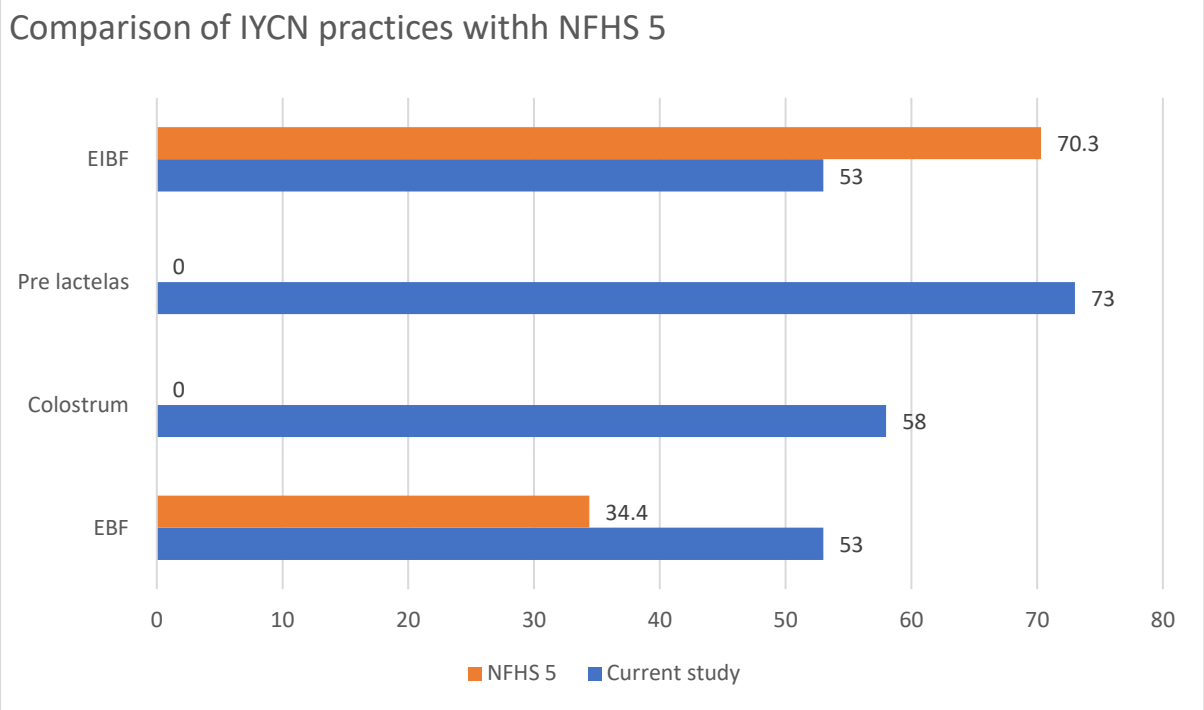
DISCUSSION

This is first representative urban based community-based study from Vadodara documenting the practice of breastfeeding technique among mothers before and after sensitization by trained functionaries.

The main focus of the study was to understand knowledge and practices of enrolled mothers And to observe mothers about their positioning, attachment and suckling of neonates.

In current study, selected IYCN practices were also elicited. It is compared with latest NFHS-5 data. It is presented in 4.7

Figure 4.7 Comparison of IYCN practices with NFHS data



As can be seen from the figure 4.7 IYCN practices like EIBF, pre lacteals, colostrum EBF has shown improvement in the current study. All the mothers had did all 8 ANC check-ups at UHC and they may be counselled by any functionaries.

In the present study knowledge about IYCN was found to be good so practices of IYCN was also collected. It was found that 61% of women did early initiation of breastfeeding. 75% of mothers fed colostrum to their baby. 47% of mothers were facing difficulties during breastfeeding. 47% of mothers were facing difficulty during breastfeeding. 28% were suffering from sore nipples, 4% were suffering from engorgement, 19% were suffering from

redness on breast, 39% were suffering pain during breastfeeding. 73% of mothers did not give pre lacteals to their baby.

According to NFHS 5 data it was observed that children had early initiation of breastfeeding within one hour is equals to 44.6%. In our study the early initiation of breastfeeding is 53.6%.

The Present study found that before sensitization breastfeeding position and technique by trained functionaries only 18.6% of mothers were practicing good position, 18.6% were following good attachment and 19.9% were following good suckling. After sensitization of lactating mothers in Urban Health Centre and Anganwadi Centres there was improvement was seen. After sensitization 40% of mothers were following correct position, 40 percent were following good attachment and 39% were following good and proper suckling.

Earlier studies have reported the breastfeeding technique assessment at hospital or community settings from India and other places. most Indian studies have used IMNCI guidelines has reference while studies from outside India have used either WHO breastfeeding assessment guideline or self-created checklist.

Prajapati et al (2022) study indicates that a mostly (80%) of multiparous mothers had good position and attachment, which could be the outcome of their earlier practice. Rahim et al reported Primiparous women were poorer in position (64% against 38.5%), bonding (50% against 22%), and suckling (59% against 22%) in comparison to multiparous.

Prajapati et al (2022) study found that the major source of information regarding breastfeeding technique was doctors (57%) followed by mothers (16%). Haider et al found that major providers of infant feeding information were grandmothers (28%). Present study had also similar findings.

Davra et al Studied that the infant needs to be breastfed at least 8 – 12 times in 24 hours. When they enquired about the frequency of breastfeeding to the mothers had given day time breastfeeding for more than 8 times. Night time breastfeeding is important to prevent hypoglycaemia in the child and for the weight gain. Very few studies in India, have reported the frequency of breastfeeding in 24 hours. A study done by Noor et al in urban slums of Rourkela, reports that frequency of feeding was more than 8 times in 54% of the mothers.

Santo et al from Porto Alegre, Brazil reported that poor attachment technique was associated with early termination of exclusive breastfeeding. “Good attachment” was observed among

42% of infants and 60% mothers held infant in “correct position” in study carried out by Sai et al (2022) in North India.

Davra et al study found that gender of the child (male) was found to be significantly associated with EBF on multivariate analysis indicating that the odds EBF was twice in male child as compared to female child. This finding was directly highlights one of the important social issues of gender inequality. Moreover, odds of EBF were almost 3 times higher among mothers who received information about breastfeeding as compared to those who did not receive any such prior information. This indicates that information by health care providers about EBF during antenatal and post-natal care is likely to improve feeding practices of the mothers. Similar study finding was observed in a study done by Sanghore et al., showing significant association between EBF and predictors like counselling by health care providers.

Essa et al (2021) found about and more than 2/3rds (73.7% and 63.7%) of respondent had poor body position and poor attachment grade respectively. While no one of them (0.0 and 0.0) had either good body position or attachment grade.

Inappropriate breastfeeding position and attachment were the major problems (12 to 15%). A study by Mannan et al (2020) found 74% infants were in correct breastfeeding position while good attachment was found in 72.3% infants.

Thakre et al (2022) observed that during breastfeeding chin touching to the breast in 51.92% infant, lower lip turned outward in 36.64% infant, baby’s mouth is widely open in 58.65% infant, more areola visible above than below in 26.92% infant. Poor positioning of breast and poor attachment were documented at 24 hours after birth.

Gupta et al (2018) found in North India only 9.7% had correct attachment technique and 0% had correct positioning technique and also observed 45.2% child had deep and well suckling reflex. Shrivastav et al reported 41.2% babies were well attached and 47.4% babies were correctly positioned in their study conducted in West Bengal. Parashar et al found correct attachment and positioning was in 7.5% of the mothers in an urban resettlement colony located in East Delhi.

In present study major source of information regarding breastfeeding technique was doctor and nurses (90%). Haider et al found that major providers of infant feeding information were grandmothers (28%).

Other comparable study by Coca et al (Sao Paublo, Brazil) and Kronborg et al reported that parity was significantly associated with position and attachment. However, Gupta et al from North India did not find any statistically significant association between parity, age of baby, literacy of mothers and effective breastfeeding.

The present study indicates that pre term infants had poor attachment and suckling. Rahim et al found that preterm babies had poorer position, attachment and suckling as compared to full term babies. The association between gestational age and position, attachment and suckling ($p>0.05$) were not statistically significant. Costa et al study mentioned that it is unclear whether poor suckling is part of their prematurity or whether it is caused by neurological problems.

Rana et al observed that infants with low birth weight had poor attachment and poor suckling. The study was able to reveal the association between maternal and effective suckling during breastfeeding. However, it might be possible to recognize other factors with bigger sample size.

Chavda et al study found that the majority of mothers (75%) received information about breastfeeding, out of them nearly half of the mothers received information from nursing staff and very few mothers received it from front line health workers like auxillary nurse midwife or anganwadi worker. There is wide variation in knowledge about breastfeeding received the by the mothers from 3.8% to 40% in different studies conducted in different settings.

SUMMARY AND CONCLUSION

SUMMARY AND CONCLUSION

World Health Organization (WHO) recommends Early initiation of breastfeeding and Exclusive Breastfeeding (EBF) for the first 6 months of life. Breastfeeding is important for survival, growth and development, health and nutrition of infants and confers from physiological to psychological benefits to both child and mother.

Exclusive Breastfeeding is crucial for attaining POSHAN ABHIYAN targets and SDG goal 3.

The study was approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The study has been allotted ethical approval number **IECHR/FCSc/MSc/2022/34**.

The present study was conducted with **broad objective** - to understand the knowledge and practices among lactating mothers on breastfeeding techniques and positions.

The **specific objectives** were:

1. To assess socio demographic data of lactating mothers (0-6 months).
2. To assess knowledge and practices of lactating mothers (0 – 6 months) regarding selected Infant and Young Child Nutrition (IYCN) practices.
3. To collect information of lactating mothers (0 – 6 months) on utilization of selected ICDS services during Ante Natal Check-up & Post Natal Check-up.
4. To assess breastfeeding positions and techniques of enrolled mother.
5. To sensitize lactating mothers (0 – 6 months) on breastfeeding positions and techniques.
6. To study the impact of sensitisation on breastfeeding position and techniques in enrolled lactating mothers.

HIGHLIGHT OF THE FINDINGS

- The study was conducted in Anganwadi's of Gorwa, Urban Health Centre (UHC), Vadodara.
- There are 34 UHC's in Urban Vadodara out of which 1 UHC was purposively selected where there were maximum number of lactating mothers (0-6 months) can be enrolled.

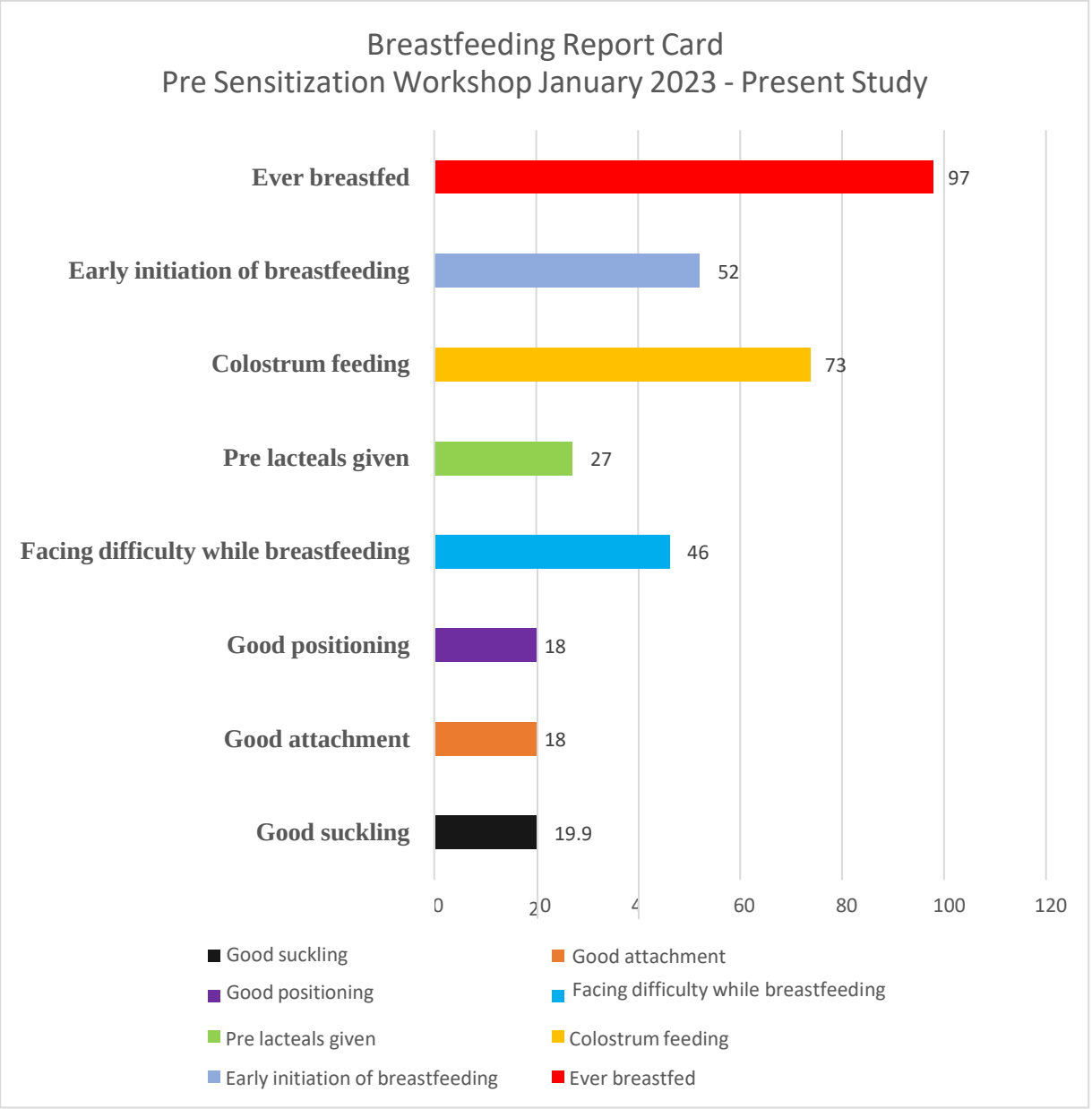
- A community based observational descriptive study was conducted in Urban Vadodara, Gujarat.
- Anganwadi Workers were also interviewed for understanding their trainings in IYCN and knowledge about IYCN practices.
- Anganwadi workers /ASHA worker accompanied to assess breastfeeding position and technique at the mother's place.
- The breastfeeding process was observed for 5 min to assess the mother and infant's position, attachment to the breast and effective suckling.
- The mothers who lack the knowledge and were following wrong practices were counselled after observation by trained ASHA/ANM using IMNCI guidelines and with the help of dummy models / pictures base.
- All the mothers who received interpersonal counselling were called into the UHC for reinforcement about correct Breastfeeding positions and techniques.
- Dummy models and a UNICEF booklet were used together with a trained ASHA who had received IMNCI training to provide counselling.
- Mothers who couldn't visit the UHC were counselled at their local Anganwadi Centre's using similar IEC materials after sensitization.
- All 100 lactating women were observed on-site. Spot observation was used to check their practices.
- The average percent response rate was 91.3%.
- Percent response rate was in the range of 70 – 100%.
- Age range of lactating mothers was 18-35 years.
- 55% of mothers reported their education up to primary level.
- 83% of the mothers was living in Joint families.
- 94% of the mother were housewives at the time of survey.
- 52% of mothers were primipara and 48% of mothers were Multipara.
- 93% of lactating mothers had delivered at full term.
- 100% mothers had live births and 5% were Low Birth Weight (Mamta card report).
- All mothers reported about 8 ANC check-ups at UHC.
- 92% of mothers had revealed IFA tablets and 97% of mothers had got Matrushakti THR.

- During pregnancy 97% of mothers were receiving matrushakti packets and 87.62% of mothers were consuming matrushakti packets, received from their respective anganwadi centre.
- After childbirth 95% of mothers were receiving matrushakti packets and 83% of mothers were consuming matrushakti packets regularly.
- During pregnancy 92% of mothers were receiving IFA tablets and after delivery 94% of mothers are receiving IFA tablets.
- During pregnancy 97.8% of women are getting 30 tablets every month.
- During pregnancy 99% of women were receiving and consuming Calcium tablets regularly.
- After child birth 96 percent of women receiving and consuming Calcium tablets.
- It was found that majority of mothers, 60% that the initiation of breast milk should be done within one hour of life.
- 61% of mother was aware about colostrum and its importance.
- 73% of mother opinion not to give pre-lacteals.
- 75% of women knew that infant should breastfed exclusively for first 6 months.
- 94% of women were counselled by IYCN practices by trained functionaries.
- The majority of mothers that is 90.42% were counselled within the hospital by nurses and doctors.
- It was found that 61% of women did early initiation of breastfeeding.
- 75% of mothers fed colostrum to their baby.
- 47% of mothers were facing difficulties during breastfeeding.
- 47% of mothers were facing difficulty during breastfeeding.
- 28% were suffering from sore nipples, 4% were suffering from engorgement, 19% were suffering from redness on breast, 39% were suffering pain during breastfeeding. 73% of mothers did not give pre lacteals to their baby.
- 60% mothers were having knowledge regarding early initiation of breastfeeding but only 53% are following the correct practices.
- 61% of mothers are having knowledge regarding colostrum but only 58% are following correct practice.
- 82% mothers are having knowledge regarding pre lacteal but only 73% are following.

- 60% knew that infant should breastfed exclusively for 6 months but only 44% are following practices. So IYCN practices were found to be sub optimal.
- There were 53% of infants in the age range of 0 – 1 month, 34% of infants in the age range of 2 – 3 months, 13% of infants in the age range of 4 – 5 months.
- The age range of AWW was in between 20 to 55 years.
- 50% of AWW was having experience more than 20 years.
- All AWW had training of induction, refresher and job.
- Majority of AWW was trained at Wagodia AWW Training Centre. All anganwadi worker were trained about implementation about THR, Vaccination, IYCN and Poshan tracker.
- All anganwadi workers were having knowledge regarding early initiation of breastfeeding, awareness of colostrum, pre lacteals, knowledge of infant is fully breastfed, breastfeeding position and techniques, breastfeeding position, attachment and suckling and exclusive breastfeeding.
- The average percent response rate was 91.3%.
- Age range of lactating mothers was 18-35 years.
- 52% of mothers were primipara and 48% of mothers were Multipara.
- 100% mothers had live births.
- 5% were Low Birth Weight (Mamta card report).
- All mothers reported about 8 ANC check-ups at UHC.
- During pregnancy 92% of mothers were receiving IFA tablets and after delivery 94% of mothers are receiving IFA tablets.
- During pregnancy 99% of women were receiving and consuming Calcium tablets regularly. After child birth 96 percent of women receiving and consuming Calcium tablets.
- 94% of women were counselled by IYCN practices by trained functionaries. 90.4% mothers were counselled for Breastfeeding position, attachment and suckling at the place of delivery by nurses and doctors.
- There were 53% of infants in the age range of 0 – 1 month, 34% of infants in the age range of 2 – 3 months, 13% of infants in the age range of 4 – 5 months.
- All AWW had training of induction, refresher and job and on IYCN practices.
- Sensitisation workshops were conducted for were 70 mothers at UHC and for 30 mothers at their respective anganwadi's on community-based events.
- Trained functionaries AWW/ASHA facilitated sensitization workshop.

- Dummy models and IEC material which were used for the sensitisation are depicted below.
- Sensitization workshop duration was for 2 hours/session. Total 7 sessions were conducted.
- Only 18% of mother's had good position, attachment and suckling practices.
- Significant improvement was found in Breastfeeding positioning, attachment and suckling in post sensitization workshop (from 18% to 40%).

Breastfeeding Report Card



CONCLUSION

It can be concluded that knowledge and practices of selected IYCN practices were found to be sub optimal. At baseline, only 18% mothers had practiced correct positioning and technique for breastfeeding. Proper counselling with IEC and dummy model facilitated the correct breastfeeding position and techniques.

RECOMMENDATION

RECOMMENDATIONS

- As per the finding of current study optimal counselling about breastfeeding position, attachment and suckling should be provided to the beneficiaries more frequently during last trimester of gestation and after post-partum of 15 days.
- In the current study information was gathered that during counselling of mothers no IEC material & dummy models were not used so it is recommended that AAA functionaries should be provided with appropriate IEC material for counselling.
- In the current study, mothers reported that they were mot counselling during home visits about IYCN so it can be recommended that AAA functionaries should be strengthen home visits for appropriate IYCN counselling.

LIMITATIONS

- Current study could not observe correct breastfeeding position on the day of delivery and also number of observations were limited
- Time duration for observation for 5 minutes as mothers didn't give consent for longer duration.

POLICY IMPLICATIONS

- Data collected from the study will help in sensitizing authorities of ICDS program and middle level program manager to monitor AAA functionaries training on IYCN and its implementation.
- MPR (Monthly Progress Report) should include aspects on correct breastfeeding positions and techniques data to improve Exclusive and to attain SDG goal 3 timely.

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APPENDIX

APPENDIX 1 – PERMISSION LETTER

DEPARTMENT OF FOODS AND NUTRITION
FACULTY OF FAMILY & COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA 390 002 – INDIA

Phone : } 0265-2795526
Tele. } 0265-2795522 [Ext.33]
Grams : } "HOMSCIENCE"

No. F. C. Sc./ FND /

Date: 01/11/2022

To
Dr. Sejal Soni
Medical Officer, UPHC, Gotri
Vadodara, Gujarat 390008

Respected ma'am,

Greeting from the department of foods and nutrition!

My student Miss Palak Nilesh Bhagat, Student of Senior Masters Public Heath Nutrition, Department of Foods and Nutrition, The Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda is working on: "Knowledge & practices of Lactating mothers (0 – 6 months) on breastfeeding position and techniques of Urban Vadodara and impact of Sensitization on it".

We would like to collect information related to breastfeeding positions and techniques used by lactating mothers (0 – 6 months) in the area of Gorwa who has registered themselves in the Anganwadi Centres under your UHC. We would like to enrol all the lactating mothers under Angawadi centres of UHC Gorwa. The data will be collected from mothers after getting consent. After collecting basic information and their knowledge and practices about breast feeding, we would like to conduct 1 day sensitization program for functionaries as well beneficiaries.

This study is completely for MSc dissertation. The data collected will be confidential. The data will be stored in the university itself.

It is my humble request to grant permission to let my student for data collection. A report will be submitted to your office after completion of the study.

Hoping for your positive response.

Thanking you

Yours Sincerely,

H. J. Gandhi

Dr Hemangini Gandhi
Assistant Professor (CES)
Department of Foods and Nutrition

Dr. Tejal Patel

APPENDIX 2 – ETHICAL CERTIFICATE

Institutional Ethics
Committee for Human
Research
(IECHR)

FACULTY OF FAMILY AND COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Ethical Compliance Certificate 2022 – 2023

This is to certify that Ms. Palak Nilesh Bhagat's study titled, **"Knowledge & practices of lactating mothers (0 – 6 months) of urban Vadodara regarding breastfeeding position & techniques and impact of sensitization in it"** from Department of Foods and Nutrition has been approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Science, The Maharaja Sayajirao University of Baroda. The study has been allotted the ethical approval number **IECHR/FCSc/MSc/2022/34.**

Prof Mini Sheth
Member Secretary
IECHR

Prof Shagufa Kapadia
Chairperson
IECHR

Chair Person
IECHR
Faculty of Family & Community Sciences
The Maharaja Sayajirao University of Baroda

APPENDIX 3 – CONSENT FORM

ધાનનાા વલણ અનાે સ્તનપાાન કરાાવતાા માાતાાઓ કાે જાેનાું બાળક 0 થાા 6 મહિનાાનાા વચ્ચાેનાા વચનાું
િાાાા ય તાેનાા

પ્રાેક્ટ િાાાાસ વત ફ મમ

વિશાેનાા

માાહિાાતાા

માાિાાાે સમ

અભ્યાાસ શાાર્ષક:

સ્તનપાન કરાાવતાા માાતાાઓમાા સ્તનપાાનનાા તકનાાકાે અનાે પ્રિાાતઓ
વિશાેનાા જ્ઞાાન, વલણ અને વ્યવહારને સમજવા માટે.s

વપરાશસપલ ઇસવાેક્સ્િાાગાે િાાર:

S હમાગાનાા ગાધા

સશ ધક:

પલક તનલેશ ભગત

તસ્ટનયર માાસ્ટસ, પબલાક હે િાાન

િાાશન ડાપાટમાેન્ટ ઓફ ફૂડ્સ એન્ડ ન

િાાશન

િાઈ મહાારાાજા સયાાજીરાાઓ યાુનવસ્ટા ઓફ બરાોડા

વડ દરા, રાાત, ઇાડયા
ગજ

:
અભ્યાાસ
ન
ાા
િાાા
ત

દાેપાાઈટમેન્ટ ઓફ ફૂડ્સ એન્ડ ન િાાશન, મ.સ. યાુનવસ્ટા દ્વાારાા ધાારાા માાતાાઓ નાા બાદ
અનાેશશ આહાાર અગાેનાા

જાાણકાારાા ાર લાાવાા ાધન આપવાામાા છાે. આ માાટાે અમનાે ૧૦૦ જાેટલાા ધાારાા
અનાે એમાા માટે આ સશ આવાેલ
સધ

માાતાાઓ કાે જાેમનાા બાળક ૦ - ૬ માહનાા નાા હાે ઈ તાેમનાે સધાધન માા કરવાા માા આવાુય છાે. અનાે
સાામાેમનાે બાદ

અનાેશશ આહાાર વિષાે કાેટલાા જાાણકાારાા છાે એ જાાનવય છાે.અનાે આ માાટાે
અમાે તમનાે િાાા ડાાક પ્રા પછાશ, જાેમાા

અમન્ે જ઼ાનવય છ્ે ક્ે તમ્ે ક્ેવ ર઼્તે બ્ાળક્ ન્ે કરવ્ છ્ . અન્ે તમન્ે સરખ઼ા ર઼્તે ધવડ કરવ્ાન પણ ાસખડસ અન`

એમ્ા એવ઼ા ર઼્તે સધ્ાર લ્ાવ્ ત્ે પણ તમન્ે સ઼ાખવ્ાડસ અન્ે આ બધ વસ્્ત ન઼ા ન્ ્ધણ઼ા કરવ્ા મ્ા આવશ્.

આ અભ્યાશ મ્ા જ્ ડ્ાવ્ા મ્ાટ્ે ખર઼ આપવ્ામ્ા આવશ્ે ન઼ાહ ન્ા હ્ા લ્ેવ્ા મ્ા આવશ્ે.

અભ્યાસન
ા ર઼ા
ા
ક઼ા લ

જ઼ તમ઼ે અભ્યાસમ઼ા જ઼ ડ઼ાઓ છ઼ , ત઼ અમન઼ે તમ઼ાર઼ા
અન઼ે તમ઼ાર઼ા બાળક તવશ઼ે ઼઼ ડ઼ા પ્રશ્ન઼
પછ

વ઼ામ઼ા આવશ઼ે અન઼ે

તમન઼ે સ્તનપ઼ાનન઼ા તકન઼ાક઼ અન઼ે તમ઼ે પ્રેક્ટસ કર઼ા રહ઼્ા છ઼ ત઼ે સુ઼સ઼ ઼઼તત
બત઼ાવવ઼ા મ઼ાટ઼ે તમન઼ે કહવ઼ામ઼ા આવશ઼ે

સભતવત લાભ

તમ઼ે સ્તનપ઼ાનન઼ા સુ઼સ઼ ઼઼તત અન઼ે ય઼ ગ્ય તકન઼ાક઼ તવશ઼ે ય઼ ગ્ય જ્ઞ઼ાન મ઼ેળવશ઼ જ઼ે તમ઼ાર઼ા
બાળક મ઼ાટ઼ે ફ઼ાયદ઼ાક઼ારક રહશ઼ે.

આ અભ્યાસમ઼ા તમ઼ાર઼ા તવત જ઼ ળ઼ાય઼ેલ ન ઼઼઼.
ખમ સક

સહભ઼ાગગત઼ા સ઼્ા ઼઼઼ે ક઼ ઈ

સભ પનાયતા

અભ્યાસમાં તમારી ઓળખ ગુપ્ત રાખવામાં આવશે. અભ્યાસના પરિણામો વૈજ્ઞાનિક હતઓ માટે પ્રકાશિત થઈ

શકે છે પરંતુ તે કરશે નહીં અથવા તમારી ઓળખી શકાય તેવી માહિતી સમાવેશ

તમારું નામ જાહેર કરશે મોટે કોઈ સદ

નહી.

પાછી ખેંચવાનો અધિકાર

આ અભ્યાસમાં જોડાવાનો તમારો નિર્ણય સ્વૈચ્છિક છે. તમે કોઈપણ સમયે, કોઈપણ કારણસર સમજૂતી આપ્યા

વિના છોડી શકો છો. અમે આશા રાખીએ છીએ કે તમે સમગ્ર અભ્યાસ સમયગાળા માટે ભાગ લેશો કારણ કે અમને

સારી નિષ્કર્ષ પર પહોંચવા માટે બધી માહિતીની જરૂર છે.

પરિણામોની ઉપલબ્ધતા

જો માંગવામાં આવશે તો રિપોર્ટની નકલ તમને પ્રદાન કરવામાં આવશે જો તમને અભ્યાસના કોઈપણ ભાગ

વિશે સેવક તરીકેના તમારા અધિકારો વિશે કોઈ પ્રશ્નો હોય, તો કૃપા કરીને અચકાશો નહીં તમે તપાસકર્તાઓનો સંપર્ક

કરવા

સ્વાગત છે.

તપાસકર્તાનું નિવેદન

મેં સંશોધન કાર્યક્રમ, અભ્યાસનો હેતુ, સંભવિત લાભ અને જોખમો સમજાવ્યા છે. સહભાગીને આ સહભાગીને પ્રશ્નો પૂછવાની અને કોઈપણ વધારાની માહિતી પૂછવાની તક આપવામાં આવી હતી.

તારીખ સાથે તપાસકર્તાની સહી

સહભાગી નિવેદન

હું પ્રમાણિત કરું છું કે મને વાંચ્યું છે અથવા મને વાંચી સંભળાવવામાં આવ્યું છે અને હું અભ્યાસનું વર્ણન સમજું છું. આ ફોર્મ પર સહી

કરીને, હું પ્રમાણિત કરું છું કે મેં ઉપરની માહિતી વાંચી અને સમજી લીધી છે. બરોડાની મહારાજા સયાજીરાવ યુનિવર્સિટીમાં સ્તનપાન ગ્રુપ સ્તનપાનનો અને તેમના શિશુઓ દ્વારા સ્તનપાન કરાવતી માતાઓમાં

ડૂ. હમ્માગ

તકનીકો અને શિશુ ખોરાક પ્રથાઓના જ્ઞાન, વલણ અને વ્યવહારને સમજવા માટે અભ્યાસમાં વિષય તરીકે વિશેષ સામેલ

કરવા હું મારી સંમતિ આપું છું. હું આ અભ્યાસમાં

સહભ્ાગ્ી બનવ્ા મ્ાટ્ે સ્ૂવ્ેછછ્ાએ સમ		તત આપ છ અન્ે અભ્ય્ાસ	
	દરતમય્ાન મન્ે પછ	વ્ામ્ા આવત્ા પ્રશ્ન્ો ન્ા જવ્ાબ આપવ્ા મ્ાટ્ે હ સમ	ત છ અન્ે આ અભ્ય્ાસ દરતમય્ાન હ

સ્ુતનપ્ાનન્ા ાસ્ુ િ્ાત અન્` તકન્ાક્ ન્ અભ્ુય્ાસ કરવ્ા મ્ાટ્` સમત છ.

મન્` અભ્ય્ાસ વ્ાન્ા તક મળ્ા છ્`, હ સમજ છ ક્` ક્ ઈપણ ્ા શકાય છ`, મન` તવશ્` ાસ્ાન્ પછ સમય્` મન્` વધ ાસ્ાન્ પછ

મ્ારા ્ ષ મ્ાટ્` આ સમજ્ાવવ્ામ્ા આવ્ુય્ છ્` અન્` હ ક્ ્ા ન્ાપસદ સત ાનર્ાક્ષણ અભ્ય્ાસન્ ઈપણ અભ્ુય્ાસમ્ા િ હત

કરવ્ાન્ા મ્ાર્ા આાધક્ાર િ્ા પણ વ્ાક્`ફ છ. સમય.

સહભ◌ાગ◌ીન ન◌ામ:

____

(સહભાગLના સહL)

તારLખ:

તપ◌ાસકત◌ાઓન ક મ◌ાહિત◌L:

◌L સપ

પલક◌ીનલ◌શ ભગત
6354665434

ડ◌ .હ મ◌ાગ ◌Lન◌L ગ◌ાધ ◌L: 9824320554

પ્ર ફ. મLનL શ◌`ઠ

સ◌ક્ર◌ે◌`ટર◌L

હડ ઓફ ડ◌ાપ◌ાટમ◌ે◌ૂટ

િ◌ઈ મહ◌ાર◌ાજા સય◌ાજ◌ીર◌ાઓ યુ◌ીનવ◌ીસટ◌L

ઓફ બર◌ ડ◌ા વડ◌ દર◌ા, ગજર◌ાત,

ઇ◌ડય◌ા

(જ◌ અભણ સહભાગી અગ◌ૂઠ◌ ◌ છાપ◌` છ◌`)

APPENDIX 4 – ANGANWADI WORKER INTERVIEW

Name of AWC			
Name of AWW			
Experience as AWW			
Do you receive any training?	1. Yes 2. No		
Type of training	1. Induction training 2. Job 3. Refresher		
Topics of training	1. THR 2. Vaccination 3. IYCN 4. Poshan tracker 5. Any other		
From where do you get training?			
For how long you get training			
In any of the training were you taught about BF position and techniques?	1. Yes 2. No		
For how long & where was the training?			
When mother has to initiate breastmilk to the baby?	1. Immediately after delivery 2. Within 1 hour 3. Any other (specify) 4. Don't know		
Are you aware about Colostrum?	1. Yes 2. No		
Do you think pre lacteals should be given to the baby?	1. Yes 2. No		
How long child should be breastfed exclusively?	1. Till 6 months 2. 4-6 months 3. Others		
How do you know that baby is full and has enough breastfed?	1. Don't know 2. Urinates (6-8 times) 3. Baby stops suckling 4. When he/she sleeps		

APPENDIX 5 – QUESTIONNAIRE FOR LACTATING MOTHERS (0-6 MONTHS)

BACKGROUND INFORMATION		
1.	Name of mothers	
2.	Contact details	
3.	DOB of mother	
4.	Age of mother	
5.	Total number of children	
6.	Name of index child	
7.	DOB of child	
8.	Birth order of the child	
9.	Birth weight of the child	
10.	Infant was:	1. Preterm 2. Full term
11.	Religion	1. Hindu 2. Muslim 3. Christian 4. Others
12.	Family type	1. Nuclear 2. Joint 3. Extended nuclear
13.	Education of the mother	1. Illiterate 2. Primary (1^{st} to 8^{th} std.) 3. Secondary (9^{th} & 10^{th} std.) 4. Higher education (11^{th} & 12^{th} std.) 5. Graduate 6. Others (specify)
14.	Economic category	1. APL 2. BPL
15.	Occupation of the mother	1. Housewife 2. Labourer 3. Own agriculture work 4. Service 5. Others (specify)
16.	If housewife, how many times you breastfeed your child?	
17.	How many hours a mother is working (if not housewife)	

18.	How many times you breastfeed your child (if not housewife)	
19.	If you are working women, do you abstract breastmilk?	1. Yes 2. No
20.	If yes, how frequently you are abstracting breastmilk?	1. Daily 2. Once in 2 – 3 days 3. Once in 4 – 5 days 4. Once a week
SERVICES AVAILED DURING PREGNANCY		
21.	When did you registered to any anganwadi or UHC ?	1. <12 weeks 2. >12 weeks
22.	Did you go for ante natal check-ups during pregnancy?	1. Yes 2. No
23.	If yes, mention total number of ANC done?	1. 1 2. 2 3. 3 4. 4 5. >4 6. Others (specify
24.	What ANC services did you received from AWC?	1. Weight monitoring 2. Deworming tablets 3. T.T. injections 4. Blood testing 5. BP check 6. Nutrition 7. Counselling 8. USG (sonography) 9. Urine testing 10. Didn't receive any 11. Didn't visit AWC 12. Others (specify
25.	Which supplements during pregnancy did you receive or have received from AWC?	1. IFA 2. Calcium 3. Matrushakti 4. DFS 5. MMY 6. Didn't receive 7. Don't visit AWC
26.	How often do you get Matrushakti?	1. Every month 2. Once 3. Others (specify) 4. Don't know
27.	If not, why did you get matrushakti?	1. Not enrolled AWC 2. Didn't go to collect THR 3. Any other (specify)

		4. Don't know about it
28.	Did you consume matrushakti regularly during pregnancy?	1. Yes 2. No
29.	If not, why?	1. Dislike it 2. Too sweet 3. Others (specify)
30.	How often do you get IFA tablets during pregnancy?	1. Every month 2. Once 3. Any other (specify) 4. Never
31.	How many IFA tablets did you get from AWC monthly?	1. 30 2. 60 3. Any other (specify) 4. Did not get
32.	Did you consume IFA tablets regularly during pregnancy?	1. Yes 2. No
33.	If no, why?	1. Caused constipation 2. Caused vomiting/ nausea 3. Any other (specify)
34.	How often did you get calcium tablets?	1. Every month 2. One 3. Twice 4. Any other (specify) 5. Did not get
35.	Reasons for not getting calcium tablets?	1. Didn't go to collect THR 2. Didn't get it from AWC 3. Took service from private sector 4. Any other (specify)
POST NATAL CARE		
36.	After index child was born which supplements you are receiving from AWC?	1. Matrushakti 2. Calcium 3. IFA 4. Deworming 5. DFS 6. MMY 7. None 8. NA
37.	If you are receiving matrushakti regularly, do you consume regularly?	1. Yes 2. No

38.	If you didn't receive matrushakti, mention why not?	1. Did not enrolled in AWC 2. Didn't go to collect THR 3. Did not getting from AWC 4. Any other (specify)
39.	If you are getting calcium tablets, then are you consuming it every day after the childbirth?	1. Yes 2. No
40.	If you are getting IFA tablets, then are you consuming it every day after the childbirth?	1. Yes 2. No
COUNSELING		
41.	Are you counselled about IYCN?	1. Yes 2. No
42.	By whom you are been counselled?	1. AWW 2. ASHA 3. FHW 4. Private hospital, then nurses/ doctors
43.	When was the counselling done?	1. During ANC on Mamta Diwas 2. On the day of delivery 3. During PNC visit 4. Any other (specify)
44.	What did they counsel you about, regarding IYCN practices? (tick all the options mother mentioned)	1. EIBF 2. Colostrum 3. Not to give pre lacteals 4. EBF 5. Age-appropriate CF 6. Breastfeeding positions and techniques 7. Others (specify)
KNOWLEDGE OF LACTATING MOTHERS (0 – 6 MONTHS)		
45.	When you have to initiate breastmilk to the baby?	1. Immediately after delivery 2. Within 1 hour 3. Any other (specify) 4. Don't know
46.	Are you aware about colostrum?	1. Yes 2. No
47.	If yes, what?	

	(Write it manually what mother mention)	
48.	What is the importance of colostrum? (Write it manually what mother mention)	
49.	Do you think pre lacteals should be given to the new-born?	1. Yes 2. No
50.	If yes, why?	
51.	If no, why?	
52.	How long child should be breastfed exclusively?	1. Till 6 months 2. 4 – 6 months 3. Others (specify)
53.	How do you know that baby is full and has enough breastfed?	1. Don't know 2. Urinates (6 to 8 times
54.	Do you know at what age complementary feeding should be started?	1. After 6 months 2. 4 – 6 months 3. Others (specify)
55.	Are you aware of breastfeeding position & techniques?	1. Yes 2. No
PRACTICES ABOUT IYCN		
56.	Early initiation of breastfeeding was done?	1. Yes 2. No
57.	Was colostrum fed to the baby?	1. Yes 3. No
58.	Do you give any pre lacteals to the child?	1. Yes 2. No
59.	If yes, what?	1. Honey 2. Jaggery 3. Animal milk 4. Gutti 5. Dal water 6. Ajwain water 7. Water 8. Ghee 9. Kadha 10. Any other (specify) 11. NA
60.	At present do you breastfed your child?	1. Yes 2. No

61.	Exclusive breastfeeding for ?	1. For 6 months 2. 4 – 6 months 3. Others
62.	If yes, frequency of breastfeeding during daytime?	1. 2 – 3 times 2. 4 – 6 times 3. 7 – 9 times 4. 10 – 12 times 5. More than 12 times 6. Don't feed 7. NA
63.	If yes, frequency of breastfeeding during night?	8. 2 – 3 times 9. 4 – 6 times 10. 7 – 9 times 11. 10 – 12 times 12. More than 12 times 13. Don't feed 14. NA
64.	If Q 56, is NO, then mention the reasons for discontinuing the breastfeeding?	1. Insufficient breast milk 2. Sore nipples 3. Engorgement 4. Redness of breast 5. Pain during feeding 6. Milk not coming 7. Child stopped himself/herself 8. Not getting time, has to go for work 9. None
65.	How many times the child urinates during the day?	1. 2- 3 times 2. 4 – 5 times 3. 7 – 8 times 4. 10 – 12 times 5. More than 12 times 6. Others (specify) 7. don't know
66.	Are you giving any foods besides breast milk?	1. Yes 2. No
67.	If yes, what?	1. Infant feeding formula/ milk powder 2. Animal milk 3. Honey 4. Jaggery 5. NA
68.	if Q 61 is yes, why?	
69.	Are you facing any difficultly during breastfeeding?	1. Yes 2. No
70.	If yes, then what?	1. Sore nipples 2. Engorgement

		3. Redness of breast 4. Pain during feeding 5. Milk not coming 6. Others (specify)
71.	If you are facing any trouble during breastfeeding whom do you visit?	1. AWC 2. Government hospital 3. Private hospital 4. Elderly female in the famil
72.	Do you clean your breast before and after breast feed?	1. Yes 2. No
73.	With what you are cleaning your breast?	1. Water 2. Soup and water 3. Any other I(specify) 4. NA
74.	Do you take any galactagogues?	1. Yes 2. No
75.	If yes, then what?	1. Suwa 2. Methi 3. Suth 4. Ajma & gud water 5. Kajur 6. Suka mewa 7. Kopru 8. Khas khas 9. Others (specify)
76.	How frequently you are consuming galactagogues?	1. Everyday 2. Once in 2 – 3 days 3. Once in 4 – 5 days 4. Once in a week 5. Once in 10 days 6. Once in a month 7. Others
MYTHS		
77.	Which food you use to avoid during pregnancy?	
78.	Which specific food you consumed during pregnancy?	
79.	Which foods you avoid during lactation period?	
80.	Which specific food you consumed more during lactation period	

SPOT OBERVATION CHECK LIST

Name of Mother			Pre observation data	Post observation data
Anganwadi number				
Date of observation				
Age of child				
Position	1. Infant head and body straight. 2. Infant facing the mother's breast with nose opposite the nipple. 3. Mother supporting infant's whole body.	Tick on the final observation Good position (if all criteria are met) Not well positions (if 1 or 2 criteria met) No proper position at all (no criteria met)		
Attachment	1. Chin touching breast 2. Mouth wide open 3. Lower lip turned outward. 4. More areola visible above than below the mouth.	Tick on the final observation Good attachment (if 3 or 4 criteria met) Not well attached (if 1 or 2 criteria are met) No attachment at all (if no criteria met)		
Suckling	Infant taking slow deep sucks, something pausing infant having rapid shallow sucks.	Not suckling effectively		