



## A study of effectiveness of ‘Objective, Intensive and Reinforcing’ counselling about ‘Breastfeeding’ and correct ‘Breastfeeding Techniques’ to the mothers antenatally and postnatally on early initiation and success of breastfeeding

Dr. Rithu Babu<sup>1</sup>, Prof. Dr. T. L. Ratnakumari<sup>2</sup>

Student researcher<sup>1</sup>, Professor and Head of the Department of Paediatrics<sup>2</sup>

Andaman and Nicobar Island Institute of medical sciences and GB Pant Hospital, Port Blair

### Abstract

#### Background:

Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants. It is also an integral part of the reproductive process with important implications for the health of mothers. However, According to the National Family Health Survey – 4, only 41.6% of infants are breastfed within the first hour of birth in India. This study aims at providing proper counselling to the mothers regarding breastfeeding and the proper techniques of breastfeeding, and studying the results of the impact it had on the breastfeeding experience of the mothers using a validated questionnaire.

#### Objectives:

To find out whether offering ‘intensive, objective, reinforcing’ counselling to mothers antenatally and postnatally would help them to initiate breastfeeding within the 1st hour and have a successful breastfeeding experience, which would help them adhere to exclusive breastfeeding for 6 months.

To study the growth parameters of the recruited infants.

#### Materials & Methods:

90 mother-baby dyads formed the subjects in my study who were recruited randomly from the antenatal clinics even before delivery of the babies and were counseled in a separate private cubicle from the last trimester (8-9 months) of antenatal period regarding the Importance of breastfeeding, neonatal and maternal benefits of breastfeeding, and proper techniques of breastfeeding (good attachment, position, suck). The mothers were requested to answer a given questionnaire (annexure 1) and the infants were then followed up every 2 weeks in the first month and subsequently every 4 weeks until the end of the study and also beyond. Their growths were monitored by taking anthropometric parameters and were charted on standard growth charts- Fenton chart.

#### Results:

- 92.2% mothers breastfed their babies within 1 hour of birth as against 41.9 % as per NFHS-4 data for the islands, which is a statistically significant rise.
- All the 90 mothers willingly agreed to continue to exclusively breastfeed their babies during their 3rd counseling.
- Total 77 of the mothers could be followed till the end of 2 months, out of whom, 4 (4.44%) were found to be deviating from exclusive breastfeeding, and 73 (81.1%) of them were exclusively breastfeeding. Course correction was offered to them.

#### Interpretation & conclusions:

- Objective, intensive, reinforcing’ counseling given to antenatal and postnatal mothers help in successful early initiation.
- Breastfeeding was found to be adequate for the growth of the infant if the mothers were motivated and they successfully breastfed their infants.

**Keywords:** Breastfeeding, Counseling, Antenatal care, Exclusive breastfeeding, Newborn nutrition, Early initiation

### Introduction

The ‘Global Strategy for Infant and Young Child Feeding’ states that “breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; It is also an integral part of the reproductive process with important implications for the health of mothers”<sup>1</sup>. Taking the

above statement into consideration, it has always been noted to be prudent and mandatory for every mother to exclusively breastfeed her infant for the first 6 months of life, to make her infant step into a healthy future, which encompasses optimal growth and development both physically and mentally.

Exclusive breastfeeding refers to giving a baby no other food or drink, including water, in addition to breastfeeding with the exception of syrups/drops of vitamins, minerals and medicines (expressed breastfeeding is also permitted)<sup>2</sup> as per the guidelines of BFHI (Baby friendly hospital initiative).

Breastfeeding should be started as soon as delivery when the baby shows a 'breast crawl' on the abdomen of the mother as per the current WHO guidelines. This applies to all well neonates with no hemodynamic compromise.

The status of breastfeeding and complementary feeding practices is not very enviable in India and certain other developing countries. According to the National Family Health Survey – 4, only 41.6% of infants in Andaman and Nicobar Islands<sup>3</sup> and 23.4% of infants in India are breastfed within the first hour of birth.<sup>4</sup>

Over the years, the art of breastfeeding seems to have been lost somewhere. Various factors like urbanization, a change from joint to nuclear families, increasing proportion of working women, easy availability and advertisements of breastmilk substitutes etc. have contributed to it.

This study aims at providing an 'objective, intensive, and reinforcing' counseling to the mothers both antenatally and postnatally to make the mothers understand the fact that in breastfeeding the mother is always a winner; and the impact it had on the breastfeeding experience of the mothers is studied using a validated questionnaire.

This study was undertaken as part of ICMR STS 2018 by the 1<sup>st</sup> author, Dr. Rithu Babu, while being a student of ANIIMS, under the guidance of Prof. Dr. T. L. Ratnakumari, who was the then HOD of the Department of Paediatrics, ANIIMS.

#### **Aim:**

To find out if offering 'objective, intensive, reinforcing counselling' to antenatal and postnatal mothers in the antenatal and postnatal wards would help the mothers have a happy and satisfying breastfeeding experience which would help them achieve exclusive breastfeeding for 6 months, wherein,

1. Intensive, refers to emphasizing on the need for exclusive breastfeeding by telling them about the physiology of breastfeeding and the maternal and fetal benefits of breastfeeding
2. Objective, refers to teaching them the correct techniques of breastfeeding
3. Reinforcing, refers to offering the counselling one-to-one at every contact visit.

The outcome measure is successful breastfeeding which is measured by successful early initiation within 1st hour.

The counseling coupled with assessment is done by using a tool generated by self in the department, which is hitherto referred to as tSuccess story questionnaire (anneure 1), validated by 3 faculty of the pediatric department and a staff nurse.

As a secondary aim anthropometric assessment of all the recruited infants are also studied comparing them with standardized growth charts.

#### **Materials And Methods:**

This is a prospective interventional study (counseling as a tool of health intervention).

Inclusion criteria: 90 mother-baby dyads, who attended the antenatal clinic of ANIIMS Obstetric department and who had delivered their babies at ANIIMS between 20th May 2018 and 19th July 2018 formed the subjects in my study. The mothers were included randomly as for the sample size calculated. This sample size calculation was based on the current initiation of breastfeeding scenario in the islands- UT state of Andaman and Nicobar islands as given in NFHS-4 data. These mothers continued their postnatal visits at ANIIMS or relevant health centers attached to the health units of DHS/ANIIMS after their deliveries.

#### **Exclusion criteria:**

1. Mothers who had any major illness medically or obstetric related were excluded.
2. Babies who were acutely ill with hemodynamic compromise at birth were excluded.
3. Babies with congenital orofacial malformations.

The mothers were counseled in a separate private cubicle in the last trimester antenatal period within 7-10 days before their expected delivery.

The information offered during the counseling were:

1. Importance of breastfeeding, and neonatal and maternal benefits of breastfeeding.
2. Illustration of proper techniques of breastfeeding:
  - a. Position
  - b. Attachment
  - c. cSuck

Counseling included picture illustrations and media aids such as CD/video display from my laptop. The counseling session was 30 to 60 minutes every time and they were done 4 times- one session antenatally, and 3 sessions postnatally. The mothers were requested to answer a given questionnaire (annexure 1) after having attended the counseling before they were discharged postnatally. The questionnaire consisted of 18 queries, out of which 4 were simple introductory questions, which did not carry any marks and the rest of the questions had a total score of 28 (maximum).

The infants were then followed up every 2 weeks in the first month and subsequently every 4 weeks until the end of the study and also beyond. Their growth is monitored by taking the anthropometric parameters given below:

1. Weight – Measured using an electronic infant weighing scale.
2. Length – Measured using an infantometer.
3. Head circumference – The maximum occipito-frontal circumference as measured anteriorly from the point above glabella to a

point of occipital protuberance posteriorly using a nonstretchable measuring tape.

The anthropometric parameters were carefully charted on standard growth charts- Fenton chart. Inter-observer error is eliminated by self-doing all the measurements. The infants who could not turn up to the hospital for follow-up were followed telephonically with the mothers and the staff of health units. This is a necessity since the union territory of Andaman and Nicobar Islands is an archipelago which is spread over a vast expanse of sea and constituted by different islands.

**OBSERVATIONS AND RESULTS:**

1. Total number recruited as per sample size is 90 dyads of mothers and infants.
2. Counselling was given at the antenatal ward to all the 90 women.
3. The second counseling was given at 8-24 hours after birth or for some mothers, on the 2nd day. During this counseling, assessment was done on motivation and understanding of breastfeeding by a questionnaire and actual observation of breastfeeding techniques were observed and noted on the questionnaire.
4. The 3rd and 4th counseling was done at 1 month, and 45 days or 2 months, as the case may be.

The following facts crystallized:

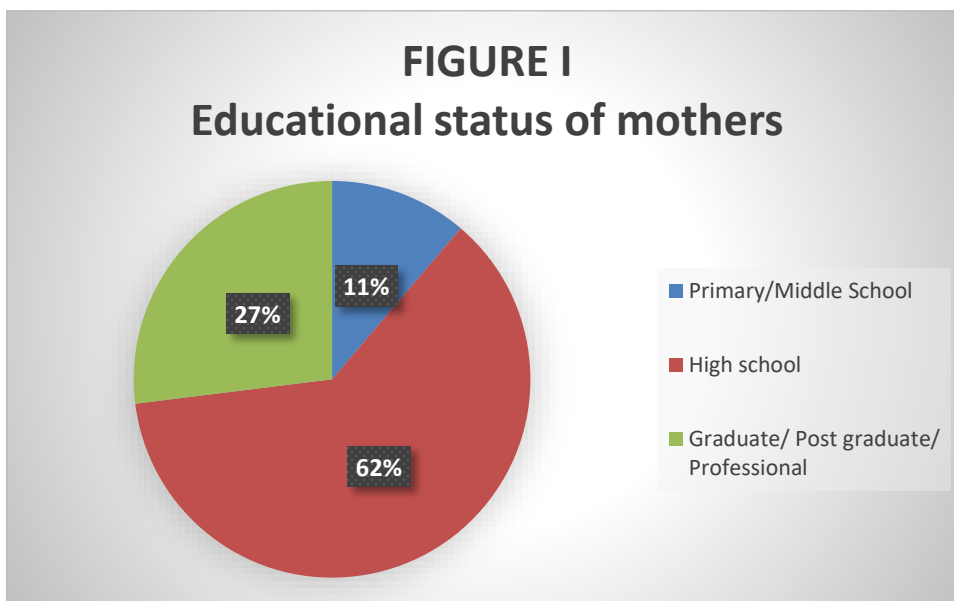
1. Sample size calculated- 90
2. Total number considered – 114
3. Total number excluded – 14
4. Total number taken for study-90 mother infant dyads

**TABLE 1 – INFORMATION ABOUT THE MOTHERS**

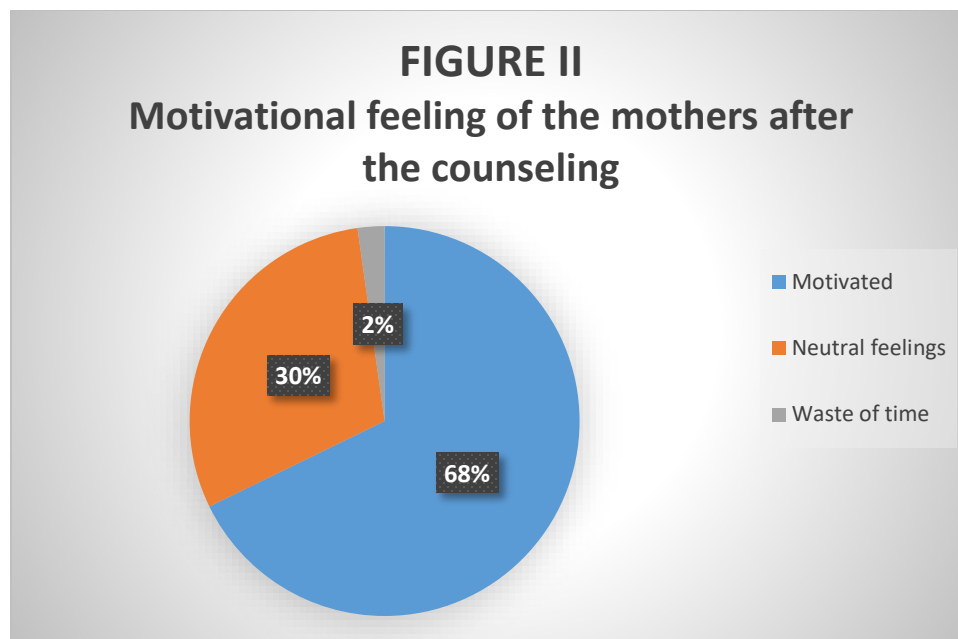
	Mean	Median	Standard deviation	Minimum	Maximum
Age	26.767	26	5.281	18	39
Para	1.444	1	0.638	1	3
Number of children	1.4	1	0.596	1	3

Duration for which previous child was exclusively breastfed (in months) (in case of multiparous women)	5.467	6	1.377	1	7
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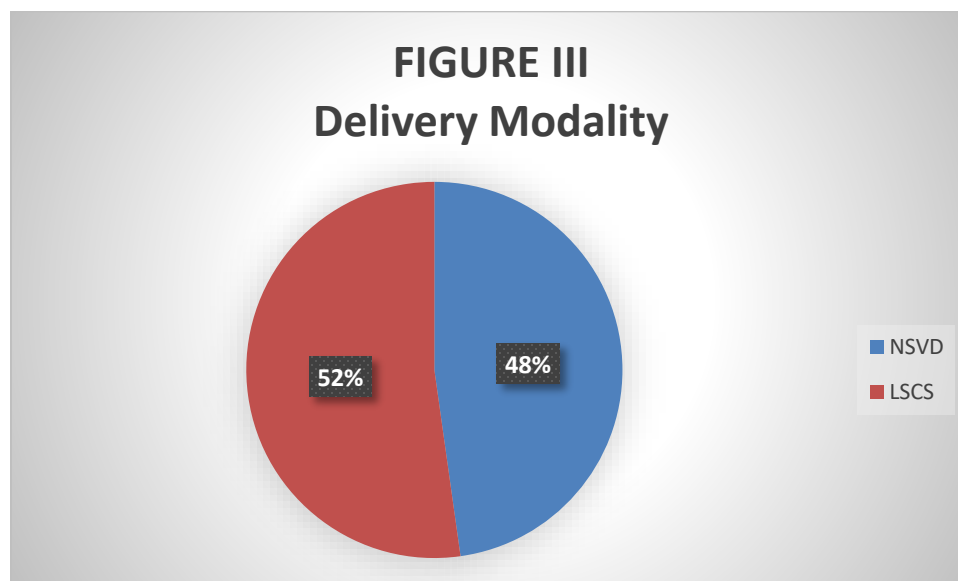
Of the recruited mothers, 10 (11.24%) had primary / middle school education, 55 (61.8%) had high school education, and 24 (26.97%) had graduate/postgraduate/professional education. (Figure I)



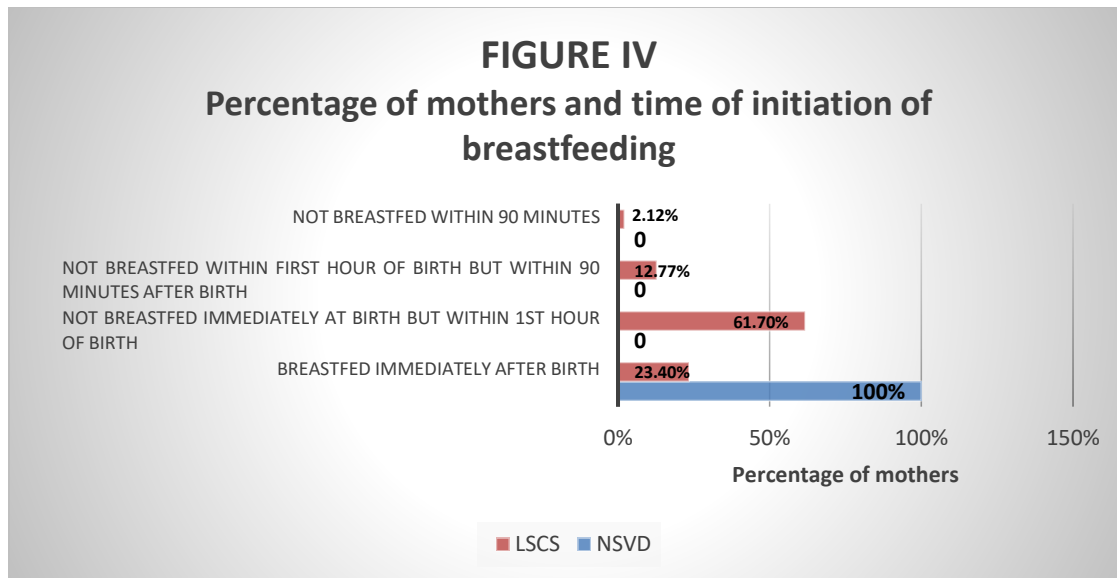
1. Number of infants born – 90.
2. All of them were term infants with a mean weight of 3 kgs, mean length of 47 cms, and mean head circumference of 32 cms, except 3 babies who were low birth weight (of which 2 were IUGR).
3. During the 1st and 2nd counseling, 61 mothers (67.78%) felt motivated after the counseling, 27 (30%) had neutral feelings and 2 (2.22%) felt it as a waste of time. Both were multipara mothers. (Figure II)



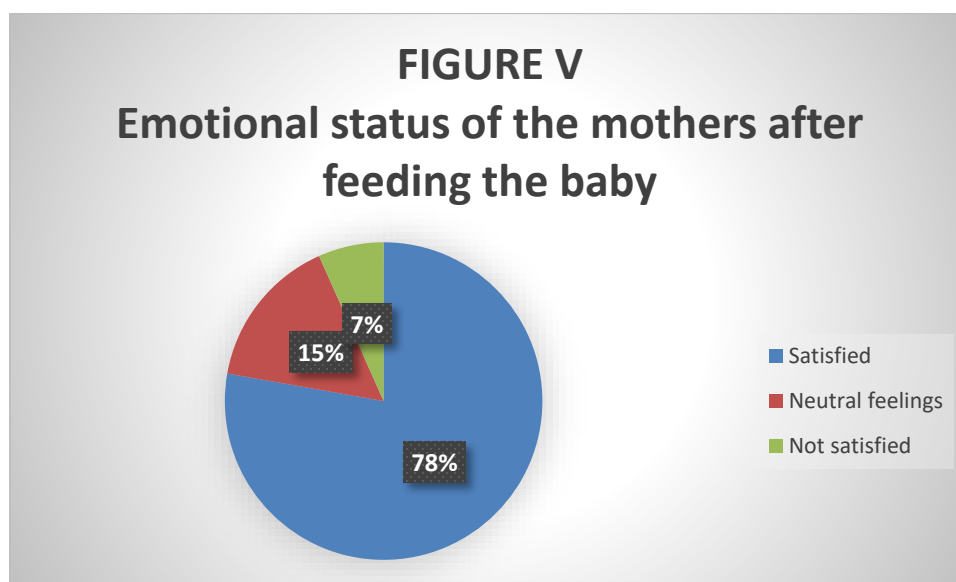
Mode of delivery: 43 (47.78%) babies were born by NSVD and 47 (52.22%) babies were born by LSCS. (Figure III)



1. 54 (60%) babies were breastfed immediately after birth.
2. Colostrum swabbing was done independently for all the 90 babies by the attending neonatal staff nurse, which is the existing practice as per unit protocol.
3. 29 (32.22%) babies were breastfed within the 1st hour and 6 (6.67%) were breastfed within the first 90 minutes. 1 baby (1.11%) was breastfed after 11 hours since the mother was in the ICU and the baby needed NICU care level II.
4. Out of the 54 babies who were immediately breastfed, 43 were born by NSVD and 11 were born by LSCS. This shows 100% of NSVD mothers breastfed their babies immediately after birth and 23.4% of LSCS mothers breastfed their babies immediately. (figure IV)



1. None of the babies were offered pre lacteal feeds.
2. 76 babies (84.44%) were given more than 8 feeds per day, up to 12 feeds. And 14(15.56%) were given 6-8 feeds per day (course correction was done during the counseling). Mean frequency was 9 feeds per day. All the infants were given at least 1 night feed.
3. 67 babies (74.44%) had urination frequency of more than 8 per day, 21 (23.33%) had urination frequency of 6-8 per day. Mean frequency was 8 per day.
4. 83 babies (92.22%) had a stooling frequency of more than 6, and 7 babies (7.77%) had a stooling frequency less than 6. Mean frequency was 6 per day.
5. 70 mothers felt highly satisfied after feeding their babies, 14 mothers had neutral feelings and 6 of the mothers were not satisfied. The mothers who were not satisfied were the mothers of the babies who were kept in NICU for medical reasons, who needed expressed breast milk (Figure V).



1. 84 babies (93.33%) had normal sleeping pattern, and 6 of them (6.67%) were irritable/ cried after being breastfed.
2. 10 dyads could not be followed up beyond 1 month, and 3 more beyond 2nd month. The point to note is that all of them were from far off islands and an attempt is made to track them through the health units. Of these 10 dyads 5 were late starters of breastfeeding beyond 1 hour, and 5 were in the early breastfeeding group.
3. All the 90 mothers willingly agreed to continue to exclusively breastfeed their babies during their 2nd counseling and had signed in an affidavit as a token. 13 of them could not be followed up at 2 months, and this makes 14.44% of the total number. All of them were found to be living in the far off islands and are grouped as ‘lost for follow-up’.
4. Total 77 of the mothers could be followed till the end of 2 months, out of whom, 4 (4.44%) were found to be deviating from exclusive breastfeeding and 73 (81.1%) of them were exclusively breastfeeding.
5. The mean score obtained in the questionnaire was 22.917 (81.845%) out of a total score of 28. The lowest score obtained was 16.5 (58.93%) and the highest was 28 (100%). The median was 23 (82.142).

**TABLE 2 - BREASTFEEDING DATA S OBTAINED FROM ‘SUCCESS STORY QUESTIONNAIRE’**

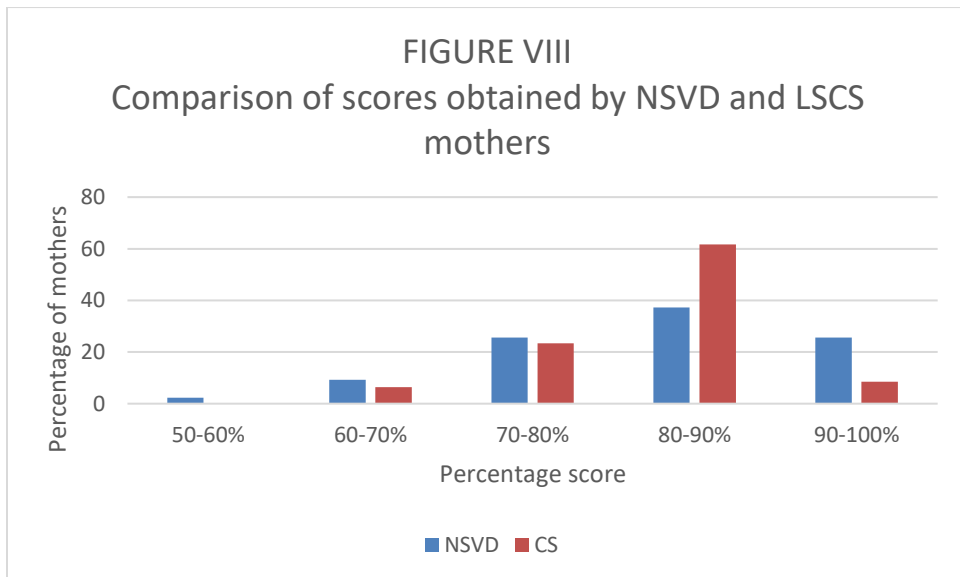
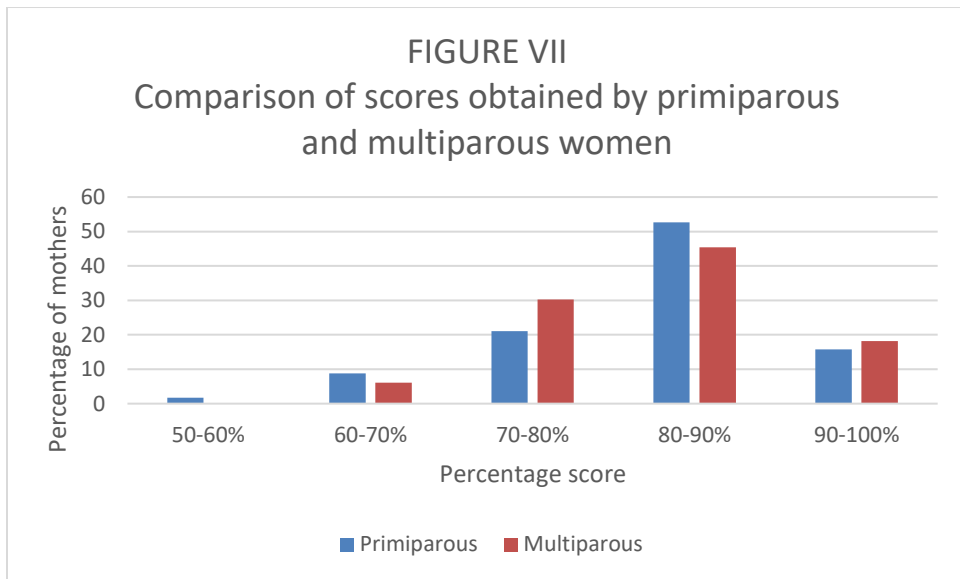
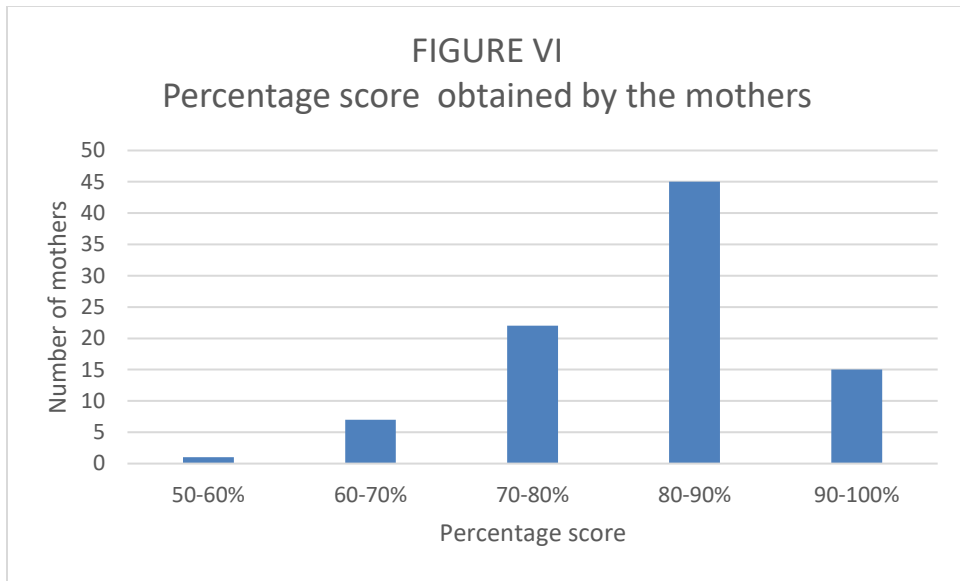
		Frequency	Percentage
Feeling after counseling	Motivated/Happy	61	67.78
	Neutral feelings	27	30
	Frustrated	2	2.22
Infants breastfed immediately after birth		54	60
Infants breastfed within 1st hour of birth		83	92.2
Pre-lacteal feeds	Given	0	0
	Not given	90	100
Colostrum swabbing	Done	90	100
	Not done	0	0
Number of feeds per day	8-12	76	84.44
	4-8	12	13.33
	<4	2	2.22
Night feeds	Given	90	100
	Not given	0	0
Urination frequency	6-8	67	74.44

	5-6	16	17.78
	<5	7	7.78
Frequency of passing stools	4-6	19	15.6
	3-4	57	63.3
	<3	14	15.6
Feeling after feeding the baby	Satisfied	70	77.78
	Neutral feelings	14	15.56
	Not Satisfied	6	6.67
Activity of the baby after feeding	Sleeps	84	93.33
	Irritable/ cries	6	6.67
Affidavit for exclusive breastfeeding for 6 months willingly	Given	90	100
Subjects who deviated from exclusive breastfeeding	At 1 month	2	2.22
	at 2 months	2	2.22

**TABLE 3 – SCORE OBTAINED BY THE MOTHERS IN THE SUCCESS STORY QUESTIONNAIRE**

	Mean	Median	Standard deviation	Minimum	Maximum
Questionnaire score	22.917	23	2.314	16.5	28
Questionnaire percentage	81.845	82.142	8.263	58.93	100





1. At 1 month, the mean weight of the babies was 3.76 kgs, mean length was 51.115 cms and mean head circumference was 36.615 cms. (TABLE 4)
2. At 2 months, the mean weight was 4.645 kgs, mean length was 53.125 cms and mean head circumference was 39.833 cms. (TABLE 4)

	No.of Observations	Mean	Median	Standard deviation	Minimum	Maximum
Birth weight (in kg)	90	3.041	3	0.502	1.9	4.5
Birth length (in cms)	90	47.243	48	2.851	40	52
Head circumference at birth (in cms)	90	32.968	33	4.292	3	43.5
Chest circumference at birth (in cms)	90	31.271	31	1.675	27	35
Weight at 1 month (in kg)	20	3.76	3.85	0.584	2.85	4.9
Length at 1 month (in cms)	20	51.115	50.5	2.615	48	56
Head circumference at 1 month (in cms)	20	36.615	37	1.502	34.5	39.5
Chest circumference at 1 month (in cms)	20	35.077	34.5	2.985	32	44
Weight at 2 months (in kg)	17	4.645	4.88	0.721	3.5	6
Length at 2 months(in cms)	17	53.125	51.5	4.486	50	63
Head circumference at 2 months (in cms)	17	40.833	39	4.131	35	47.5

Chest circumference at 2 months (in cms)	17	40.111	39	4.129	36	47
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**TABLE 5- GROWTH PARAMETERS FOR 60 DAYS OF GROWTH**

	Mean difference at one month and birth	Mean difference at two months and birth
Weight	0.7555	1.531
Length	4.375	4
HC	4.25	5
CC	4.25	8.7

**Inference:** This is upward mobility of growth parameters, showing normal growth.

**TABLE 6 -IMPACT OF DELIVERY MODALITY ON SUCCESS OF BREASTFEEDING**

	Mean for NSVD mothers	Mean for LSCS mothers	P value
Delivery Modality	22.04348	21.90323	0.8238

The difference in mean scores obtained by mothers who delivered by NSVD and LSCS was not significant. (Table 6)

**TABLE 7- OVERALL IMPROVEMENT IN SUCCESSFUL BREASTFEEDING FROM NFHS-4 (2015-16) TO 2018 ANIMS DATA**

	As per NFHS-4 data <sup>7</sup>	As per the study	p value
Percentage of mothers who breastfed within 1 hour of birth	41.9	92.2	0.0001

As seen in table 7 there was a significant rise in percentage of early initiation of breastfeeding in this study as compared to NFHS-4 data.

**DISCUSSION:**

As per the above data sheet it is evident that the objective, intensive, reinforcing counseling is a very robust and strong tool in the hands of the caregivers, to enhance breastfeeding practices. In our study, for the early initiation of breastfeeding, there is a clear swing of 50.3% towards upward trend, with a statistical difference of 0.0001 when '1-sample proportions test with continuity correction' was done, which is highly significant.

Also, it is understandable and heartening to note that modality of delivery did not deter a mother from early initiation of breastfeeding if she had a higher score as evaluated by the questionnaire.

### CONCLUSION:

Objective, intensive, reinforcing counseling given to antenatal and postnatal mothers help in improving the successful breastfeeding status of mothers in my study.

Breastfeeding was found to be adequate for the growth of the infant if the mothers were motivated and they successfully breastfed their infants, as per my study.

### ACKNOWLEDGEMENTS:

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*Ethical clearance:* Institutional Ethics Committee (Reg. No.ECR/940/Inst/AN/2017)

### Contributors:

Prof. T. L. Ratnakumari : The conception of the study and study design, analysis and interpretation of the results.

Dr. Rithu Babu : Literature search, actual execution of the study design, compilation of data, computation and statistics, correspondence.

The write-up was prepared by the combined efforts of both the authors.

*Corresponding Author:* Dr. Rithu Babu

**CONFLICTS OF INTEREST:** Nil

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