

## **Chapter 4**

### **Analysis and Interpretation**

The analysis and interpretation of the data gathered for the research study are the topics covered in this chapter. The present study was carried out in two phases. In Phase I, the cross-sectional approach was carried out among 400 postnatal mothers. The postnatal mothers were assessed for their breastfeeding knowledge, practices and problems related to breastfeeding from birth up to six months postpartum. In Phase II, a randomized controlled trial was done among 100 primigravid mothers wherein the experimental group (n=50) received the comprehensive breastfeeding promotion program and routine care while the control group (n=50) received the normal routine care.

In the present study, both descriptive and inferential statistics were used to analyze the data systematically.

#### **Organization of the study findings**

The following parts contain the study's findings, which have been arranged in accordance with its goals and phases:

##### ***Phase I***

Section 1 – Background information of the postnatal mothers

Section 2 – Breastfeeding knowledge of the postnatal mothers

Section 3 – Practices related to breastfeeding of the postnatal mothers

Section 4 – Problems related to breastfeeding of the postnatal mothers

## ***Phase II***

Section 5 – Background information of the experimental and control group

Section 6 – Comparison of breastfeeding self-efficacy between experimental and control group

Section 7 – Comparison of breastfeeding practices between experimental and control group

Section 8 – Comparison of breastfeeding outcomes between experimental and control group

Section 9 – Comparison of breastfeeding experiences between experimental and control group

## **Phase I**

In this phase, need based assessment was carried out among 400 postnatal mothers to assess their knowledge, practices and problems related to breastfeeding up to six months post partum. It is described in below mentioned sections:

### **Section 1**

#### **Background Information of the Postnatal Mothers**

This section describes the characteristics of samples in terms of background information and is described in terms of frequency and percentage. (Table 2)

**Table 2: Distribution of the postnatal mothers based on their background information**

**n = 400**

<b>S.No.</b>	<b>Demographic Variables</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
<b>1.</b>	<b>Age</b>		
1.1	21-25 years	91	22.7
1.2	26-30 years	256	64.0
1.3	31-35 years	53	13.3
<b>2.</b>	<b>Maternal Education</b>		
2.1	No formal education	62	15.5
2.2	Primary	144	36.0
2.3	Secondary	127	31.8
2.4	College/ University	67	16.8
<b>3.</b>	<b>Religion</b>		
3.1	Hindu	339	84.8
3.2	Muslim	59	14.8
3.3	Sikh	1	0.3
3.4	Christian	1	0.3
<b>4.</b>	<b>Working status</b>		
4.1	Working	76	19.0
4.2	Non-working	324	81.0
<b>5.</b>	<b>Parity</b>		
5.1	One	195	48.8
5.2	Two	173	43.3
5.3	Three	31	7.8
5.4	More than three	1	0.3
<b>6.</b>	<b>Type of Family</b>		
6.1	Nuclear	294	73.5
6.2	Joint	106	26.5
<b>7.</b>	<b>Type of delivery</b>		
7.1	Normal vaginal delivery	117	29.5
7.2	Assisted delivery	54	13.5
7.3	Caesarean section	229	57.3
<b>8.</b>	<b>Family support for breastfeeding</b>		
9.1	Yes	400	100
9.2	No	0	0

From the above Table 2, it is concluded that majority of the mothers belonged to the age group of 26-30 years [256(64.0%)]. Regarding maternal education, majority of the mothers had secondary education [127(31.8%)]. [339(84.8%)] mothers belonged to Hindu religion. [324(81.0%)] mothers were not working while only [76(19.0%)] of the mothers were employed. [195(48.8%)] of the mothers were primigravidae. Majority of the mothers [294(73.5%)] had nuclear family. [229(57.3%)] had undergone c-section and all the mothers [400(100%)] showed good breastfeeding support from the family members.

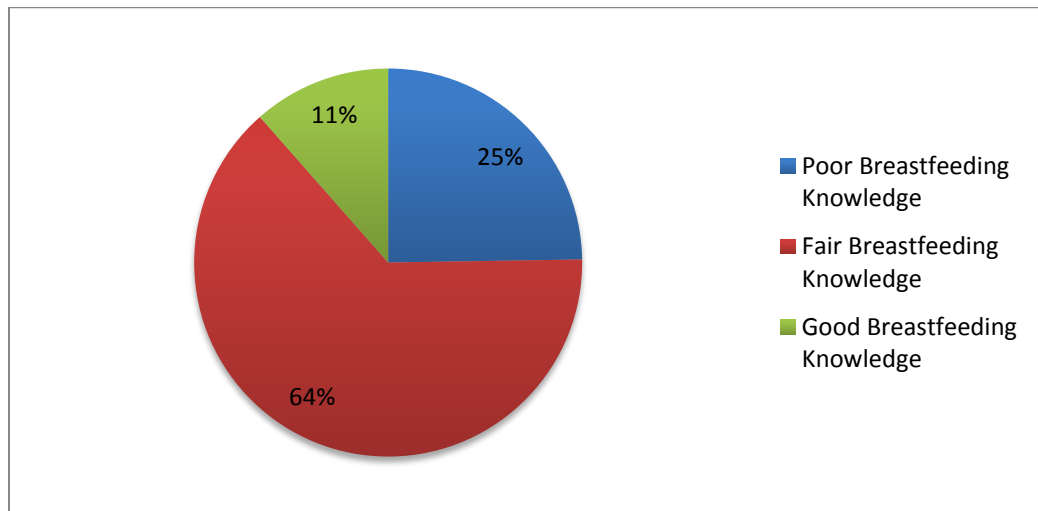
## **Section 2**

### **Knowledge of the Postnatal Mothers related to Breastfeeding**

The knowledge regarding breastfeeding of the postnatal mothers (n=400) were assessed using the cross-sectional approach. Total 12 questions were used to assess the mainly three domains of breastfeeding – Breastfeeding benefits, early beginning of breastfeeding and breastfeeding duration, and breastfeeding promotion and techniques.

The distribution of postnatal mothers based on their breastfeeding knowledge is presented in figure 4.

n = 400



**Figure 4: Pie-diagram showing distribution of postnatal mothers based on breastfeeding knowledge**

The study results revealed that [99(24.8%)] mothers had poor knowledge, [266(63.7%)] mothers had average knowledge and only [46(11.5%)] mothers had good knowledge regarding breastfeeding.

**Table 3: Range, Mean, Standard Deviation and Mean % Score of postnatal mothers regarding breastfeeding knowledge**

**n = 400**

<b>S.No.</b>	<b>Domain</b>	<b>Maximum Score</b>	<b>Range</b>	<b>Mean±S.D.</b>	<b>Mean score%</b>
1.	Benefits of breastfeeding	4	1 - 4	2.16±0.74	54.0
2.	Breastfeeding initiation and duration	5	0 - 4	1.80±0.69	36.0
3.	Breastfeeding promotion and techniques	3	0 - 3	0.98±0.49	32.6
	<b>TOTAL</b>	<b>12</b>	<b>1-11</b>	<b>4.94±1.92</b>	<b>41.16</b>

From the above Table 3, it is concluded that the lowest knowledge score was noted on breastfeeding promotion and techniques (0.98±0.49) with mean% = 32.6. The highest knowledge score was reported on the benefits of breastfeeding (2.16±0.74) with mean% = 54.0. The distribution of postnatal mothers based on specific knowledge regarding breastfeeding is presented in Table 3.

**Table 4: Distribution of samples based on specific knowledge regarding breastfeeding**

**n = 400**

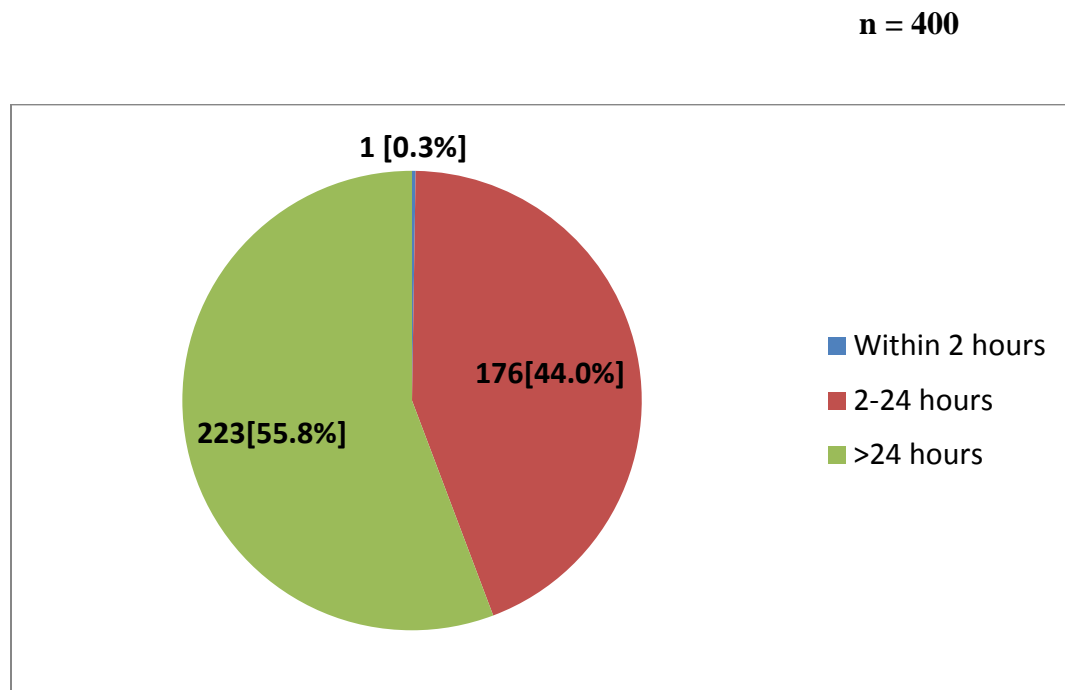
<b>S.No.</b>	<b>Specific Breastfeeding Knowledge</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
1.	Breastfeeding exclusivity	374	93.5
2.	Benefit of skin to skin contact	349	87.3
3.	Importance of colostrum	311	77.7
4.	Signs of good attachment	218	54.5
5.	Breastfeeding frequency	166	41.5
6.	Breastfeeding adequacy	156	39.0
7.	Factors that influence breast milk production	140	35.0
8.	Advantage of breastfeeding	124	31.0
9.	Benefits of breastfeeding to the mother	80	20.0
10.	Positioning of baby after breastfeeding	33	8.3
11.	Initiation of breastfeeding after normal delivery	21	5.3
12.	Initiation of breastfeeding after caesarean section	2	0.5

From the above Table 4, it is depicted that the mothers had highest knowledge in the area regarding breastfeeding exclusivity [374(93.5%)] and the least knowledge was observed regarding initiation of breastfeeding after caesarean section [2(0.5%)].

### Section 3

#### Practices of the Postnatal Mothers Related To Breastfeeding

The practices related to breastfeeding of the postnatal mothers (n=400) were assessed using cross-sectional approach. A written questionnaire was used to determine the practices related to breastfeeding of the postnatal mothers like breastfeeding initiation, feeding regarding colostrums, breastfeeding status, feeding methods, food items that enhance milk production and use of supplementary feeds for the baby as measured by structured questionnaire along with open-ended questions to specify the reasons more appropriately. The distribution of postnatal mothers based on time of initiation of breastfeeding is shown in Figure 5.



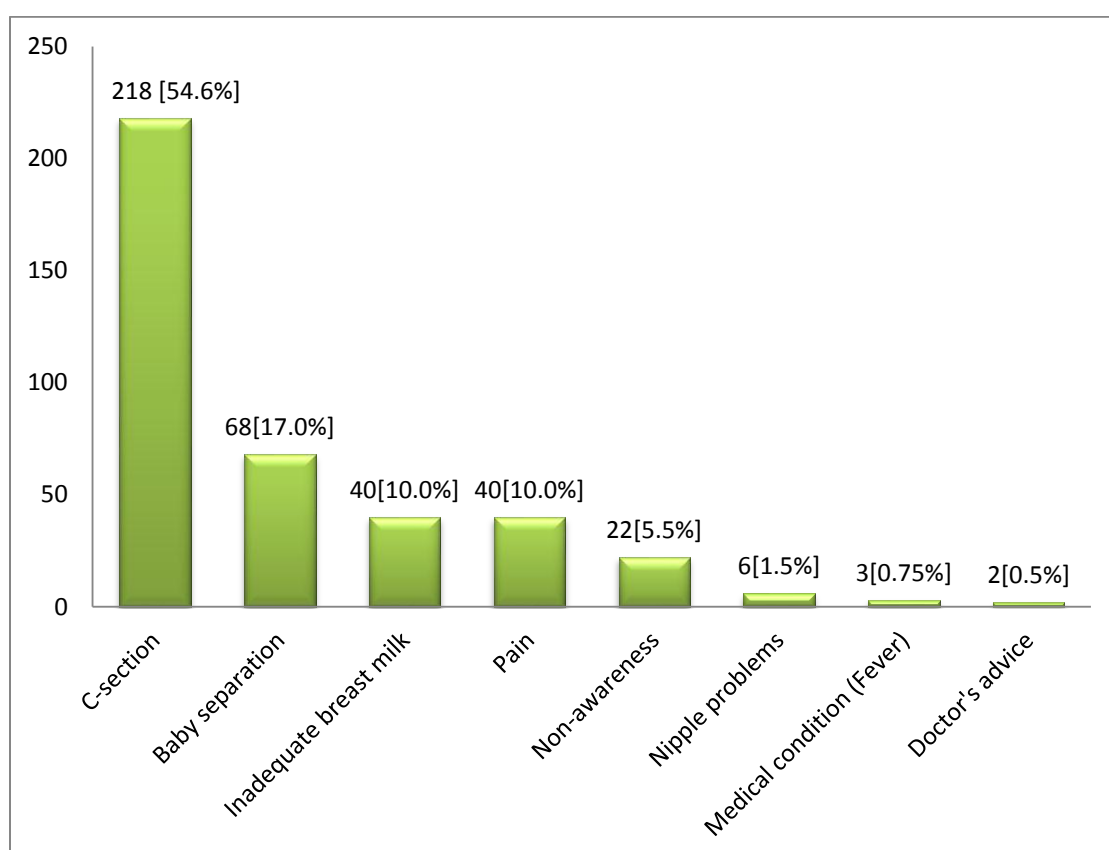
**Figure 5: Pie-diagram showing distribution of postnatal mothers based on time of initiation of breastfeeding**



From the figure 5, it is concluded that only [1(0.3%)] mother initiated breastfeeding within two hours of birth, [176(44.0%)] mothers initiated between 2-24 hours and [223(55.8%)] mothers started breastfeeding their newborns after 24 hours of birth.

The common reasons for delay in initiation of breastfeeding as stated by them are presented in Figure 6.

**n = 399**



**Figure 6: Bar graph showing various reasons of mothers for delay in initiating breastfeeding**

From the above figure 6, it is noted that c-section (lower segment caesarean section) remained the most common reason among the mothers for delay in initiating breastfeeding [218(54.6%)]. Other reasons included separation from the baby

[68(17.0%)], inadequate breast milk production [40(10.0%)], delivery pain [40(10.0%)], having inadequate knowledge about breastfeeding initiation [22(5.5%)], nipple problem [6(1.5%)], medical illness [3(0.75%)] and doctor's advice [2(0.5%)].

The distribution of postnatal mothers based on type of delivery is shown in the table 5.

**Table 5: Distribution of the postnatal mothers based on the type of delivery and time of initiation of breastfeeding**

**n = 400**

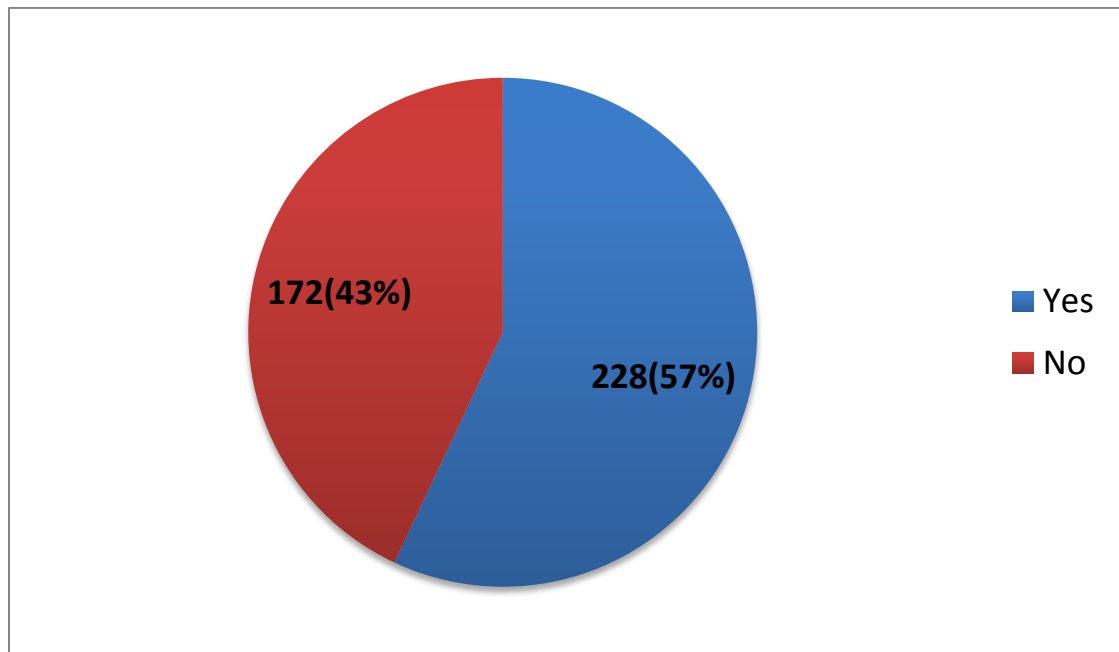
S.No.	Time of initiation of breastfeeding	Normal Vaginal Delivery (n=117)	Assisted Delivery (n=54)	LSCS (n=229)
		f (%)	f (%)	f (%)
1.	Within 2 hours	1(0.8%)	0(0%)	0(0%)
2.	2 – 24 hours	55(47.0%)	23(42.5%)	98(42.7%)
3.	>24 hours	61(52.1%)	31(57.4%)	131(57.2%)

From the table 5 it is concluded that only one mother [1(0.8%)] who had undergone normal vaginal delivery had initiated breastfeeding within two hours of life. Majority of the postnatal mothers who had undergone LSCS [131(57.2%)], normal vaginal delivery [61(52.1%)] and assisted delivery [31(57.4%)] had shown delay in breastfeeding initiation (>24 hours).

The distribution of postnatal mothers based on colostrums feeding is shown in Figure

7

**n = 400**

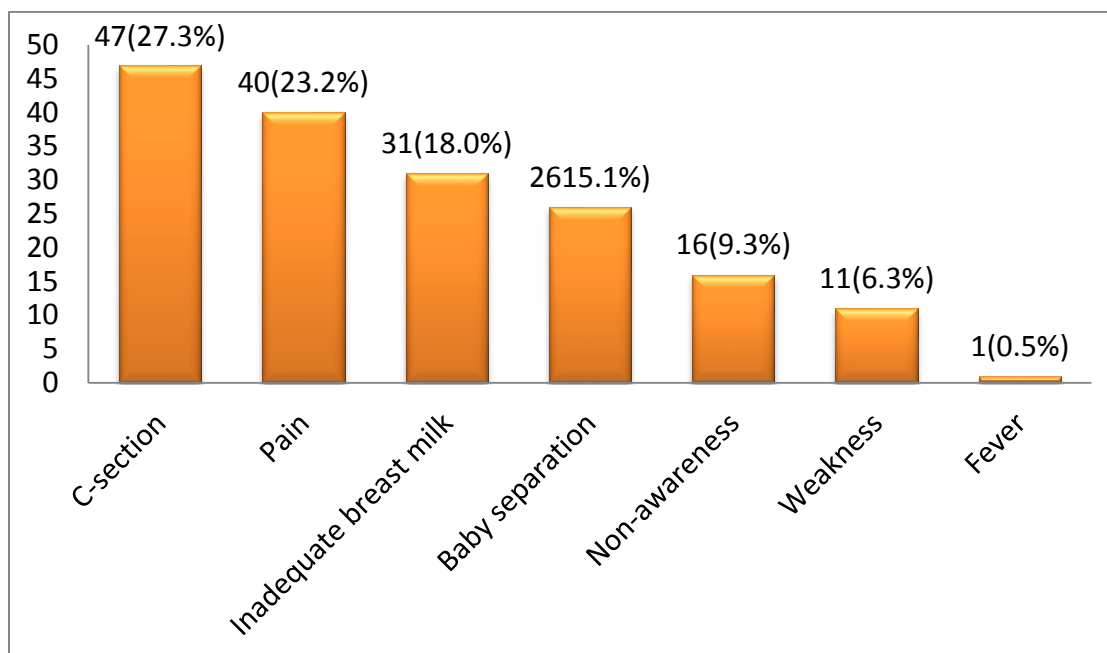


**Figure 7 : Pie-diagram showing the distribution of postnatal mothers based on colostrum feeding**

From the figure 7, it is concluded that majority of the mothers [228(57.0%)] offered colostrums to their newborns, however, [172(43.0%)] mothers did not give colostrum feeds to the babies.

The various reasons stated by the postnatal mothers for not offering colostrum are presented in figure 8.

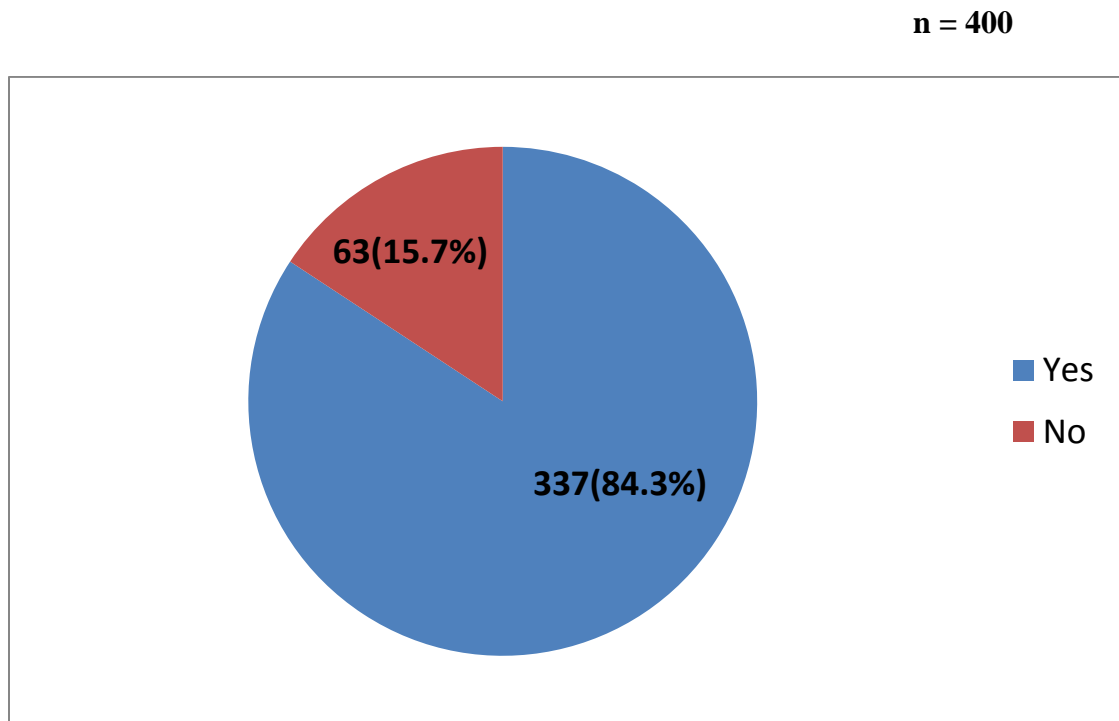
n = 172



**Figure 8 : Bar graph showing various reasons of mothers for not offering colostrum at different intervals of time**

From the above figure 8, it is noted that c-section (lower segment caesarean section) remained the most common reason among the mothers for not offering colostrum [47(27.3%)]. Other reasons included pain, separation from the baby, inadequate breast milk production, non-awareness, weakness and fever.

The distribution of postnatal mothers based on breastfeeding status is shown in Figure 9.



**Figure 9 : Pie-diagram showing the distribution of postnatal mothers based on breastfeeding status**

From the figure 9, it is depicted that majority of the mothers [337(84.3%)] were breastfeeding their babies while [63(15.7%)] were not doing so.

The following table 6 shows the breastfeeding status of the postnatal mothers at different intervals of time.

**Table 6: Distribution of the postnatal mothers based on the specific practices related to breastfeeding (present breastfeeding status)**

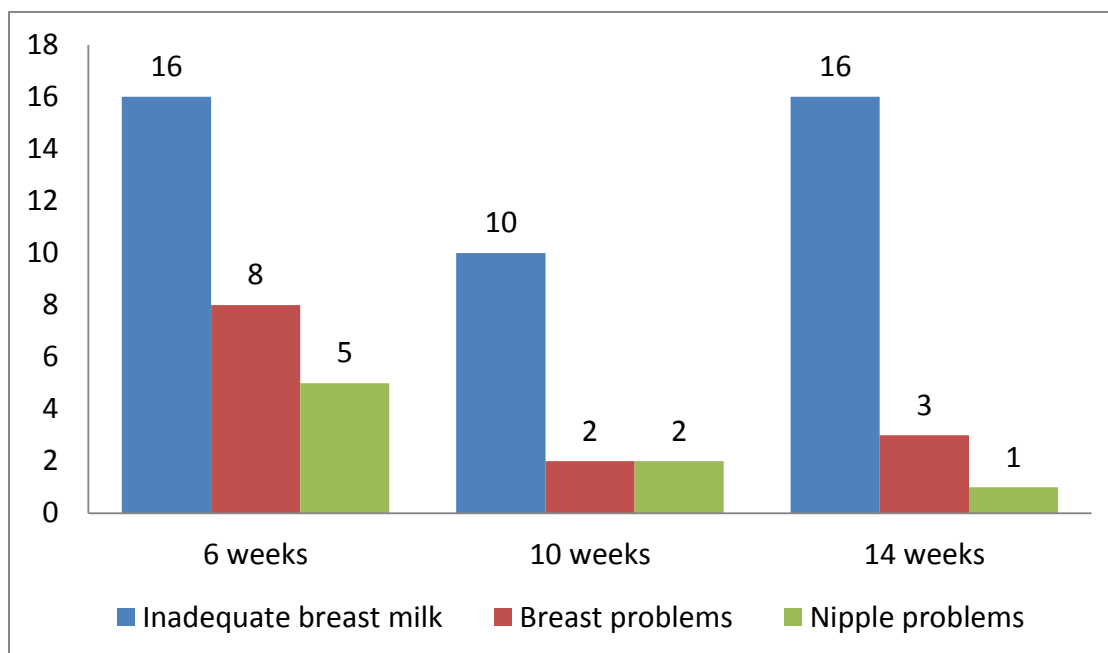
**n = 400**

<b>Practices related to breastfeeding</b>	<b>Mothers at 6 weeks (n = 140)</b>	<b>Mothers at 10 weeks (n = 111)</b>	<b>Mothers at 14 weeks (n = 149)</b>
Currently breastfeeding	<b>f (%)</b>	<b>f (%)</b>	<b>f (%)</b>
a) Yes	123 ((87.8%)	106 (95.4%)	108 (72.4%)
b) No	17 (12.1%)	5 (4.5%)	41 (27.5%)

From the table 6, it is concluded that at 6 weeks postpartum majority of the mothers [123(87.8%) were breastfeeding their babies in comparison to 10 weeks [106(95.4%)] and 14 weeks [72.4%].

The various reasons stated by mothers for not breastfeeding their babies are presented in the following figure 10.

**n = 63**

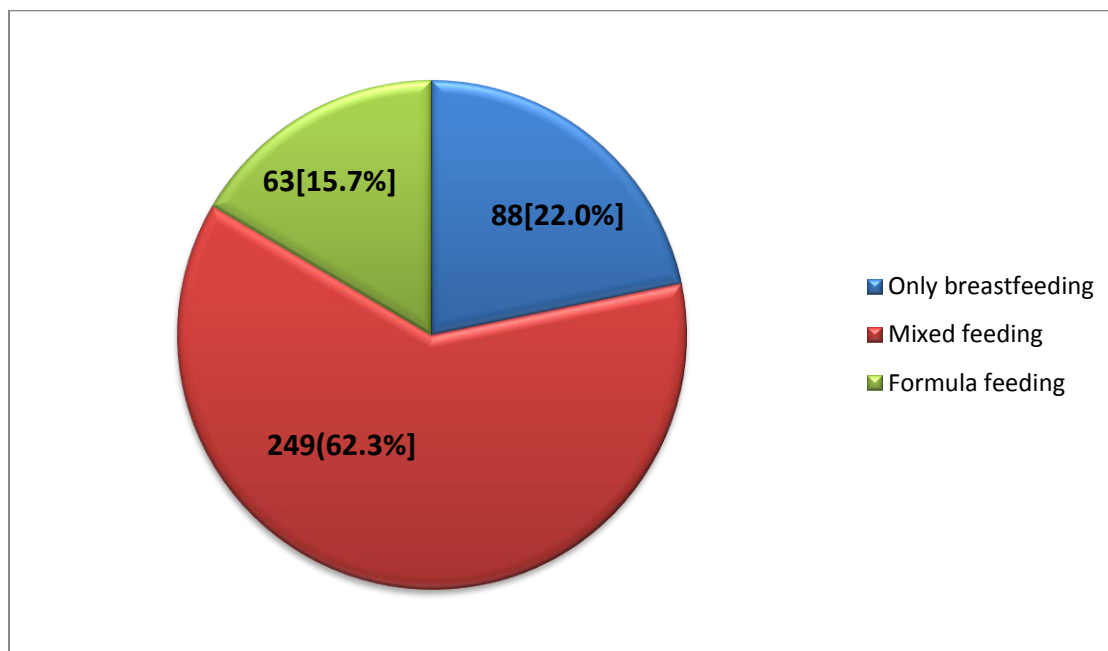


**Figure 10: Bar graph showing various reasons of mothers for not breastfeeding the baby at different intervals of time**

From the above figure 10, it is noted that out of 400 mothers, [63(15.7%)] mothers did not breastfeed their infants. Inadequate breast milk remains the commonest reason among the mothers for not breastfeeding their infants at 6 weeks, 10 weeks and at 14 weeks postpartum. Other reasons included breast problems and nipple problems.

The distribution of postnatal mothers based on feeding method is shown in Figure 11.

**n = 400**



**Figure 11 : Pie-diagram showing the distribution of postnatal mothers based on feeding method**

From the figure 11, it is depicted that majority of the mothers [249(62.3%)] were offering mixed feeds (both breast milk as well as formula feeds) to the babies. Only [88(22.0%)] mothers gave breast milk and [63(15.7%)] gave formula feeds to the babies.

The following table 7 shows the feeding methods of the postnatal mothers at different intervals of time.



**Table 7: Distribution of the postnatal mothers based on the specific practices related to breastfeeding (feeding method)**

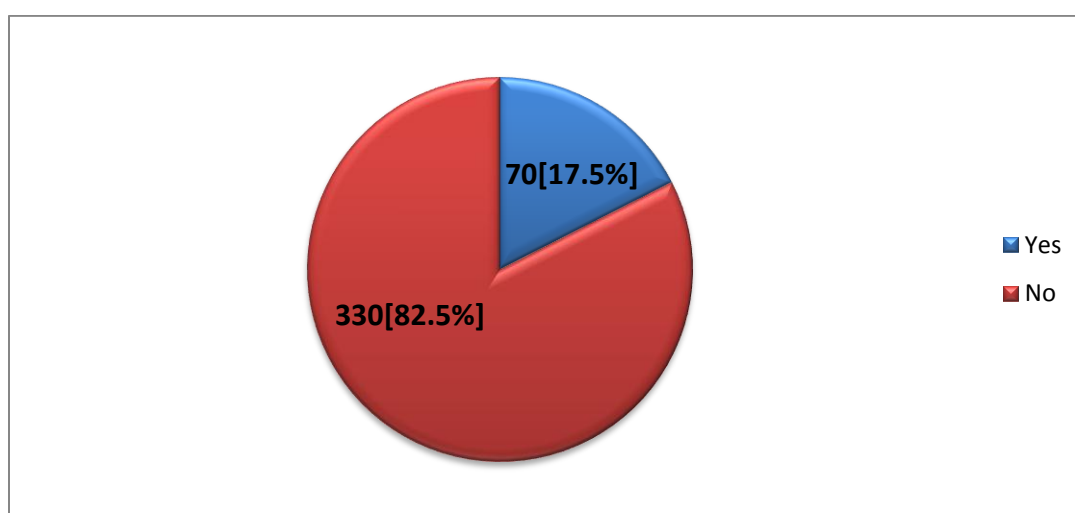
**n = 400**

<b>Practices related to breastfeeding</b>	<b>At 6 weeks (n = 140)</b>	<b>At 10 weeks (n = 111)</b>	<b>At 14 weeks (n = 149)</b>
<b>Feeding method</b>	<b>f (%)</b>	<b>f (%)</b>	<b>f (%)</b>
a) Only breast milk	43 (30.7%)	32 (28.8%)	13 (8.7%)
b) Mixed feeding	91 (65.0%)	55 (49.5%)	103 (69.1%)
c) Formula feeding	6 (4.28%)	24 (21.6%)	33 (22.1%)

From the table 7, it is concluded that majority of the mothers were offering mixed feedings to their babies at 6 weeks postpartum [91(65.0%)] and at 14 weeks postpartum [103(69.1%)].

The distribution of postnatal mothers based on the use of food items taken by the mothers to enhance breast milk production is shown in Figure 12.

**n = 400**

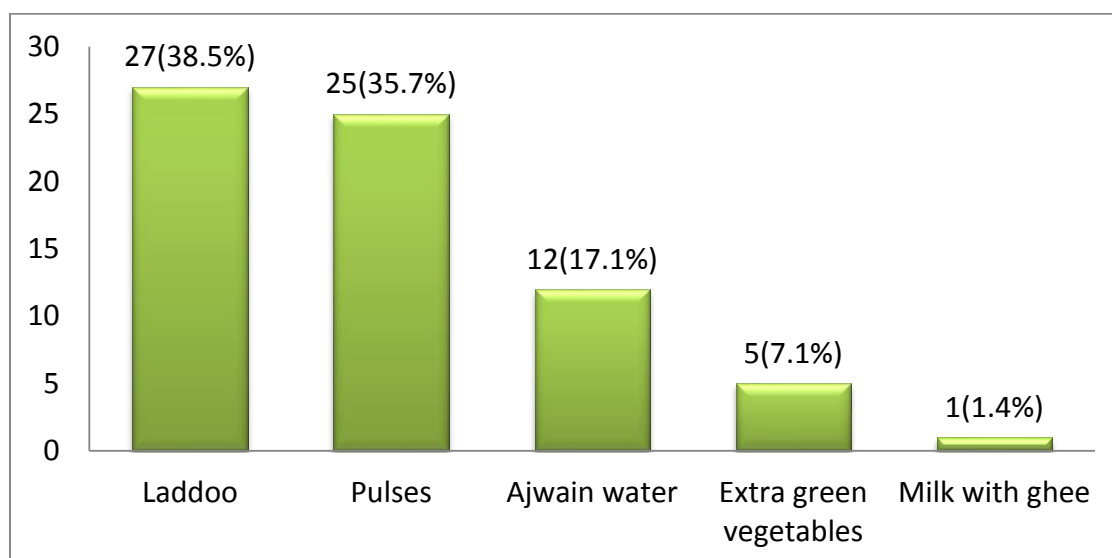


**Figure 12 : Pie-diagram showing the distribution of postnatal mothers based on use of food items taken by the mothers to enhance breast milk production**

From the figure 12, it is depicted that majority of the mothers [330(82.5%)] were not taking any kind of food items that would enhance their breast milk production. Only [70(17.5%)] mothers were taking some food items for increasing their breast milk production.

The various food items taken by the postnatal mothers to enhance the breast milk production are presented in figure 13.

**n = 70**



**Figure 13: Bar graph showing various food items taken by the postnatal mothers to enhance breast milk production at different intervals of time**

From the above figure 13, it is noted that out of 400 mothers, [70(17.5%)] mothers were taking food items that would enhance the breast milk production. Majority of the mothers [27(38.5%)] added prepared laddoo in their diet believing that it would add on to the breast milk production. Other food items taken by the mothers included pulses [25(35.7%)], ajwain water [12(17.1%)], extra green vegetables [5(7.1%)] and milk with pure ghee [1(1.4%)].

## Section 4

### Problems of the Postnatal Mothers Related To Breastfeeding

The problems faced by the postnatal mothers (n=400) related to breastfeeding was assessed using cross-sectional approach. A structured check-list was prepared to assess the problems of the mothers related to breastfeeding up to six months partum.

The distribution of postnatal mothers based on the problems related to breastfeeding is presented below.

**Table 8: Distribution of postnatal mothers based on the problems related to breastfeeding at different intervals of time**

**n = 400**

S.No.	Problems related to breastfeeding	At 6 weeks	At 10 weeks	At 14 weeks
		(n = 140)	(n = 111)	(n = 149)
		f (%)	f (%)	f (%)
1.	Feeling tired or fatigue	125 (31.3%)	106 (26.5%)	119 (29.8%)
2.	Latching difficulties	133 (33.3%)	96 (24.0%)	88 (22.0%)
3.	Inadequate milk production	127 (31.8%)	93 (23.3%)	76 (19.0%)
4.	Breastfeeding too difficult/ time consuming	118 (29.5%)	101 (25.3%)	70 (17.5%)
5.	Sore nipple	87 (21.8%)	56 (14.0%)	11 (2.8%)
6.	Infant refusal to breastfeed	44 (11.0%)	35 (8.8%)	23 (5.8%)

7.	Breast engorgement	59 (14.8%)	36 (9.0%)	0 (0%)
8.	Mother-infant separation	2 (0.5%)	8 (2.0%)	7 (1.8%)
9.	Flat/inverted nipple	12 (3.0%)	3 (0.8%)	1 (0.3%)
10.	Poor maternal mood	11 (2.8%)	5 (1.3%)	2 (0.5%)
11.	Nipple infection	6 (1.5%)	1 (0.2%)	0 (0%)

From the above table 8, it is concluded that majority of the mothers had reported feeling of tiredness or fatigue at 6 weeks [125(31.3%)], at 10 weeks [106(26.5%)] and at 14 weeks [119(29.8%)]. Mothers also faced problems of latching difficulties and inadequate breast milk production. They also felt that breastfeeding is time consuming. Other reported problems of the mothers included mothers sore nipples, infant refusal to breastfeed, problem of engorgement, mother-infant separation, flat/inverted nipples, poor maternal mood and nipple infection.

## Phase II

### Section 5

#### Background Information of the Primigravid Mothers

This section describes the characteristics of samples of both the experimental and control groups in terms of background information and is described in terms of frequency and percentage in Table 9.

**Table 9: Distribution of the primigravid mothers in the study groups based on their background information**

**n=100**

S.No	Background Information	Experimental Group		Control Goup		Chi-square	p-value
		f	%	f	%		
<b>1.</b>	<b>Age</b>						
1.1	21-25 yrs	18	36	22	44	0.713	0.700
1.2	26-30 yrs	28	56	25	50		
1.3	31-35 yrs	4	8	3	6		
	<b>Mean±S.D.</b>	<b>26.38±3.64</b>		<b>25.66±3.72</b>			
<b>2.</b>	<b>Maternal Education</b>						
2.1	No formal education	0	0	0	0	4.344	0.127
2.2	Primary	10	20	14	28		
2.3	Secondary	23	46	13	26		
2.4	College/ University	17	34	23	46		
<b>3.</b>	<b>Religion</b>						
3.1	Hindu	48	96	50	100	2.041	0.153
3.2	Muslim	2	4	0	0		
<b>4.</b>	<b>Occupation</b>						

4.1	Working	8	16	10	20	0.271	0.795
4.2	Non-working	42	84	40	80		
<b>5.</b>	<b>Type of Family</b>						
5.1	Nuclear	42	84	43	86	0.078	1.000
5.2	Joint	8	16	7	14		
<b>6.</b>	<b>Type of Delivery</b>						
6.1	Normal	20	40	16	32	2.132	0.345
6.2	Assisted	5	10	10	20		
6.3	Caesarean section	25	50	24	48		

From the above table 9, it is concluded that there were no discernible variations between the samples in control and experimental groups. Therefore, inferring that the primigravid mothers in both the groups came from the same population. The mothers in both the groups were uniform in terms of their background information.

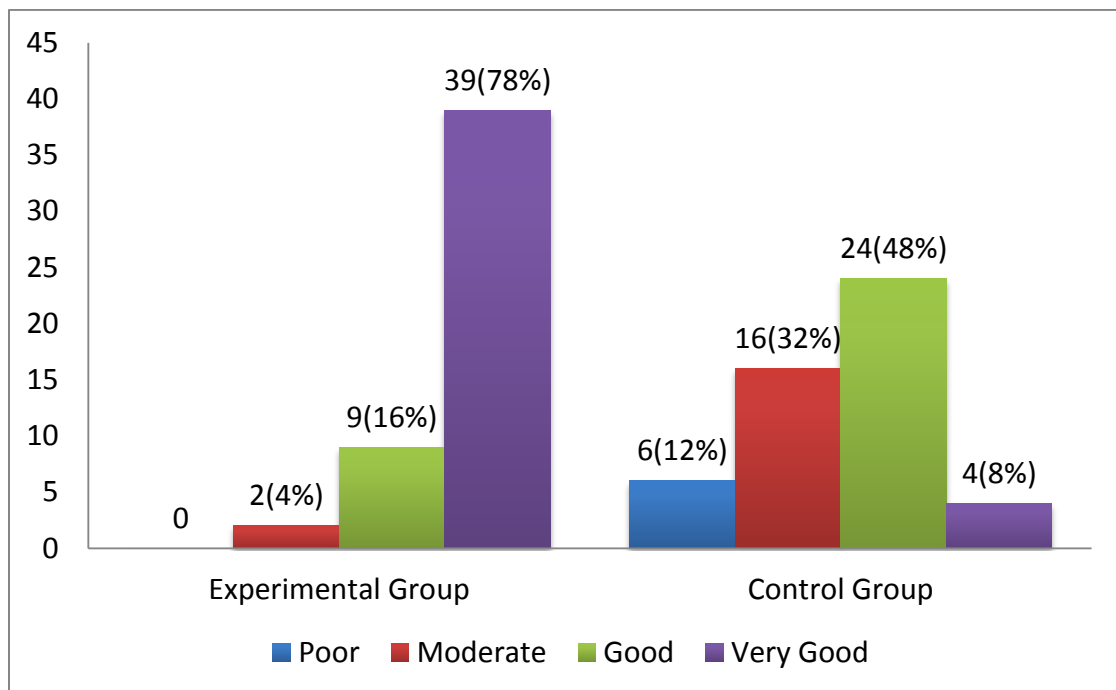
## Section 6

### Comparison of Breastfeeding Self-Efficacy between the Groups

The effectiveness of CBPP on breastfeeding self-efficacy among the primigravid mothers was assessed using the Breastfeeding Self-Efficacy Scale -Short Form (BSES-SF).

The distribution of experimental and control group based on breastfeeding self-efficacy is presented in Figure 14.

**n = 100**



**Figure 14: Bar diagram showing breastfeeding self-efficacy of postnatal mothers on the third day postpartum**

From the above figure 14, it is concluded that on the third day postpartum many primigravid mothers of the experimental group had very good breastfeeding self-

efficacy [39(78.0%)] in comparison to control group [4(8.0%)]. Better breastfeeding self-efficacy was found in the control group [24(48.0%)] than in the experimental group [9(18.0%)]. In comparison to the control group [16(32.0%)], mothers in the experimental group exhibited moderate breastfeeding self-efficacy [2(4.0%)]. While none of the mothers in the experimental group reported low breastfeeding self-efficacy, [6(12.0%)] of the mothers in the control group did.



The breastfeeding self-efficacy scores of the primigravid mothers between the groups are presented in Table 10.

**Table 10: Self-efficacy scores of primigravid mothers in breastfeeding**

**n = 100**

<b>Groups</b>	<b>Maximum Score</b>	<b>Mean±S.D.</b>	<b>Range</b>	<b>Median</b>	<b>Inter-Quartile Range (IQR)</b>	<b>p-value</b>
Experimental	70	57.94±6.01	35 - 64	60	61-57	<0.001
Control	70	42.20±9.69	22 - 62	44	47-36	

**Mann Whitney U Test (195.50)**

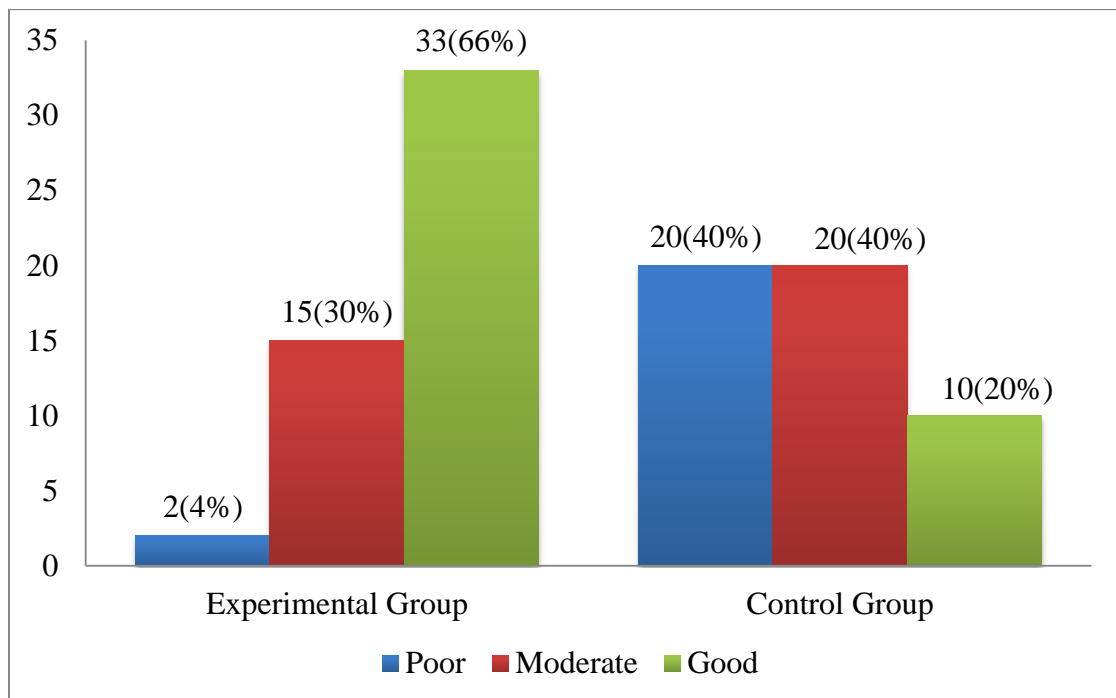
From table 10, it is found that the experimental group median is 60 with inter-quartile range of 61-57 as compared to control group median which is 44 with inter-quartile range of 47-36. Significant variations between the groupings were discovered ( $p < 0.001$ ). Therefore, it is concluded that  $H_1$  is accepted i.e., in comparison to the control group, the experimental group had increased breastfeeding self-efficacy on the third day postpartum.

## Section 7(a)

### Comparison of Breastfeeding Practices between the Experimental Group and Control Group on the Third Day Postpartum

The observed breastfeeding practices of the primigravid mothers were assessed on the third day postpartum using the Bristol Breastfeeding Assessment Scale. It has four items – Positioning, Attachment, Sucking and Swallowing to measure the breastfeeding pattern of the babies.

n = 100



**Figure 15: Distribution of primigravid mothers in experimental and control group based on the observed breastfeeding practices (Bristol Breastfeeding Assessment Scale) on third day postpartum**

From the above figure 15, it is concluded that on third day post partum in experimental group only [2(4.0%)] mothers showed poor breastfeeding practices as compared to control group [20(40.0%)], [15(30.0%)] mothers had moderate breastfeeding practices as compared to control group [20(40.0%)] and [33(66.0%)] mothers showed good breastfeeding practices as compared to control group [10(20.0%)].

The effectiveness of intervention (CBPP) on breastfeeding practices of primigravid mothers on the third day postpartum is described in Table 11.

**Table 11: Comparison of observed breastfeeding practices between the groups on third day postpartum**

**n = 100**

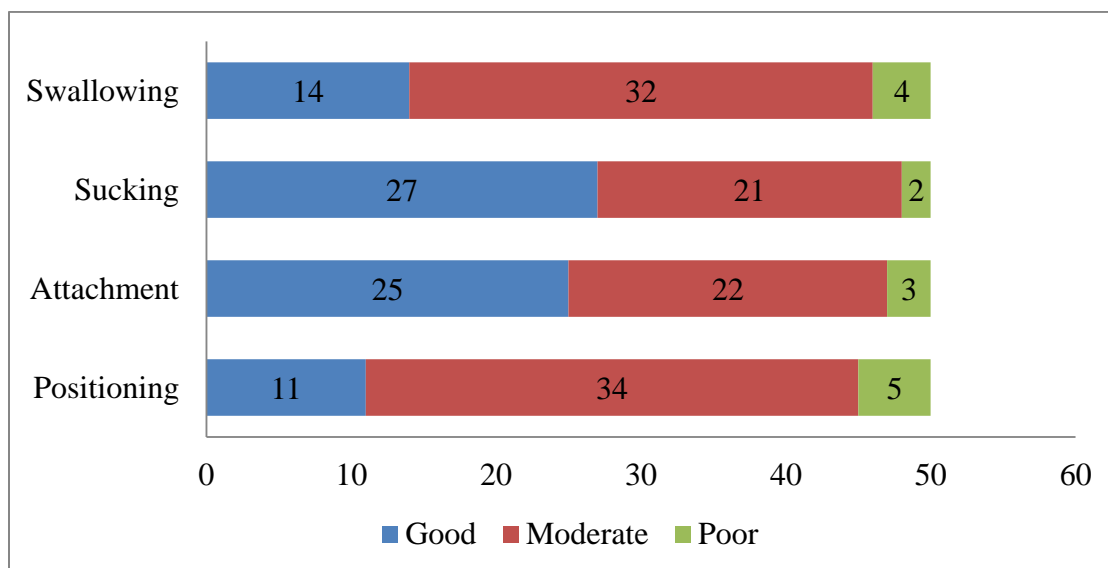
<b>Groups</b>	<b>Maximum Score</b>	<b>Mean±S.D.</b>	<b>Range</b>	<b>Median</b>	<b>IQR</b>	<b>p-value</b>
Experimental Group	8	5.60±1.22	1 - 8	6	6-5	p<0.001
Control Group	8	3.34±1.90	1 - 7	3	5-2	

**Mann Whitney U Test (545.0)**

From table 11, it is found that the median of experimental group was 6 with inter-quartile range of 6-5 as compared to control group median which was 3 with inter-quartile range of 5-2. Significant disparities between the two groups were discovered (p<0.001). Therefore, it is concluded that H<sub>2</sub> is accepted i.e., compared to the control group, breastfeeding was better in the experimental group on the third day postpartum.

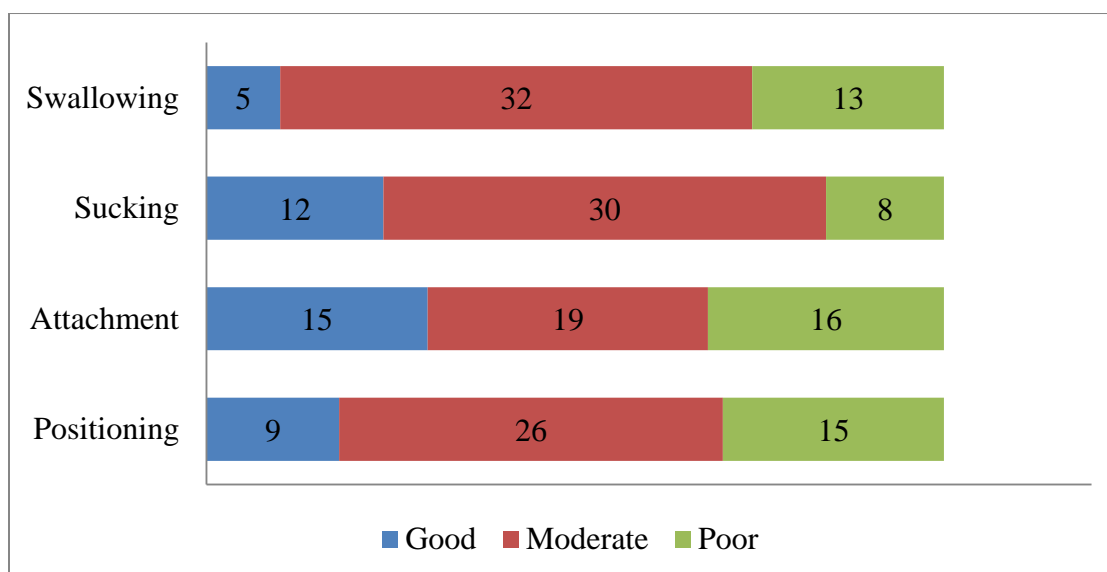
The different aspects of breastfeeding practices such as Positioning, Attachment, Sucking and Swallowing between the groups are presented in the figure 16.

**n = 50**



**Figure 16: Distribution of mothers in the experimental group based on the specific aspects of breastfeeding practices (Bristol Breastfeeding Assessment Scale)**

From the above figure 16, it is concluded that in the experimental group with respect to positioning of the infant and hearing of the swallowing sound, many mothers had shown moderate breastfeeding practice. However, with respect to sucking and attachment aspect, majority of the mothers had shown good breastfeeding practice.



**Figure 17: Distribution of mothers in the control group based on the specific aspects of breastfeeding practices (Bristol Breastfeeding Assessment Scale)**

From the above figure 17, it is concluded that in the control group majority of the mothers had shown moderate breastfeeding practice with respect to positioning of the infant, attachment, and hearing of suck and swallow sound.

## Section 7(b)

### Comparison of Breastfeeding Practices between the Groups

The breastfeeding practices of the primigravid mothers were assessed on the third day, at six weeks and at six months postpartum using a structured questionnaire. The effectiveness of CBPP on breastfeeding practices among primigravid mothers is discussed below.

**Table 12: Comparison of samples regarding breastfeeding practices on third day postpartum**

$$n = (50+50) = 100$$

S.No.	Breastfeeding Practices	Experimental Group (n=50)		Control Group (n=50)		Chi-square	p-value
		f	%	f	%		
<b>1.</b>	<b>Breastfeeding initiation</b>						
1.1	Within 2 hours	30	60	5	10	30.352	0.001*
1.2	2-24 hours	19	38	37	74		
1.3	>24 hours	1	2	8	16		
<b>2.</b>	<b>Colostrum feeding</b>						
2.1	Yes	48	96	35	70	11.977	0.001*
2.2	No	2	4	15	30		
<b>3.</b>	<b>Breastfeeding duration</b>						
3.1	3-5 minutes	2	4	18	36		
3.2	5-10 minutes	2	4	10	20		

3.3	10-15 minutes	12	24	21	42	51.702	0.001*
3.4	15-20 minutes	34	68	1	2		
<b>4.</b>	<b>Plan for exclusive breastfeeding</b>						
4.1	Yes	48	96	29	58	21.682	0.001*
4.2	No	0	0	1	2		
4.3	Not sure	2	4	20	40		
<b>5.</b>	<b>Feeding method</b>						
5.1	Only breastfeeding	44	88	19	38	27.318	0.001*
5.2	Mixed feeding	02	04	17	34		
5.3	Only formula feeding	04	08	14	28		
<b>6.</b>	<b>Use of galactogogues</b>						
6.1	Yes	10	20	12	24	0.056	1.000
6.2	No	40	80	38	76		
<b>7.</b>	<b>Night time feeds</b>						
7.1	Yes	48	96	34	68	0.233	0.810
7.2	No	2	4	16	32		
<b>8.</b>	<b>Breastfeeding frequency in 24 hours</b>						
8.1	<8 times	4	8	10	20	2.990	0.148
8.2	>8 times	46	92	40	80		
<b>9.</b>	<b>Baby calm and relaxed after feeding</b>						

9.1	Yes	44	88	44	88	0.000	1.000
9.2	No	6	12	6	12		
<b>10.</b>	<b>Suck/swallow sound heard</b>						
10.1	Yes	36	72	18	36	13.043	0.001*
10.2	No	14	28	32	64		
<b>11.</b>	<b>Urine wet diapers in 24 hours</b>						
11.1	1-2	12	24	11	22	0.167	0.920
11.2	3-4	20	40	22	44		
11.3	5-6	18	36	17	34		
<b>12.</b>	<b>Stool diapers in 24 hours</b>						
12.1	1-2	41	82	41	82	0.000	1.000
12.2	2-4	9	18	9	18		
<b>13.</b>	<b>Comfortable breasts and nipples after each feed</b>						
13.1	Yes	39	78	26	52	9.313	0.002*
13.2	No	7	14	10	20		

**\*Significant at  $p < 0.05$**

The aforementioned table contrasted the experimental group's and control group's breastfeeding habits to look for any appreciable variations on the third day postpartum. Chi-square and Fisher's exact test were performed to find the association between the two groups. The results showed that with regard to breastfeeding practices of the mothers on third day postpartum. Significant variations between the



samples of the experimental and control groups were discovered, such as breastfeeding initiation ( $p=0.001$ ), colostrums feeding ( $p=0.001$ ), breastfeeding duration ( $p=0.001$ ), plan for exclusive breastfeeding ( $p=0.001$ ), feeding method ( $p=0.001$ ), hearing of suck/swallow sound during each feed ( $p=0.001$ ) and comfortable breasts and nipples after each feed ( $p=0.002$ ).

**Table 13: Comparison of samples regarding breastfeeding practices at 6 weeks postpartum**

**n = (50+50) = 100**

S.No	Breastfeeding Practices	Experimental Group (n=50)		Control Group (n=50)		Chi-square	p-value
		f	%	f	%		
<b>1.</b>	<b>Plan for exclusive breastfeeding</b>						
1.1	Yes	44	88	28	56	15.556	0.001*
1.2	No	0	0	10	20		
1.3	Not sure	6	12	12	24		
<b>2.</b>	<b>Feeding method</b>						
2.1	Only breastfeeding	39	78	22	44	12.556	0.002*
2.2	Mixed feeding	7	14	21	42		
2.3	Only formula feeding	4	8	7	14		
<b>3.</b>	<b>Breastfeeding frequency in 24 hours</b>						
3.1	<8 times	2	4	2	4	0.000	1.000
3.2	>8 times	48	96	48	96		
<b>4.</b>	<b>Baby calm and relaxed after feeding</b>						
4.1	Yes	46	92	40	80	2.990	0.084
4.2	No	4	8	10	20		

<b>5.</b>	<b>Suck/swallow sound heard</b>						
5.1	Yes	45	90	26	52	17.533	0.001*
5.2	No	5	10	24	48		
<b>6.</b>	<b>Urine wet diapers in 24 hours</b>						
6.1	3-4	7	14	5	10	14.625	0.001*
6.2	5-6	41	82	28	56		
6.3	>6	2	4	17	34		
<b>7.</b>	<b>Stool diapers in 24 hours</b>						
7.1	1-2	44	88	32	64	7.895	0.005*
7.2	2-4	6	12	18	36		
<b>8.</b>	<b>Comfortable breasts and nipples after each feed</b>						
8.1	Yes	40	80	37	74	2.333	0.072
8.2	No	6	12	6	12		

**\*Significant at  $p < 0.05$**

The results showed that with regard to breastfeeding practices of the mothers at six weeks postpartum, significant correlation between the samples from the experimental and control groups was discovered, such as plan for exclusive breastfeeding ( $p=0.001$ ), feeding method ( $p=0.002$ ), hearing of suck/swallow sound during each feed ( $p=0.001$ ), urine wet diapers in 24 hours ( $p=0.001$ ) and stool diapers in 24 hours ( $p=0.005$ ).

**Table 14: Comparison of samples regarding breastfeeding practices between the groups at 6 months postpartum**

**n = (50+50) = 100**

S.No	Breastfeeding Practices	Experimental Group (n=50)		Control Group (n=50)		Chi-square	p-value
		f	%	f	%		
<b>1.</b>	<b>Feeding method</b>						
1.1	Only breastfeeding	42	84	20	40	33.499	0.001*
1.2	Mixed feeding	0	0	25	50		
1.3	Only formula feeding	8	16	5	10		
<b>2.</b>	<b>Urine wet diapers in 24 hours</b>						
2.1	3-4	4	8	0	0	5.908	0.040**
2.2	5-6	43	86	42	84		
2.3	>6	3	6	8	16		
<b>3.</b>	<b>Stool diapers in 24 hours</b>						
3.1	1-2	47	94	39	78	5.316	0.021*
3.2	2-4	3	6	11	22		
<b>4.</b>	<b>Comfortable breasts and nipples after each feed</b>						
4.1	Yes	38	76	31	62	10.746	0.002*
4.2	No	4	8	14	28		

**\*Significant at p<0.05**

**\*\*Fisher's exact test**

The breastfeeding practices of primigravid mothers were compared in the table above between the experimental group and the control group for statistically significant differences at six months after delivery. Chi-square and Fisher's exact test was performed to find the association between the two groups. The results showed that with regard to breastfeeding practices of the mothers at six months postpartum, significant correlation between the samples from the experimental and control groups was discovered, such as feeding method ( $p=0.001$ ), urine wet diapers in 24 hours ( $p=0.040$ ), stool diapers in 24 hours ( $p=0.021$ ) and comfortable breasts and nipples after each feed ( $p=0.002$ ).

Hence,  $H_2$  was accepted i.e., the experimental group had superior breastfeeding practices.

## Section 8

### Comparison of Breastfeeding Outcomes between the Groups

The breastfeeding outcomes between the groups was assessed by using the structured tool that helps to measure the breastfeeding outcomes of the primigravid postnatal mothers at different intervals of time i.e., on third day, at six weeks and at six months postnatally.

The effectiveness of CBPP on breastfeeding outcomes among primigravid mothers is discussed below.

**Table 15: Comparison of samples regarding breastfeeding outcomes between the groups at different intervals of time**

**n = (50+50) = 100**

S.No.	Breastfeeding Outcomes	Experimental group		Control Group		Chi-square	p-value
		f	%	f	%		
1.	Breastfeeding status						
1.1	Day 3	46	92	36	72	6.77	0.09
1.2	At 6 weeks	46	92	43	86	0.92	0.34
1.3	At 6 months	42	84	45	90	0.79	0.37
2.	Offered only breast milk						
2.1	Day 3	44	88	19	38	26.81	<0.01*
2.2	At 6 weeks	39	78	22	44	12.14	<0.01*

2.3	At 6 months	42	84	20	40	20.54	<0.01*
3.	Breastfeeding continuity up to 2 years of age						
3.1	Day 3	48	96	29	58	20.38	<0.01*
3.2	At 6 weeks	44	88	28	56	12.69	<0.01*
3.3	At 6 months	42	84	32	64	5.19	0.02*

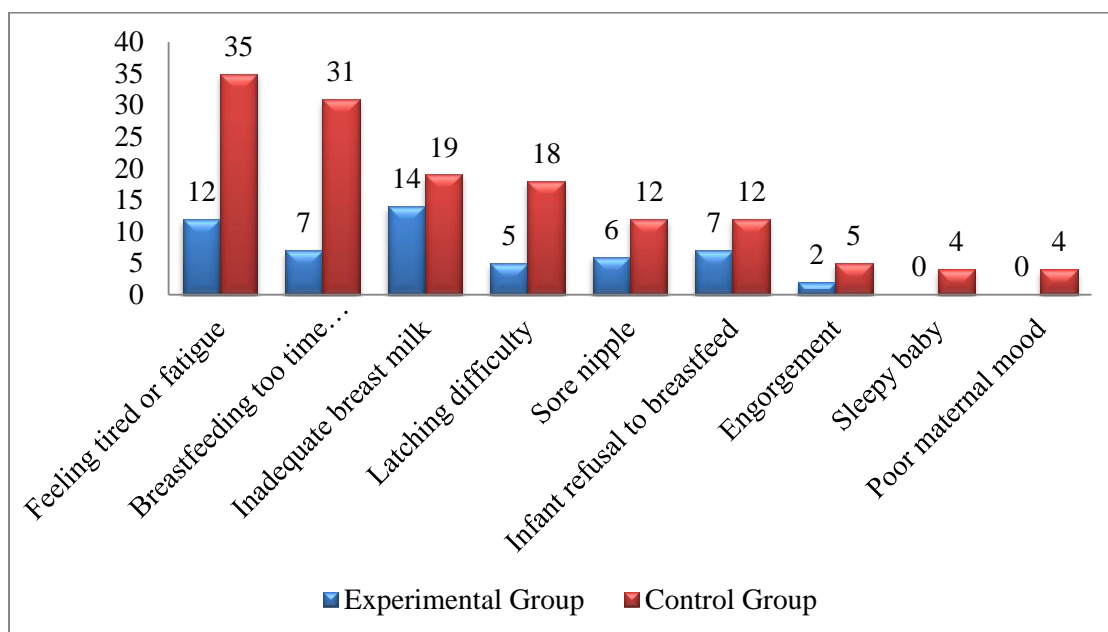
**\*Significant at p<0.05**

The breastfeeding outcomes of primigravid mothers were compared in the table above between the experimental group and the control group for statistically significant differences at day 3, 6 weeks and at 6 months after delivery. Chi-square test was performed to find the association between the two groups. The results showed that significant correlation between the samples from the experimental and control groups was discovered in terms of offering only breast milk (p<0.01) and breastfeeding continuity up to 2 years of age (p<0.01).

Hence, H<sub>3</sub> was accepted i.e., the experimental group had better breastfeeding outcomes.

The comparison of breastfeeding problems between the groups at different intervals of time are discussed below.

**n = (50+50) = 100**



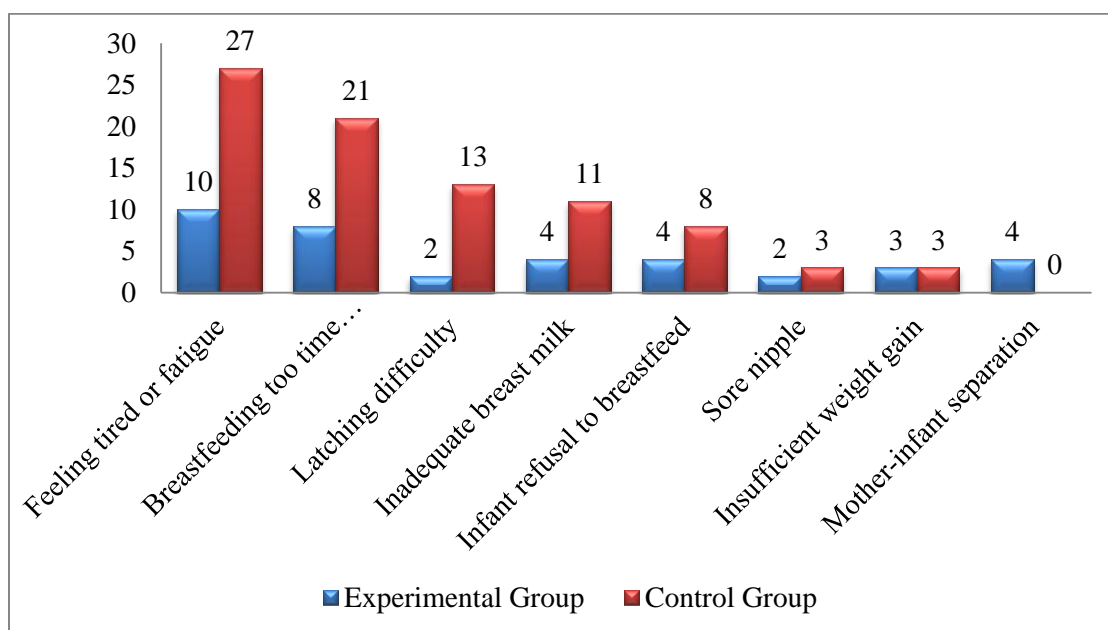
**Figure 18: Frequency distribution of primigravid mothers regarding breastfeeding problems on the third day postpartum**

From the above figure 18, it is concluded that most of the postnatal breastfeeding problems were experienced by the control group than experimental group on the third day postpartum. Most of the mothers in the control group perceived inadequate breast milk [19(38.0%)] as compared to experimental group [14(28.0%)]. Feeling of tiredness or fatigue was more experienced by the control group [35(70.0%)] than experimental group [12(24.0%)]. Control group also felt that breastfeeding was too time consuming [31(62.0%)] as compared to experimental group [7(14.0%)]. Infant refusal to breastfeeding was also noted by control group [12(24.0%)] than experimental group [7(14.0%)]. Latch difficulty was more in control group



[18(36.0%)] than experimental group [5(10.0%)]. Similarly, sore nipples were more common among control group [12(24.0%)] than experimental group [6(12.0%)]. Other problems that were reported by both the groups were flat/inverted nipples and breast engorgement. Problems like sleepy baby and poor maternal mood was found only in control group.

**n = (50+50) = 100**

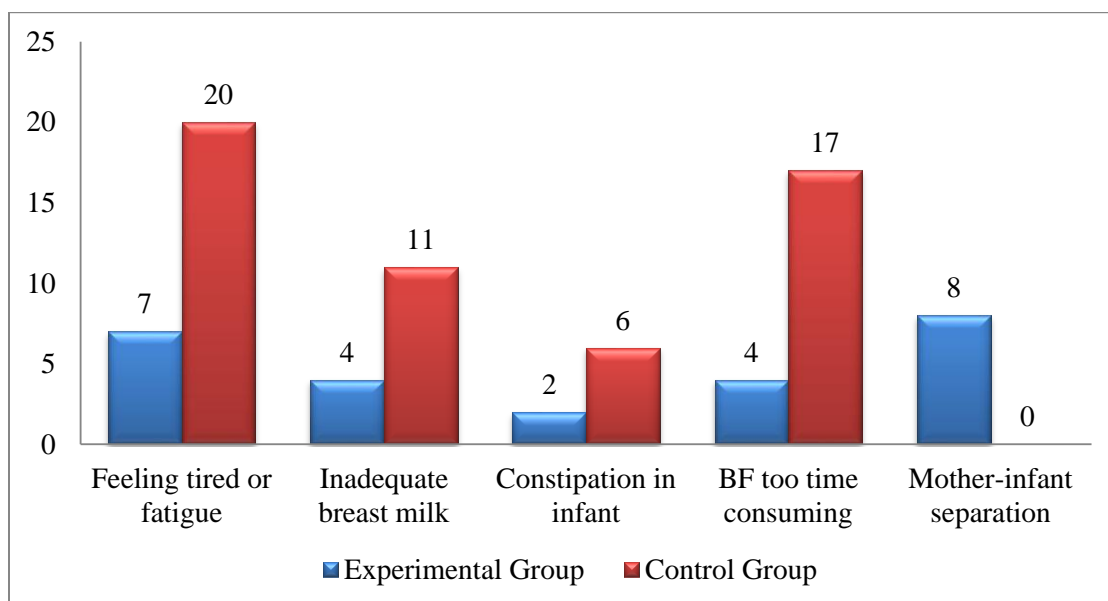


**Figure 19: Frequency distribution of primigravid mothers regarding breastfeeding problems at 6 weeks postpartum**

From the above figure 19, it is concluded that most of the postnatal breastfeeding problems were experienced by the control group than experimental group at 6 weeks postpartum. Feeling of tiredness or fatigue was more experienced by the control group [27(54.0%)] than experimental group [10(20.0%)]. Control group also felt that breastfeeding was too time consuming [21(42.0%)] as compared to experimental group [8(16.0%)]. Infant refusal to breastfeeding was also noted by control group [8(16.0%)] than experimental group [4(8.0%)]. Latch difficulty was more in control

group [13(26.0%)] than experimental group [2(4.0%)]. Other problems that were reported by both the groups were sore nipples and insufficient weight gain. Problem of mother-infant separation was found only in experimental group [4(8.0%)]

**n = (50+50) = 100**



**Figure 20: Frequency distribution of primigravid mothers regarding breastfeeding problems at 6 months postpartum**

From the above figure 20, it is concluded that most of the postnatal breastfeeding problems were experienced by the control group than experimental group at 6 months postpartum. Feeling of tiredness or fatigue was more experienced by the control group [20(40.0%)] than experimental group [7(14.0%)]. Control group also felt that breastfeeding was too time consuming [17(34.0%)] as compared to experimental group [4(8.0%)]. Inadequate breast milk was also noted by control group [11(22.0%)] than experimental group [4(8.0%)]. Insufficient weight gain was more in control group [5(10.0%)] than experimental group [2(4.0%)]. Constipation in infant was

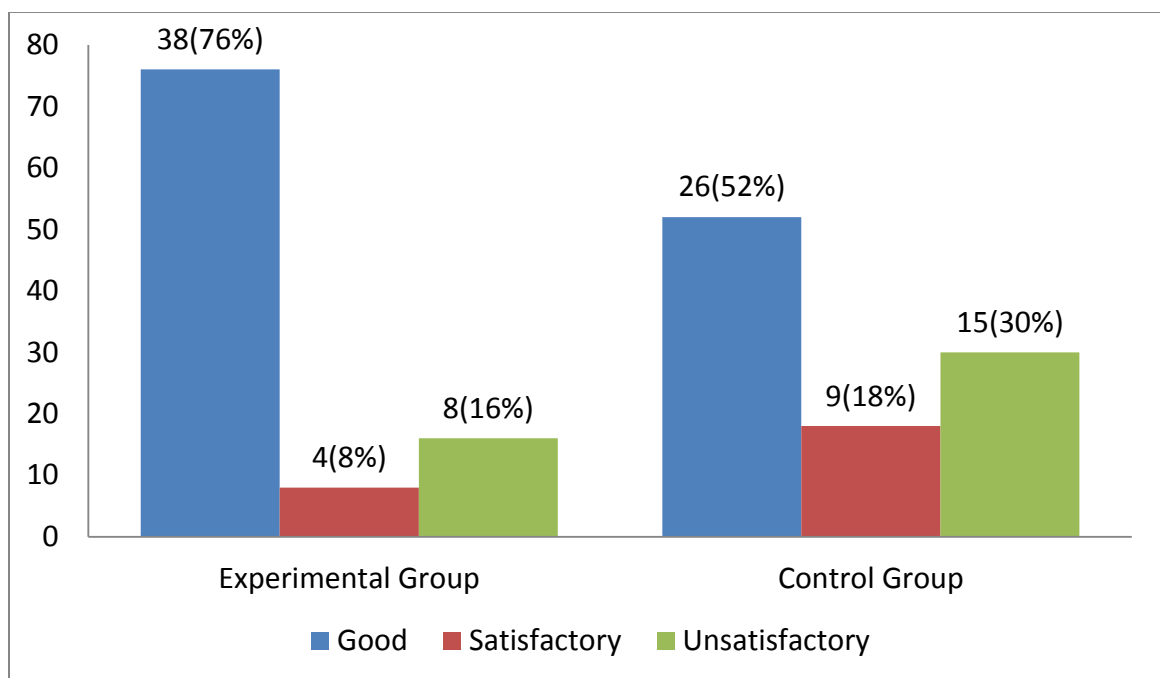
another common problem found more in control group [6(12.0%)] than experimental group [2(4.0%)]. Problem of mother-infant separation was found only in experimental group [8(16.0%)].

## Section 9

### Comparison of Breastfeeding Experience between the Groups

The breastfeeding experiences between the groups were assessed by using the structured questionnaire and data was collected telephonically using quantitative approach at 6 months postpartum.

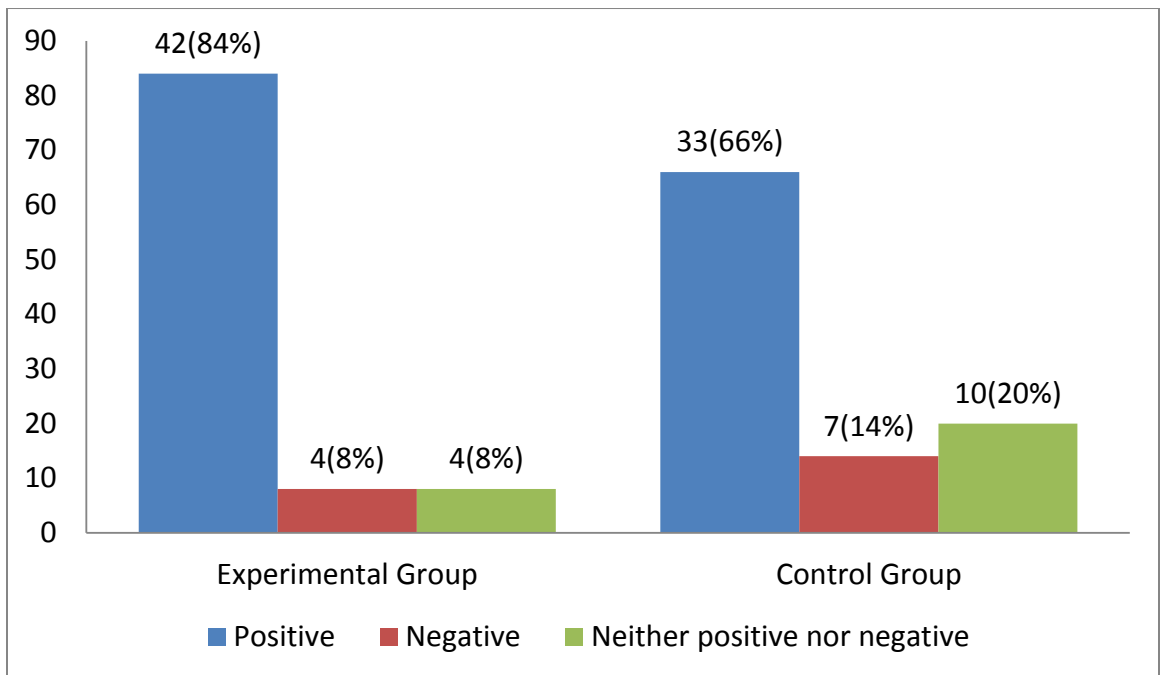
$n = (50+50) = 100$



**Figure 21: Percentage distribution of primigravid mothers based on their breastfeeding experience at 6 months postpartum**

From the above figure 21, the substantial differences were noted between the samples in the experimental group and control group, it can be said that breastfeeding experience was superior in the experimental group ( $p < 0.05$ ).

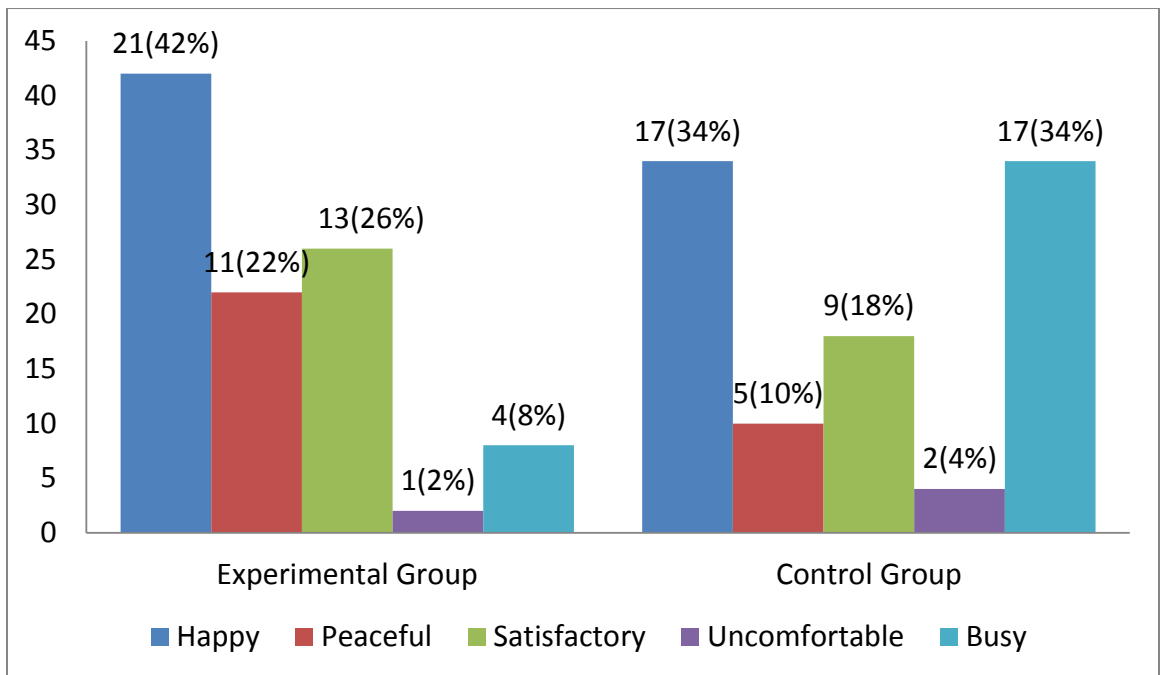
n = (50+50) = 100



**Figure 22: Percentage distribution of primigravid mothers based on their feeling regarding breastfeeding at 6 months postpartum**

From the above figure 22, the experimental group showed more positive experience [42(84%)] as compared to control group [33(66%)], therefore, it can be said that breastfeeding experience was superior in the experimental group.

n = (50+50) = 100



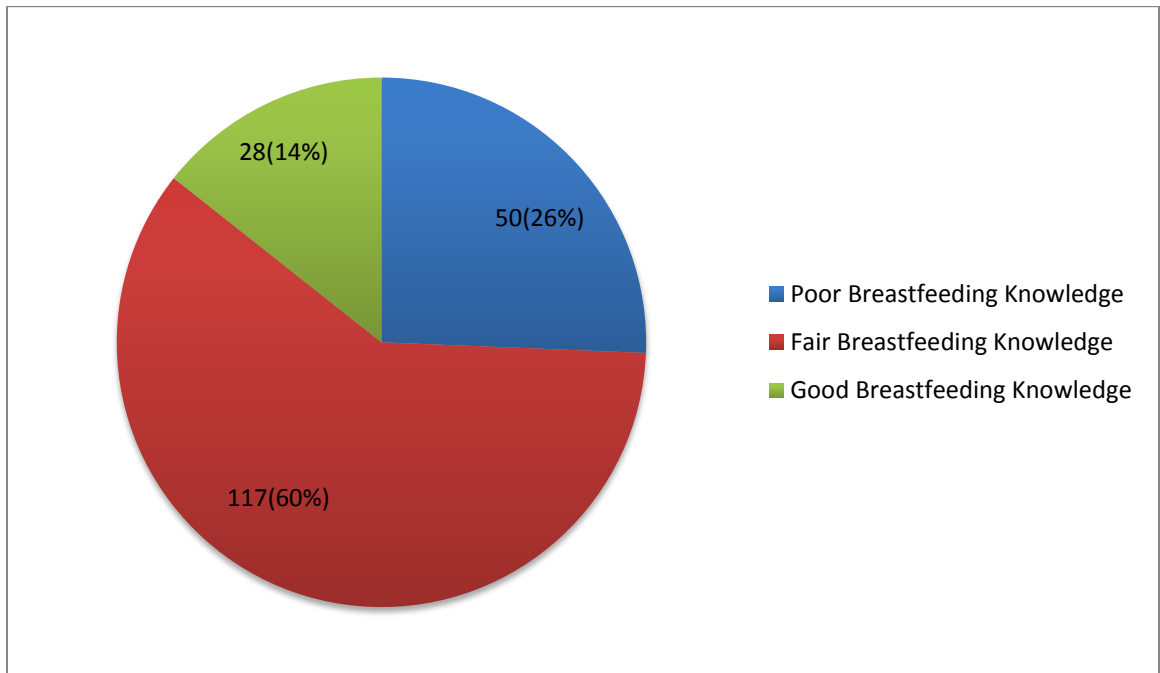
**Figure 23: Percentage distribution of primigravid mothers based on their overall breastfeeding experience at 6 months postpartum**

From the above figure 23, mothers in both the groups described their breastfeeding experience as joyful, happy, peaceful and satisfactory; while on the contrary some of the mothers described it as uncomfortable, busy and disappointing.

## ADDITIONAL DATA ANALYSIS

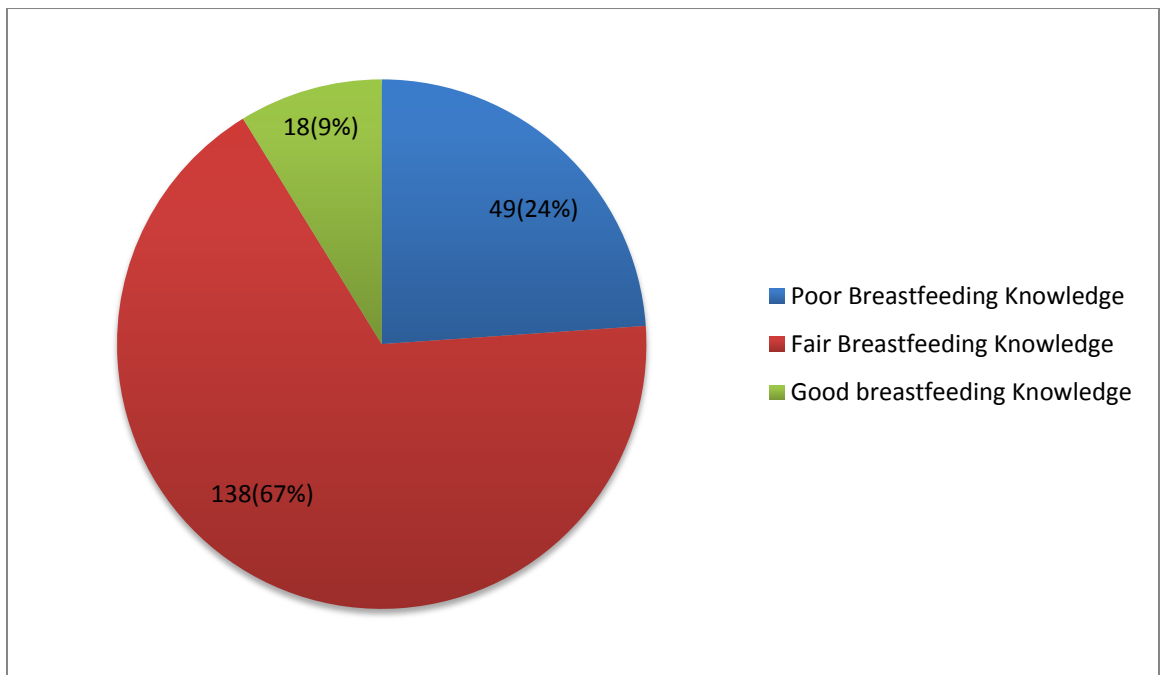
### Additional Analysis between Primigravida and Multigravida

n = 195



**Figure 24: Pie-diagram showing distribution of primigravid mothers based on their breastfeeding knowledge**

From the above figure 24, it is concluded that majority of the primigravid mothers had fair breastfeeding knowledge [117(60.0%)]. Only [28(14.0%)] mothers had good breastfeeding knowledge and [50(26.0%)] mothers showed poor breastfeeding knowledge.



**Figure 25: Pie-diagram showing distribution of multigravid mothers based on their breastfeeding knowledge**

From the above figure 25, it is concluded that majority of the multigravid mothers had fair breastfeeding knowledge [138(67.0%)]. Only [18(9.0%)] mothers had good breastfeeding knowledge and [49(24.0%)] mothers showed poor breastfeeding knowledge.

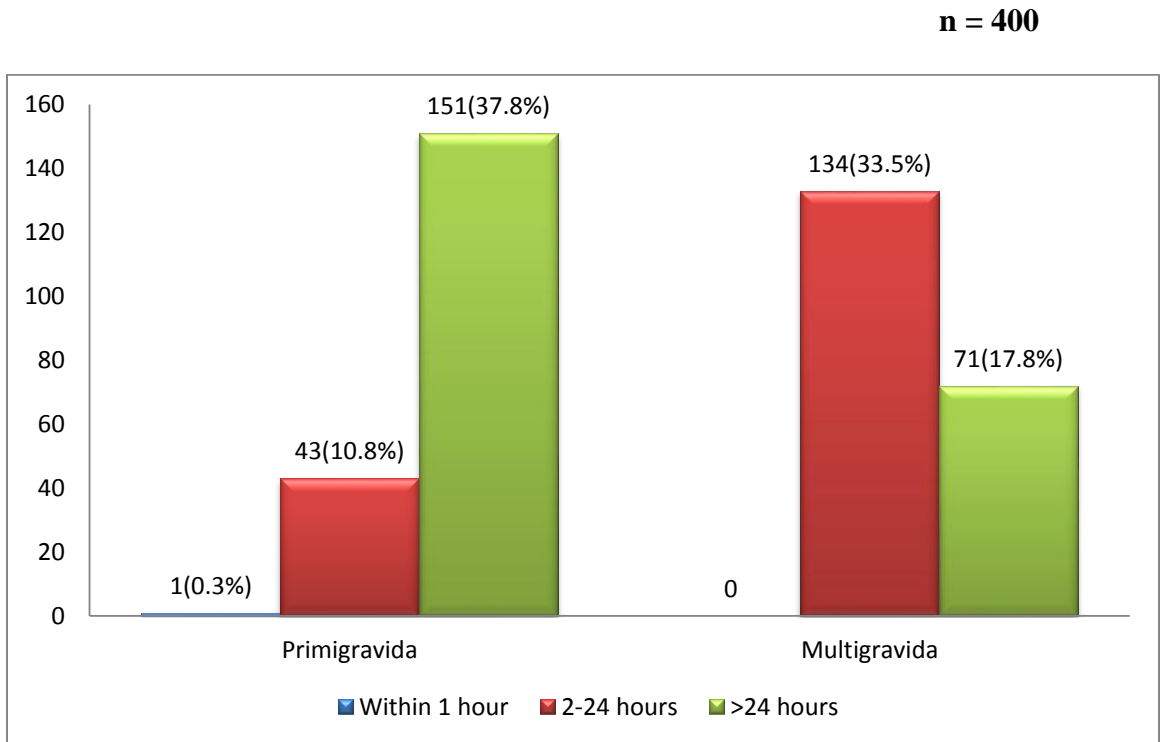


## PHASE I

### ADDITIONAL ANALYSIS BETWEEN PRIMIGRAVID & MULTIGRAVID

#### Practices of the Primigravida and Multigravida Related To Breastfeeding

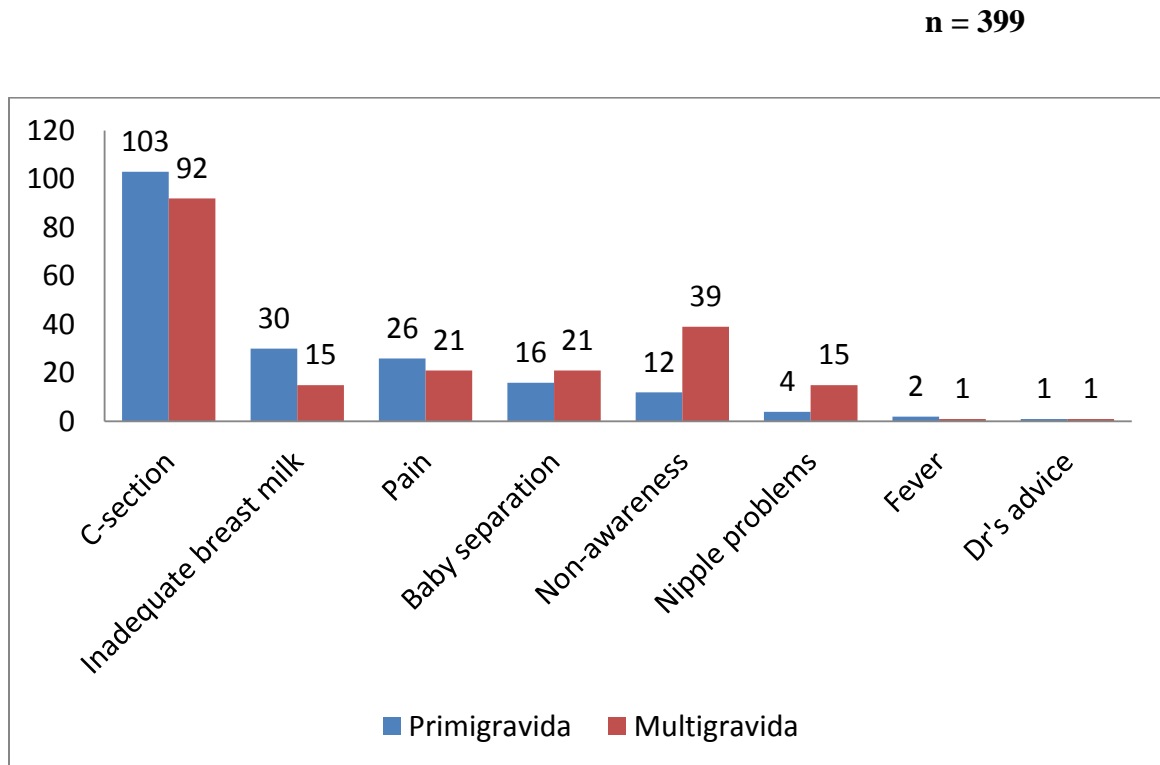
##### 1. Time of initiation of breastfeeding



**Figure 26: Distribution of primigravida and multigravida based on time of initiation of breastfeeding**

From the figure 26, it is concluded that among primigravid mothers (n =195) only [1(0.3%)] primigravid mother initiated breastfeeding within two hours of birth, [43(10.8%)] mothers initiated between 2-24 hours and [151(37.8%)] mothers started breastfeeding their newborns after 24 hours of birth. Among multigravid mothers (n = 205), majority of the mothers initiated breastfeeding between 2–24 hours [134(33.5%)] and [71(17.8%)] mothers initiated breastfeeding after 24 hours.

The common reasons for delay in initiation of breastfeeding as stated by them are presented in the figure 31.

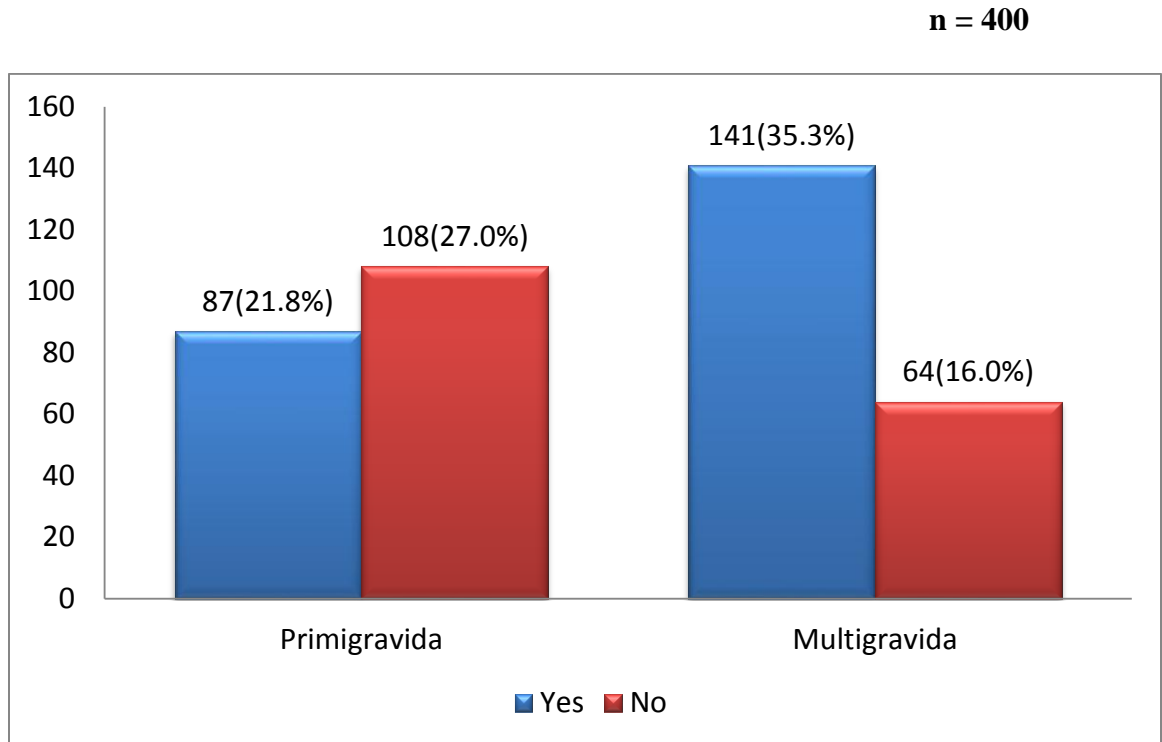


**Figure 27: Bar diagram showing various reasons of primigravida and multigravida for delay in initiating breastfeeding**

From the above figure 27, it is concluded that c-section remained the commonest reason for the delay among primigravid and multigravid mothers. Other reasons stated by the primigravid for the delay included inadequate breast milk, pain after delivery, separation from the baby while multigravid mothers reported inadequate knowledge regarding initiation of breastfeeding, pain following delivery, baby separation , perception of inadequate breast milk being the other common reasons for the delay.

## 2. Colostrum feeding

The distribution of primigravida and multigravida based on colostrum feeding is shown in Figure 32.

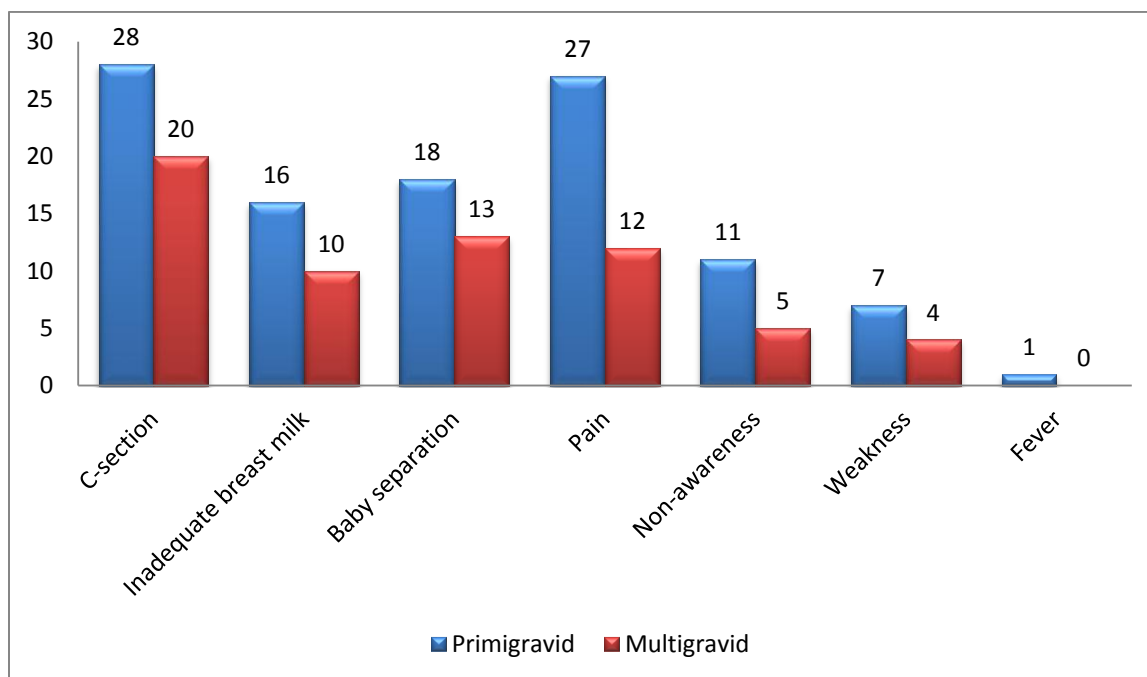


**Figure 28: Distribution of primigravida and multigravida mothers based on colostrum feeding**

From the figure 28, it is concluded that majority of the multigravid mothers [141(35.3%)] had offered colostrum to their babies as compared to primigravid mothers [87(21.8%)]. Majority of the primigravid mothers [108(27.0%)] had not given colostrum as compared to multigravid mothers [64(16.0%)].

The common reasons for not offering colostrum as stated by them are presented in the figure

n = 172

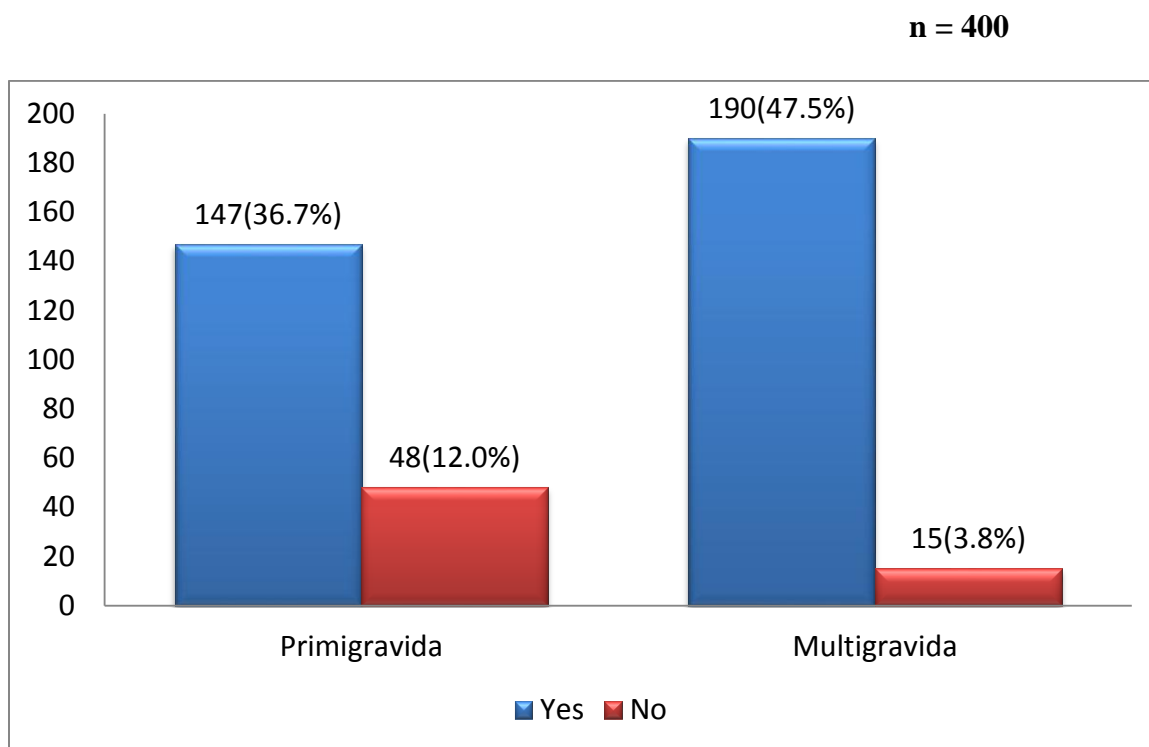


**Figure 29: Bar diagram showing various reasons of primigravida and multigravida for not offering colostrum**

From the figure 29, it is concluded that primigravid mothers faced more problems in offering colostrum to the babies. Majority have stated c-section and pain following the delivery being the major factors for not offering colostrum. Other stated problems were inadequate breast milk, separation from the baby following birth, inadequate knowledge, weakness and fever.

### 3. Breastfeeding status

The distribution of primigravida and multigravida based on breastfeeding status is shown in the figure 34.

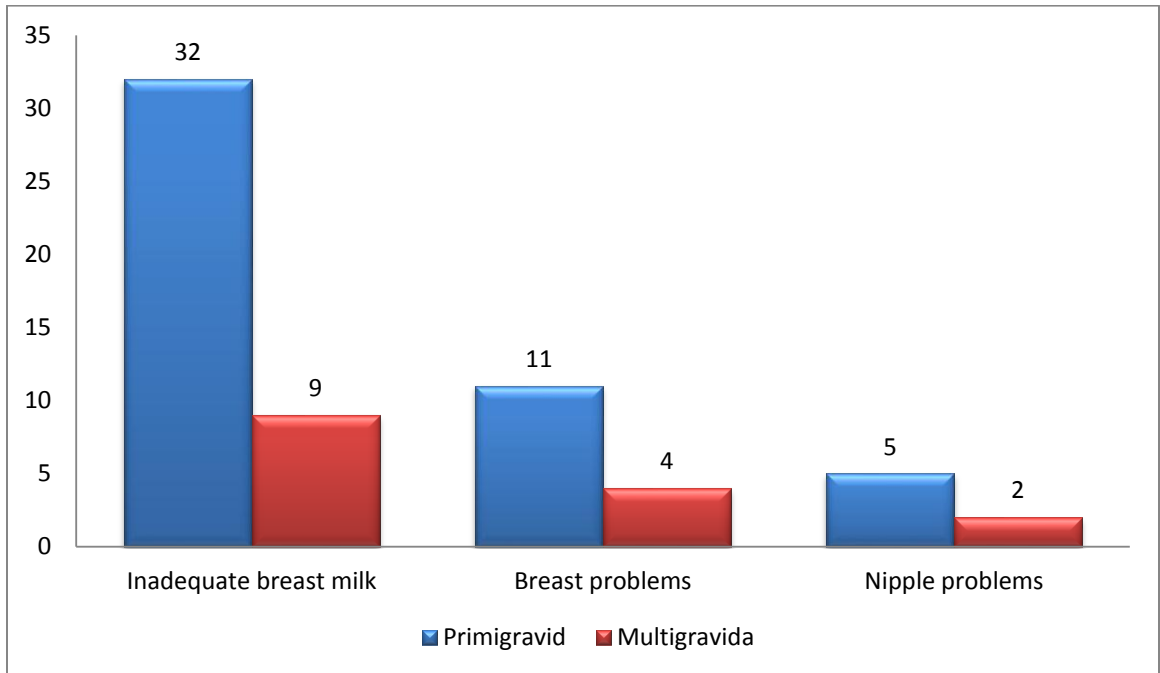


**Figure 30: Distribution of primigravida and multigravida mothers based on breastfeeding status**

From the figure 30, it is concluded that majority of the multigravid mothers [190(47.5%)] were breastfeeding their infants as compared to primigravid mothers [147(36.7%)]. Only [15(3.8%)] multigravid mothers did not breastfeed their infants as compared to primigravid mothers [48(12.0%)].

The common reasons for not offering breastfeeding to their infants as stated by them are presented in the figure 35.

**n = 63**

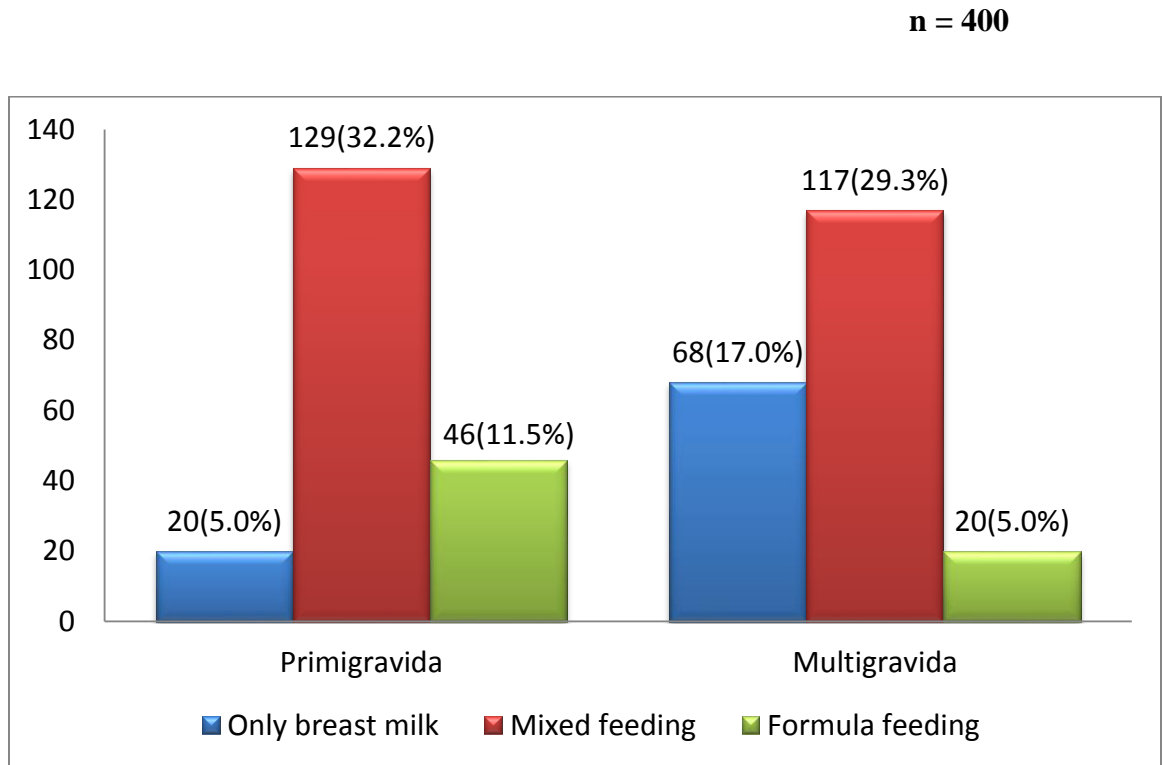


**Figure 31: Bar diagram showing various reasons of primigravida and multigravida for not breastfeeding the baby**

From the figure 31, it is concluded that majority of the primigravida mothers faced issues in breastfeeding their infants such as inadequate breast milk, breast problems and nipple problems as compared to multigravida mothers.

#### 4. Feeding method

The distribution of primigravida and multigravida based on feeding method is shown in the figure 36.



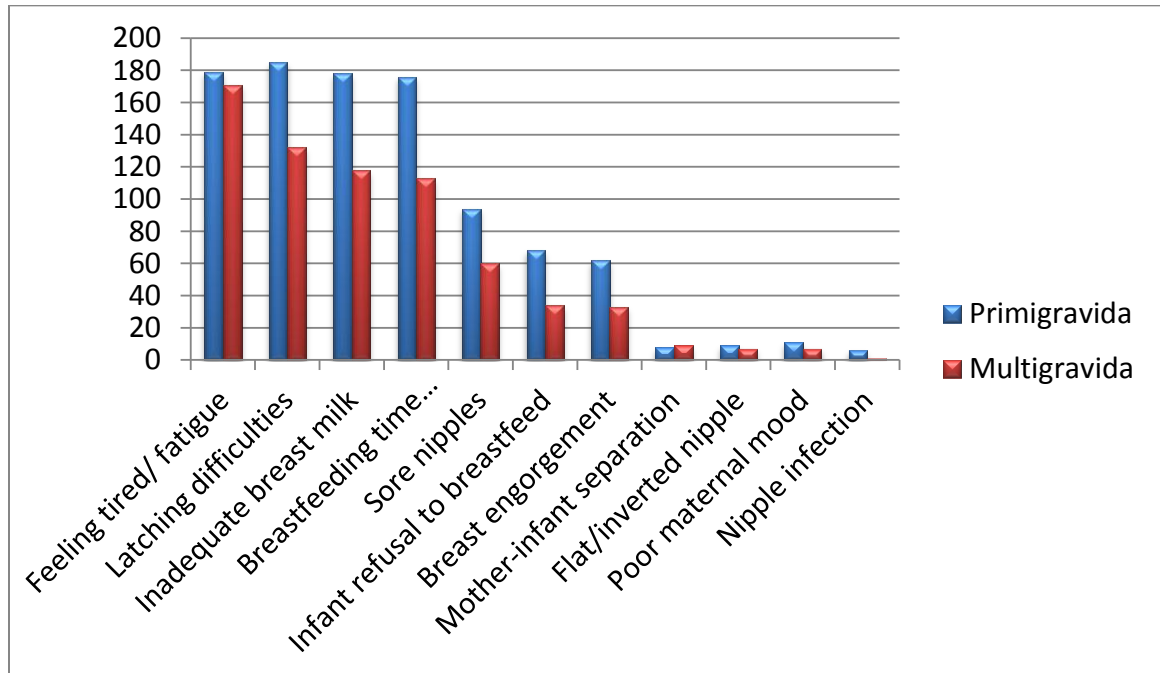
**Figure 32 : Distribution of primigravida and multigravida mothers based on feeding method**

From the above figure 32, it is concluded that majority of the primigravid [129(32.2%)] and multigravid mothers [117(29.3%)] were offering mixed feeding to their babies while only breast milk was given by [20(5.0%)] primigravid mothers as compared to [68(17.0%)] multigravid mothers. Formula feeding was given by [46(11.5%)] primigravid mothers as compared to [20(5.0%)] multigravid mothers.

## Problems of the Postnatal Mothers Related To Breastfeeding

The distribution of primigravida and multigravida based on the problems related to breastfeeding is presented below.

**n = 400**



**Figure 33: Distribution of primigravida and multigravida based on the problems related to breastfeeding**

From the above figure 33, it is concluded that majority of the breastfeeding problems such as feeling of tiredness/ fatigue, latching difficulties, inadequate breast milk production, breastfeeding too time consuming sore nipples etc. were faced by the primigravid mothers as compared to the multigravid mothers.



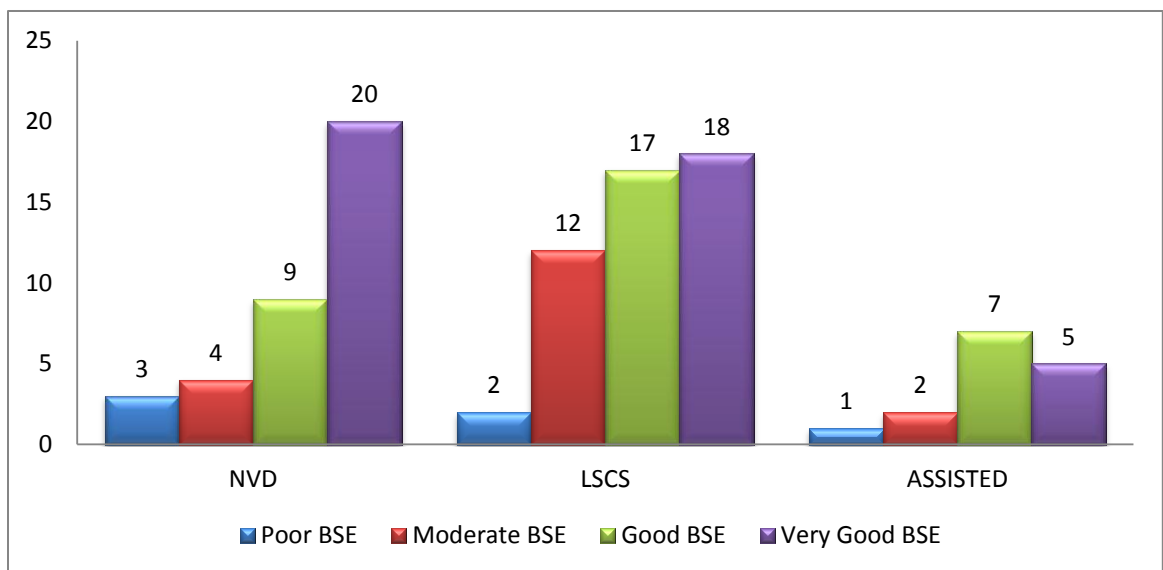
## PHASE II

### Additional Analysis

#### Comparison of Breastfeeding Self-Efficacy on the basis of Type of Delivery

The distribution of primigravid mothers based on breastfeeding self-efficacy is presented in the following figure 20.

**n = 100**

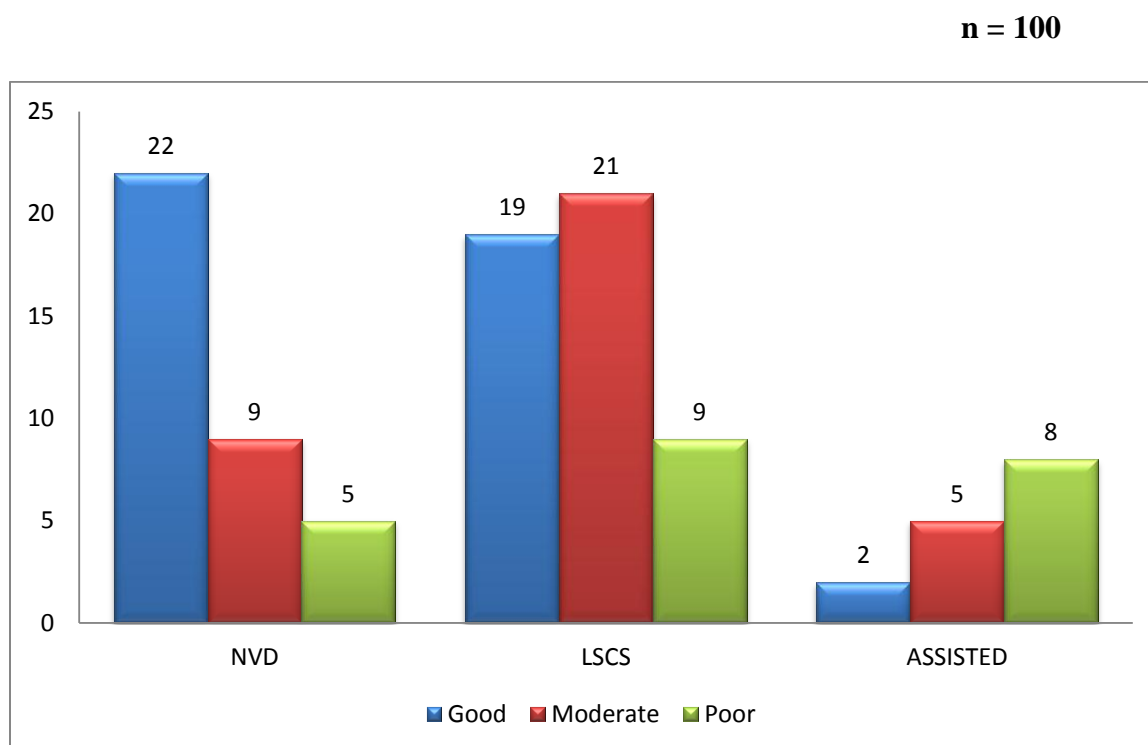


**Figure 34: Bar diagram showing breastfeeding self-efficacy of primigravid mothers on the third day postpartum based on the type of delivery**

From the above figure 34, it is concluded that majority of the primigravid mothers who had undergone normal vaginal delivery had shown very good breastfeeding self-efficacy [20(20.0%)] as compared to those who had undergone c-section [18(18.0%)] and assisted delivery [5(5.0%)]. Good breastfeeding self-efficacy is reported by [9(9.0%)] normal vaginal delivery mothers, [17(17.0%)] c-section mothers and [7(7.0%)] assisted delivery mothers.

### Comparison of Breastfeeding Practices on the basis of Type of Delivery on the Third Day Postpartum

The distribution of primigravid mothers based on breastfeeding practices is presented in the following figure 21.



**Figure 35: Bar diagram showing the distribution of primigravid mothers on the basis of type of delivery related to the observed breastfeeding practices (Bristol Breastfeeding Assessment Scale) on third day postpartum**

From the above figure 35, it is concluded that majority of the primigravid mothers who had undergone normal vaginal delivery [22(22.0%)] showed good breastfeeding practices as compared to those mothers who had undergone c-section [19(19.0%)] and assisted delivery [2(2.0%)]. Moderate breastfeeding practice was reported by the mothers who had undergone c-section [21(21.0%)] as compared to those who had

undergone normal vaginal delivery [9(9.0%)] and assisted delivery [5(5.0%)]. However, poor breastfeeding practices were maximum reported by c-section mothers [9(9.0%)] as compared to assisted delivery mothers [8(8.0%)] and normal vaginal delivery mothers [5(5.0%)].

### **Comparison of Breastfeeding Practices on the basis of Type of Delivery at 6 Weeks Postpartum**

**Table 16: Comparison of samples regarding breastfeeding practices at 6 weeks postpartum**

**n = 100**

<b>S.No</b>	<b>Breastfeeding Practices</b>	<b>NVD</b>	<b>ASSISTED</b>	<b>LSCS</b>	<b>Chi-square</b>	<b>p-value</b>
		<b>f</b>	<b>f</b>	<b>f</b>		
<b>1.</b>	<b>Plan for exclusive breastfeeding</b>				5.34	0.25
1.1	Yes	28	13	31		
1.2	No	4	1	5		
1.3	Not sure	4	1	13		
<b>2.</b>	<b>Feeding method</b>				3.49	0.47
2.1	Only breastfeeding	22	12	27		
2.2	Mixed feeding	11	2	15		
2.3	Only formula feeding	3	1	7		
<b>3.</b>	<b>Breastfeeding frequency in 24 hours</b>				4.08	0.13
3.1	<8 times	3	1	0		
3.2	>8 times	33	14	49		
<b>4.</b>	<b>Baby calm and relaxed after</b>				3.30	0.19

	<b>feeding</b>					
4.1	Yes	33	14	39		
4.2	No	3	1	10		
<b>5.</b>	<b>Suck/swallow sound heard</b>				1.64	0.44
5.1	Yes	27	12	32		
5.2	No	9	3	17		
<b>6.</b>	<b>Urine wet diapers in 24 hours</b>				7.95	0.09
6.1	3-4	6	2	4		
6.2	5-6	23	7	39		
6.3	>6	7	6	6		
<b>7.</b>	<b>Stool diapers in 24 hours</b>				6.60	<b>0.03*</b>
7.1	1-2	30	14	32		
7.2	2-4	6	1	17		
<b>8.</b>	<b>Comfortable breasts and nipples after each feed</b>				3.12	0.21
8.1	Yes	26	13	31		
8.2	No	10	2	18		

**\*Significant at  $p < 0.05$**

From the above table 16, it is concluded that with regard to breastfeeding practices of the mothers at six weeks postpartum based on the type of delivery, significant correlation was discovered on the basis of stool diapers usage in 24 hours ( $p=0.03$ ).

## Comparison of Breastfeeding Practices on the basis of Type of Delivery at 6 Month Postpartum

**Table 17: Comparison of samples regarding breastfeeding practices at 6 month postpartum**

n = 100

S.No.	Breastfeeding Practices	NVD	ASSISTED	LSCS	Chi-square	p-value
		f	f	f		
<b>1.</b>	<b>Feeding method</b>				1.12	0.89
1.1	Only breastfeeding	22	11	29		
1.2	Mixed feeding	9	1	13		
1.3	Only formula feeding	5	3	7		
<b>2.</b>	<b>Urine wet diapers in 24 hours</b>				2.61	0.62
2.1	3-4	1	0	3		
2.2	5-6	32	14	39		
2.3	>6	3	1	7		
<b>3.</b>	<b>Stool diapers in 24 hours</b>				3.03	0.19
3.1	1-2	33	14	10		
3.2	2-4	3	1	14		
<b>4.</b>	<b>Comfortable breasts and nipples after each feed</b>				6.60	<b>0.03*</b>
4.1	Yes	30	12	34		
4.2	No	6	3	15		

**\*Significant at p<0.05**

From the above table 17, it is concluded that with regard to breastfeeding practices of the mothers at six months postpartum based on the type of delivery, significant correlation was discovered on the basis of comfortable breasts and nipples after each feed ( $p=0.03$ ).

## Comparison of Breastfeeding Outcomes on the basis of Type of Delivery

**Table 18: Comparison of samples regarding breastfeeding outcomes on the basis of type of delivery**

**n = 100**

S.No	Breastfeeding Outcomes	NVD	ASSISTED	LSCS	Chi-square	p-value
		<b>f</b>	<b>f</b>	<b>f</b>		
<b>1.</b>	<b>Breastfeeding status</b>					
1.1	Day 3	32	14	36	4.87	0.08
1.2	At 6 weeks	33	14	42	1.09	0.58
1.3	At 6 months	31	14	42	0.62	0.73
<b>2.</b>	<b>Offered only breast milk</b>					
2.1	Day 3	23	11	29	1.00	0.60
2.2	At 6 weeks	22	12	27	2.99	0.22
2.3	At 6 months	22	11	29	0.99	0.60
<b>3.</b>	<b>Plan for breastfeeding continuity up to 2 years of age</b>					
3.1	Day 3	28	14	35	3.13	0.20
3.2	At 6 weeks	28	13	31	4.05	0.13
3.3	At 6 months	28	14	32	5.10	0.07

From the above table 18, it is concluded that with regard to breastfeeding outcomes of the primigravid mothers at six months postpartum based on the type of delivery, no significant association was found among the mothers with respect to breastfeeding status, offering of only breast milk to the infants and plan for breastfeeding continuity up to 2 years of age.