



AN EXPLORATORY STUDY TO ASSESS THE PREVALENCE AND FACTORS ASSOCIATED WITH BREAST MILK SUBSTITUTE AMONG POSTNATAL MOTHERS IN SELECTED HOSPITAL RANCHI WITH A VIEW TO DEVELOP AN INFORMATION BOOKLET REGARDING EXCLUSIVE BREAST FEEDING

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ABSTRACT

STATEMENT OF THE PROBLEM-

An exploratory study to assess the prevalence and factors associated with breast milk substitute among postnatal mothers in selected hospital Ranchi with a view to develop an information booklet regarding exclusive breast feeding

OBJECTIVES-

1. To find out prevalence of breast milk substitute among postnatal mothers.
2. To investigate preferred breast milk substitute feeding among postnatal mothers.
3. To explore the factors associated with breast milk substitute feeding among postnatal mothers
4. To find out association of breast milk substitute among postnatal mothers with their selected socio demographic variables

PROJECTED OUTCOME/HYPOTHESIS-

H_0 - There will be no significant association between breast milk substitute among postnatal mothers with their selected socio demographic variables.

H_1 - There will be significant association between breast milk substitute among postnatal mothers with their selected socio demographic variables.

For the present study descriptive research design is utilized to achieve the stated objective. The study was based on the conceptual framework of health belief model to assess the prevalence and factors associated with breast milk substitute among postnatal mothers. A quantitative research approach is used. Pilot study was conducted to confirm the feasibility of the study and determine the reliability of the tool. For main study consecutive sampling was done on 100 sample of postnatal mothers of in selected hospitals of Ranchi. The tool used for data collection consists of self structured check list for

demographic data and factors associated with substitute breast feeding.

A formal written permission was obtained from the Director, of District Maternal and Child Hospital Ranchi. Data collection for the study was carried out from 2 / 1 1 / 2 2 to 2 8 / 1 1 / 2 2 . The investigator first introduces her self to the respondents and explain the purpose of gathering information .They were assured that their response would be kept confidential and used only for the purpose of research.

The data was analysed using the descriptive and inferential statistics where the result shows. a n a l y s i s t o a s s e s s t h e **factors associated with breast milk substitute feeding among postnatal mothers**, in physical factors mean (9.09), SD(2.82), emotional factors mean (3.08), SD(1.02), mean score % (61.6%), social factors mean (3.39), SD(1.11), mean score % (56.5%), organizational factors mean (3.21), SD(1.14), mean score % (64.2%), and other mean (2.12), SD(0.8), mean score % (70.67% Findingrelated to association between factors associated with breast milk substitute feeding among postnatal mothers of age, educational qualification, occupation of mother, type of family, gravida, parity, characteristics of delivery, weight of baby, and characteristics of baby were socio demographic variables,

The calculated value of chi square for **occupation of mother (15.61) were significant**, while calculated value of chi square for age (2.65), educational qualification (6.71), type of family (0.26), gravida (6.84), parity (2.01), characteristics of delivery (2.37), weight of baby (9.43), characteristics of baby (0.97) were not significant.

Hence it is concluded that occupation of mother were associated with factors, whereas age, educational qualification, gravida, type of family, parity, weight of baby, characteristics of baby were not associated with level of factors.

The study will be a motivation to beginning researcher to conduct similar studies on the large scale. Similar study may be replicated for larger sample in different setting for making broad generalization.

BACKGROUND :

NCBI (2019) The health effects of breastfeeding are well recognized and apply to mothers and children in developed nations such as the United States as well as to those in developing countries. Breast milk is uniquely suited to the human infant's nutritional needs and is a live substance with unparalleled immunological and anti-inflammatory properties that protect against a host of illnesses and diseases for both mothers and children.

NCBI (2019) In 2007, the Agency for Healthcare Research and Quality ([AHRQ](#)) published a summary of systematic reviews and meta-analyses on breastfeeding and maternal and infant health outcomes in developed countries. The AHRQ report reaffirmed the health risks associated with formula* feeding and early weaning from breastfeeding. With regard to short-term risks, formula feeding is associated with increases in common childhood infections, such as diarrhea³ and ear infections.² The risk of acute ear infection, also called acute otitis media, is 100 percent higher among exclusively formula-fed infants than in those who are exclusively breastfed during the first six months

Jyoti (2019) Breastfeeding is an art and skills which need to be learnt and mastered. This skill has to be learnt and followed by mothers not only to feed their infants but also to avoid breastfeeding complications. One of the important steps in breastfeeding technique is helping the baby to latch on the breast correctly. A good latch eliminates the problem of sore nipples and proper breastfeeding reduces the chances of other breastfeeding complications. Some primiparous inexperienced mothers need some help and should be made aware about the importance of breastfeeding and its techniques during the antenatal period, so as to prevent complications in the later periods.

NEED OF THE STUDY

Olivia (2013) Human milk is specific to the human species, a dynamic and complex biological fluid and there is a change in its composition during a feed, from feed to feed during the day and over time as the growing infant's need change. Breast milk changes in appearance over time.

“A new born baby has only three demands. They are warmth in the arms of its mother, food from the breasts, and security in the knowledge of her presence; breastfeeding satisfies as three”.

On the above NFHS data 2019-2021 researcher observe that Half of mothers (43%) reported observing a BMS promotion within the health system, and half (46%) reported receiving recommendations from health workers to use BMS. Such high prevalence use of BMS. So the investigator want to assess the prevalence of BMS and to develop awareness regarding importance and benefit of exclusive breast feeding.

STATEMENT OF THE PROBLEM

An exploratory study to assess the prevalence and factors associated with breast milk substitute among postnatal mothers in selected hospital Ranchi with a view to develop an information booklet regarding exclusive breast feeding

OBJECTIVES OF THE STUDY:-

To find out prevalence of breast milk substitute among postnatal mothers.

To investigate preferred breast milk substitute feeding among postnatal mothers.

To explore the factors associated with breast milk substitute feeding among postnatal mothers

To find out association of breast milk substitute among postnatal mothers with their selected socio demographic variables

HYPOTHESIS:

H_0 - There will be no significant association between breast milk substitute among postnatal mothers with their selected socio demographic variables.

H_1 - There will be significant association between breast milk substitute among postnatal mothers with their selected socio demographic variables.

DELIMITATIONS

Postnatal Mother limited to 280 samples.

Postnatal mother in selected hospital of Ranchi

Postnatal mother limited to 30 days duration for data collection

Postnatal mothers who are in breast milk substitute

OPERATIONAL DEFINITION

PREVALENCE: It refers to the proportion of a population who have a specific characteristic in a given time period. In the present study assess the prevalence of breast milk substitute feeding among postnatal mother.

FACTORS: In the present study; assess the physical, emotional, sociocultural, organizational and other factors associated with breast milk substitute feeding among postnatal mothers

BREAST MILK SUBSTITUTE: In the present study, assess the use of breast milk substitute feeding among mother of newborn (30days) i.e. formula feeding, organic newborn formula, goat milk etc.

EXCLUSIVE BREAST FEEDING: In the present study newborn receiving only breast milk and no other liquids or solids except for drops or syrups consisting of vitamins, minerals, or medicines.

INFORMATION BOOKLET: In the present study; distribute an information on exclusive breast feeding in the form of booklet

among postnatal mothers.

POSTNATAL MOTHERS: In the present study, Mothers who delivered neonate within 0-7days regardless of mode of delivery/gestational age or parity.

SECTION-I

4.1 Demographic Variables and Health History among postnatal mothers

This section presents the demographic variables and health history collected from postnatal mothers. The variables collected were age of mother, educational qualification, occupation, type of family, gravida, parity, characteristics of delivery

Collected data were analyzed using descriptive statistics and were summarized in terms of frequency and percentage.

SECTION -I

4.1 Demographic Variables and Health History among postnatal mothers

S.NO	DEMOGRAPHICAL DATA	FREQUENCY (F)	PERCENTAGE (%)
1.	Age (in year)		
	18-25	4	4
	26-30	44	44
	Above 30	52	52
2.	Education		
	Illiterate	0	0
	Primary	54	54
	Secondary	32	32
	Higher secondary	14	14
	Graduate & postgraduate	0	0
3.	Type of family		
	Joint	46	46
	Nuclear	54	54
	Extended	0	0
4.	Gravida		
		32	32
		60	60
	or more	8	8
5.	Parity		
		37	37
		61	61

S.NO	DEMOGRAPHICAL DATA	FREQUENCY (F)	PERCENTAGE (%)
	more than 3	2	2
6.	Occupation of mother		
	House wife	64	64
	labour work	12	12
	private job	20	20
	government job	4	4
	business	0	0
7.	Characteristics of delivery		
	Cesarean delivery	40	40
	Normal delivery	47	47
	Forcep delivery	7	7
	Others	6	6
8.	Weight of baby		
	1-2kg	15	15
	2-2.5kg	20	20
	2.5-3kg	35	35
	Above 3kg	30	30
9.	Characteristics of baby		
	Term	77	77
	Pre term	16	16
	Post term	7	7

It depicts that maximum mothers 52(52%) belonged to age group above 30 years of age, 44(44%) were belongs to the age group 26-30years of age, 4(4%) were belongs to 18-25years of age.

It depicts that maximum postnatal mothers 54(54%)were having primary education, 32(32%) were having secondary education, 14(14%) were having higher secondary education.

It depicts that maximum postnatal mother 54(54%) were living in nuclear family, 46(46%) were living in joint family.

It depicts that maximum postnatal mother 60(60%) were having gravida 2, 32(32%) were having gravida 1, 8(8%) were having gravida 3 or more.

It depicts that maximum postnatal mothers 37(37%) were parity 1, 61(61%) were parity 2, and 2(2%) were more than 3 parity.

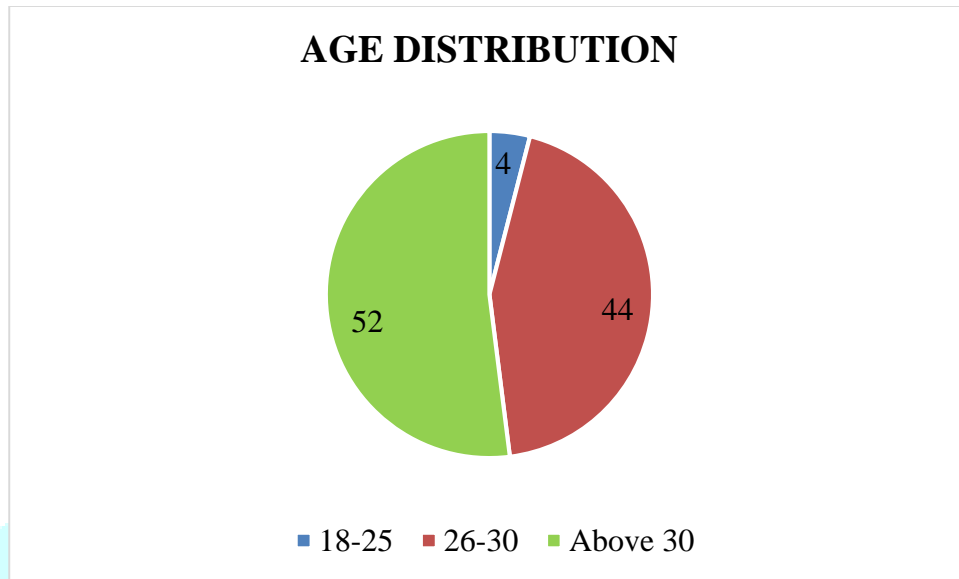
It depicts that maximum postnatal mothers 64(64%) were Housewife, 20(20%) were doing private job, 12(12%) were doing labour work, 4(4%) were doing government job.

It depicts that maximum postnatal mother 47(47%) were undergone normal delivery, 40(40%) were undergone cesarean delivery, 7(7%) were having undergone forcep delivery and 6(60%) were undergone other characteristics of delivery.

It depicts that maximum postnatal mother 35(35%) were having baby weight about 2.5-3kg, 30(30%) were having baby weight above 3kg, 20(20%) were having baby weight about 2-2.5kg, and 15(15%) were having baby weight 1-2kg.

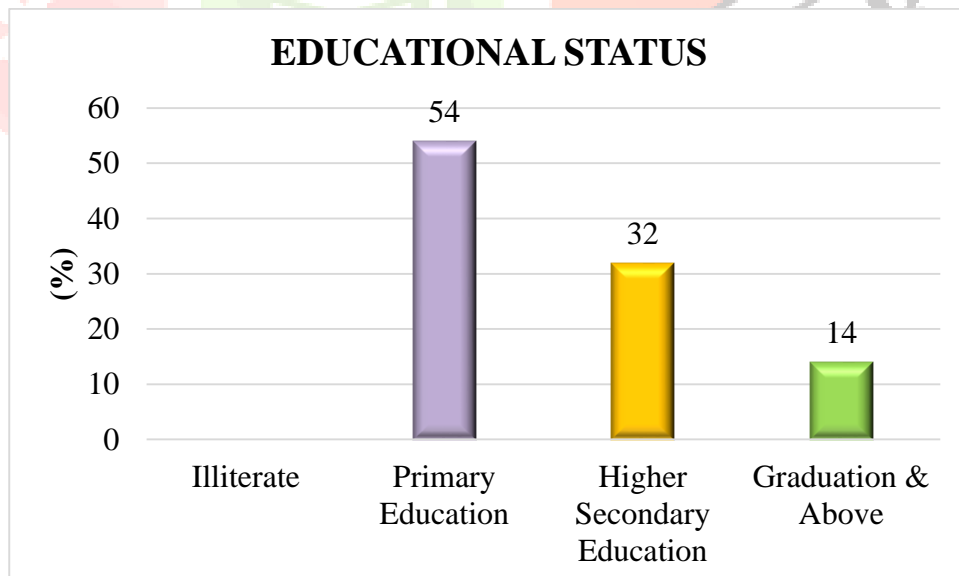
It depicts that maximum postnatal mother 77(77%) were having term baby, 16(16%) were having pre term baby and 7(7%) were having post term baby.

Figure no. 4.1.1 Pie diagram showing the percentage distribution of the age groups.

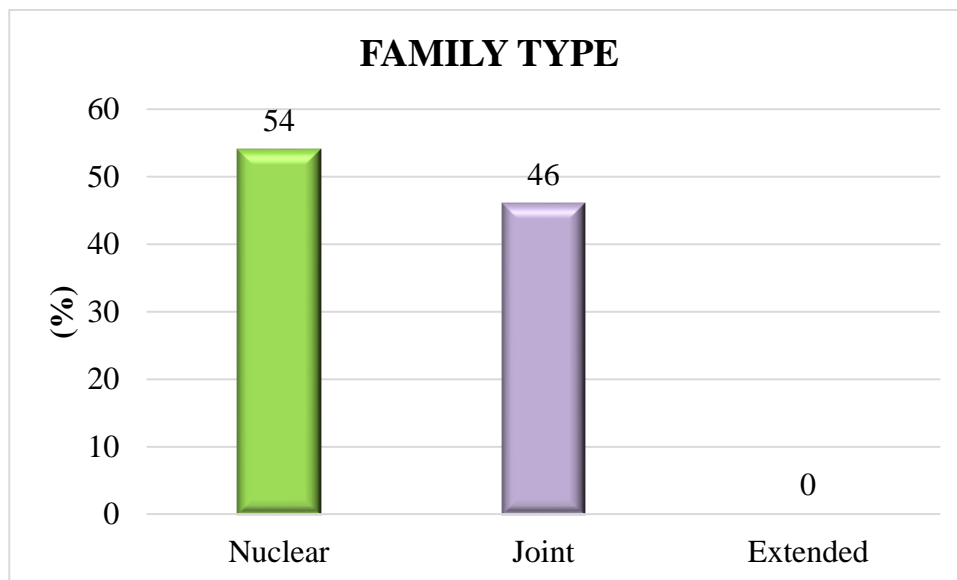


It depicts that maximum mothers 52(52%) belonged to age group above 30 years of age, 44(44%) were belongs to the age group 26-30years of age, 4(4%) were belongs to 18-25years of age.

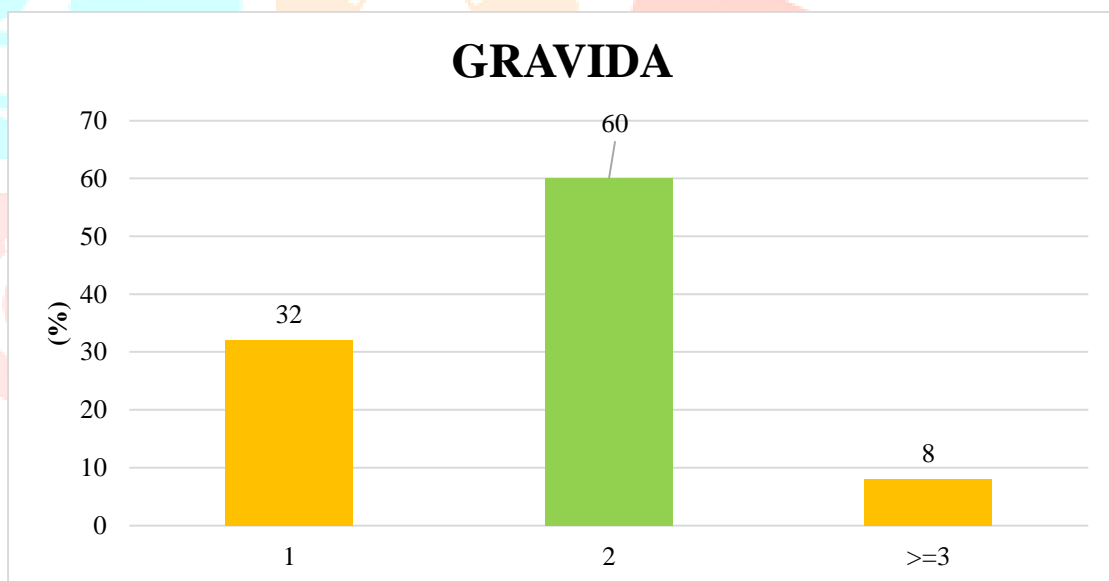
Fig no 4.1.2 Bar diagram showing percentage distribution of mothers according to Educational qualification.



It depicts that maximum postnatal mothers 54(54%)were having primary education, 32(32%) were having secondary education, 14(14%) were having higher secondary education.

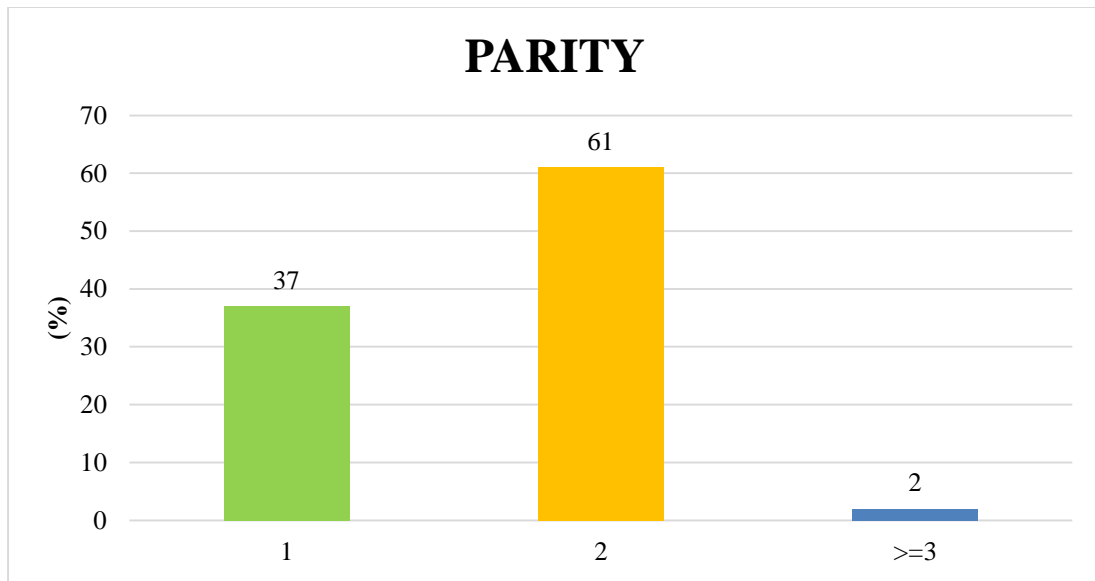
Fig no 4.1.3 Bar diagram showing percentage distribution of mothers according to Type of family.

It depicts that maximum postnatal mother 54(54%) were living in nuclear family, 46(46%) were living in joint family.

Fig no 4.1.4 Column Bar diagram showing percentage distribution of mothers according to Gravida.

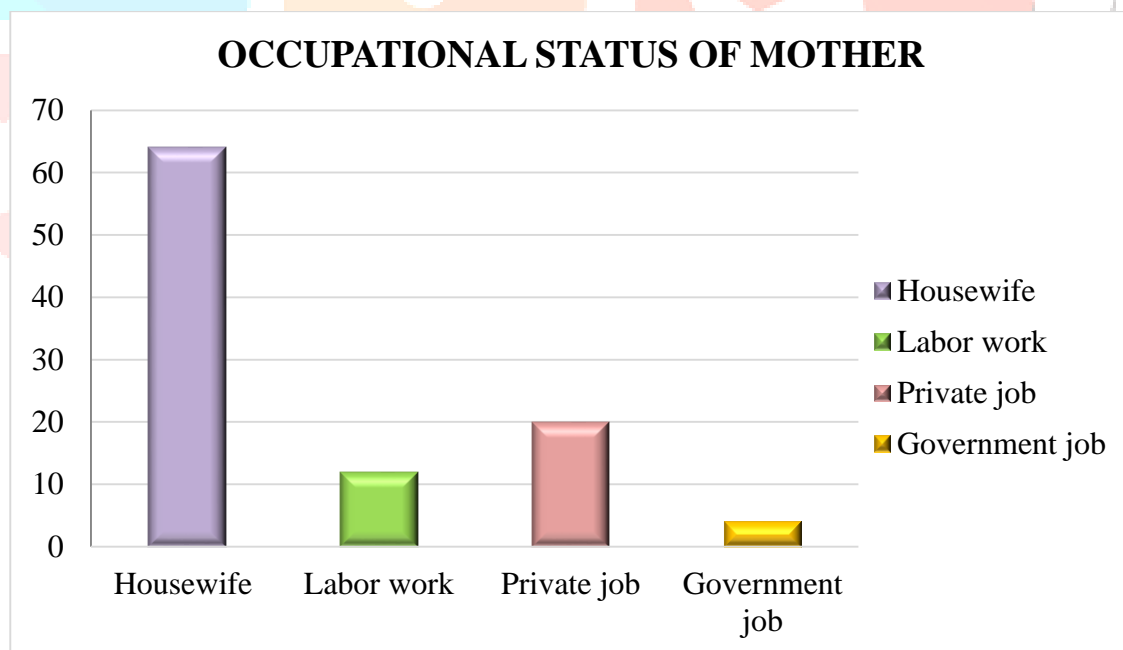
It depicts that maximum postnatal mother 60(60%) were having gravida 2, 32(32%) were having gravida 1, 8(8%) were having gravida 3 or more.

Fig no 4.1.5 Column Bar diagram showing percentage distribution of mothers according to parity.



It depicts that maximum postnatal mothers 37(37%) were parity 1, 61(61%) were parity 2, and 2(2%) were more than 3 parity.

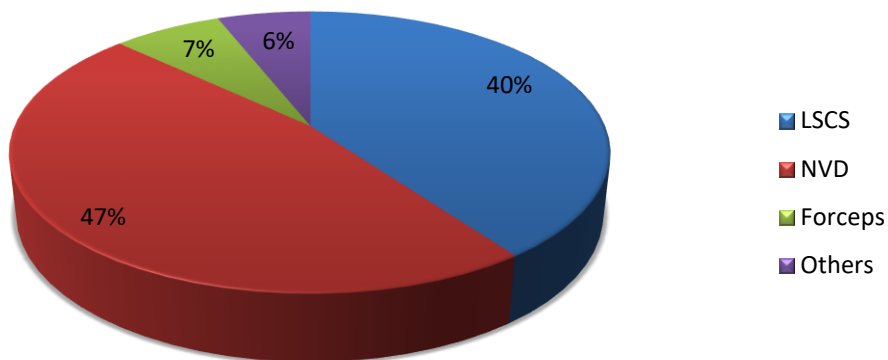
Fig no 4.1.6 Bar diagram showing percentage distribution of mothers according to occupation of mother.



It depicts that maximum postnatal mothers 64(64%) were Housewife, 20(20%) were doing private job, 12(12%) were doing labour work, 4(4%) were doing government job.

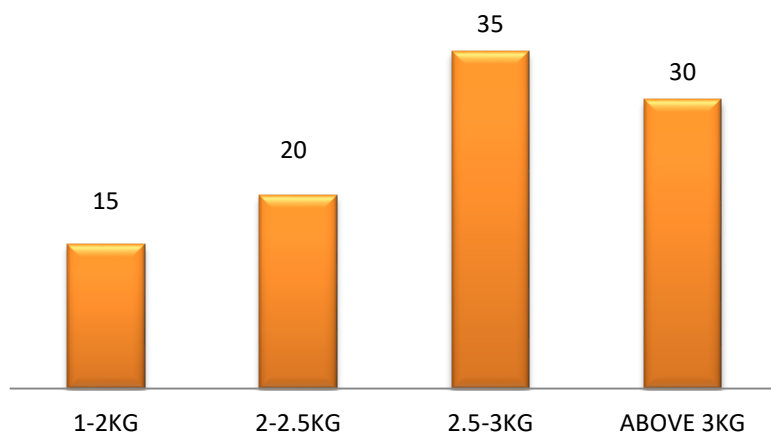
Fig 4.1.7, Pie diagram showing percentage distribution of mothers according to characteristics of delivery

CHARACTERISTIC OF DELIVERY



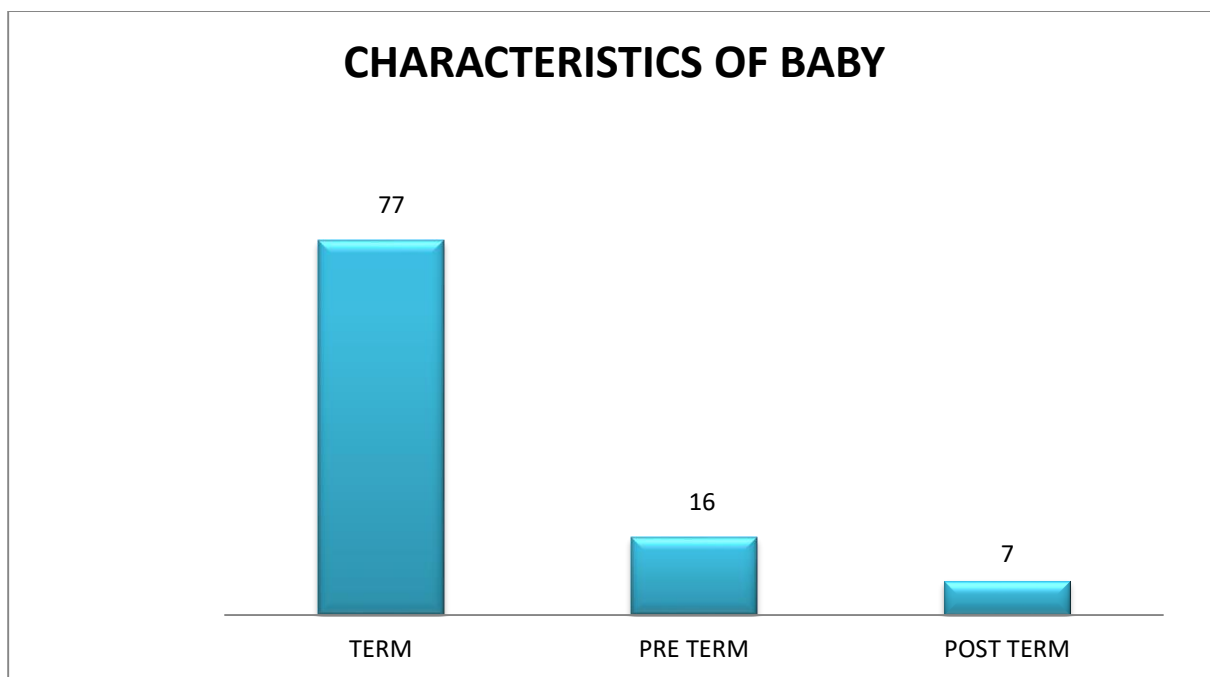
It depicts that maximum postnatal mother 47(47%) were undergone normal delivery, 40(40%) were undergone cesarean delivery, 7(7%) were having undergone forcep delivery and 6(6%) were undergone other characteristics of delivery.

WEIGHT OF THE BABY



It depicts that maximum postnatal mother 35(35%) were having baby weight about 2.5-3kg, 30(30%) were having baby weight above 3kg, 20(20%) were having baby weight about 2-2.5kg, and 15(15%) were having baby weight 1-2kg.

Fig 4.1.9, Bar diagram showing percentage distribution of mothers according to characteristics of baby.



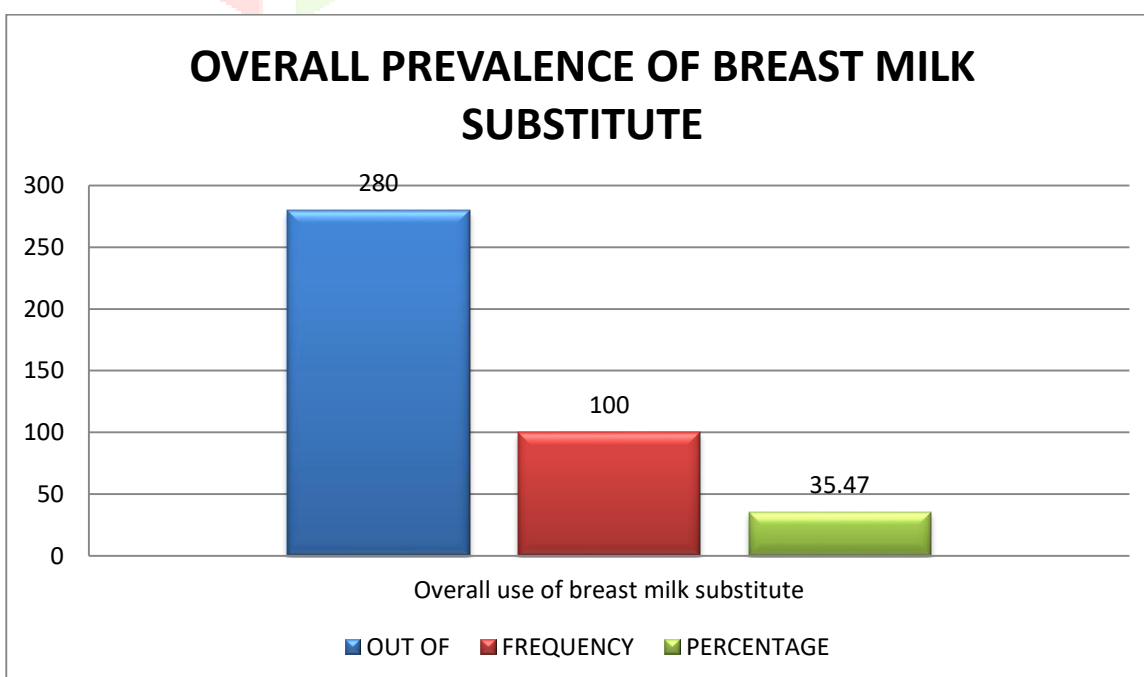
It depicts that maximum postnatal mother 77(77%) were having term baby, 16(16%) were having pre term baby and 7(7%) were having post term baby.

SECTION –II

OVERALL PREVALENCE OF BREAST MILK SUBSTITUTE AMONG POSTNATAL MOTHER

[N=280]

S.NO	OVERALL	OUT OF	FREQUENCY (n)	PERCENTAGE (%)
1.	Overall Use of Breast milk substitute	280	100	35.47



Out of 280mothers, 100 mothers were using breast milk substitute.

SECTION –II

4.2 Assessment of preference of breast milk substitute among postnatal mother

[N=280]

S.NO	CONTENTS	n	%
I	Prevalence		
	Formula milk	45	16.07
	Cow milk	25	8.9
	Buffalo milk	15	5.3
	Goat milk	5	1.7
	Others	10	3.5
	Growing up milk	0	0
	Camel's milk	0	0
	Other dairy foods	0	0
	TOTAL	100	100

Out of 280mothers, 100 mothers were using breast milk substitute, Maximum mothers 45(16.07%) were using formula feeding, 25(8.9%) were using cow's milk, 15(5.3%) were using buffalo milk, 5(1.7%) were using goat milk, 10(3.5%) were using other milk.

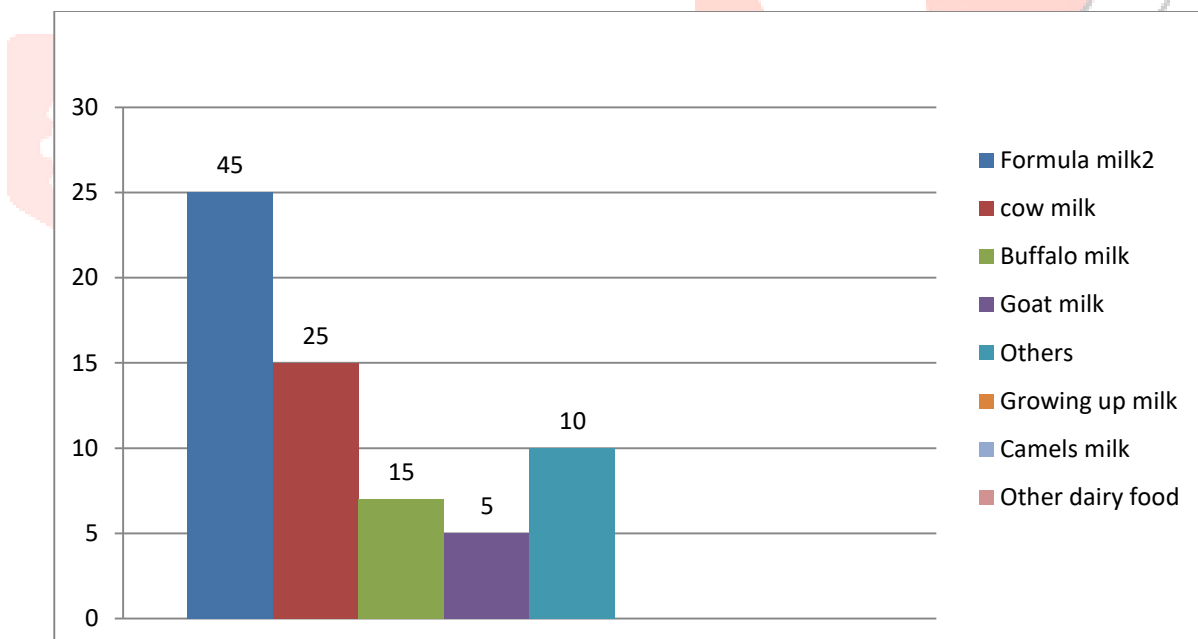


Table 4.2, Bar diagram showing prevalence of breast milk substitute among postnatal mother.

SECTION –III

4.3 Assessment on factors associated with breast milk substitute among postnatal mother

(N=100)

S.NO	CONTENTS	YES		NO	
		N	(%)	N	(%)
I	Physical factors				
1.	I feel pain during feeding	52	52	48	48
2.	Breast feeding alone is not enough for proper growth of baby	65	65	35	35
3.	Milk formation is not yet started properly due to weakness	94	94	6	6
4.	My baby had trouble during sucking and latching on.	96	96	4	4
5.	My breast were infected or abscessed to feed	43	43	57	57
6.	I am having low breast milk flow	47	47	53	53
7.	I feel difficulty in feeding due to retracted/inverted nipple	69	69	31	31
8.	My baby became sick and could not breast feed	65	65	35	35
9.	My breast nipple size is big	75	75	25	25
10.	My nipples were sore, cracked or bleeding	24	24	76	76
11.	My breast were overfull/engorged	36	36	64	64
12.	My breast leaked too much	51	51	49	49
13.	I was sick or had to take medicine	90	90	10	10
14.	Breast feeding was too inconvenient	54	54	46	46
15.	My breast shape will be altered/sagging	47	47	53	53
II	Emotional factors				
1.	I feel shame and disappointment as I am not able to feed my baby	99	99	1	1
2.	I can't hold the baby properly to feed.	84	84	16	16
3.	I feel difficulty in feeding	39	39	61	61
S.NO	CONTENTS	YES		NO	
		N	(%)	N	(%)
4.	I feel shy to feed the baby	46	46	54	54
5.	My baby should be used to other milk	36	36	64	64
III	Socio cultural factors				
1.	I heard that breast milk substitute are healthy for baby	91	91	9	9
2	Colostrum is called as an impure milk in our village	56	56	44	44
3	We are not allowed to feed the baby for 3days in our village	49	49	51	51
4	I feel shy to feed the baby in front of others	41	41	59	59
5	I feel people will feed bad when I breast feed publically	50	50	50	50

6	No one explained about exclusive breast feeding	54	54	46	46
IV	Organizational factors				
1	I didn't get any information/knowledge regarding exclusive breast feeding	100	100	0	0
2	I didn't get the help and support from the health care worker for early initiation of breast feeding	49	49	51	51
3	I was explained about the breast feeding but I didn't understand the language properly	66	66	34	34
4	I was suggested to give the breast milk substitute by health care workers	77	77	23	23
5	I have received free samples of formula feed by hospital/NGO/Others	27	27	73	73
V	Others factors				
1.	Have you attended peer group counselling regarding lactational management.	88	88	12	12
2.	Have you used social media to solve your feeding problems	85	85	15	15
3.	Have you taken counselling from health care professional regarding feeding problems	38	38	62	62

Table 4.3 - It depicts that assessment of physical factors associated with breast milk substitute among postnatal mother, maximum mothers 52(52%) were feels pain during feeding, 65(65%) were feels breast feeding alone is not enough for proper growth of baby, 94(94%) were feels milk formation is not yet started properly due to weakness, 96(96%) were feels my baby had trouble during sucking and latching on, 43(43%) were feels my breast were infected or abscessed to feed, 47(47%) were feels I am having low breast milk flow, 69(69%) were feels difficulty in feeding due to retracted/inverted nipple, 65(65%) were feels my baby became sick and could not breast feed, 75(75%) were feels my breast nipple size is big, 24(24%) were feels my nipples were sore, cracked or bleeding, 36(36%) were feels my breast were overfull/engaged, 51(51%) were feels my breast leaked too much, 90(90%) were feel I was sick or had to take medicine and 54(54%) were feels breast feeding was too inconvenient.

Maximum mothers 99(99%) were feel shame and disappointment as I am not able to feed my baby, 84(84%) were feel I cannot hold the baby properly to feed, 39(39%) were feel difficulty in feeding, 46(46%) were feel shy to feed the baby, and 36(36%) were feel my baby should be used to other milk. Maximum mothers 91(91%) were feels I heard that breast milk substitute are healthy for baby, 56(56%) were feel colostrum is called as an impure milk in our village, 49(49%) were feel we are not allowed to feed the baby for 3days in our village, 41(41%) were feel shy to feed the baby in front of others, 50(50%) were feel people will feed bad when I breast feed publically, 54(54%) were feel no one explained about exclusive breast feeding.

Maximum mothers 100(100%) were didn't get any information/knowledge regarding exclusive breast feeding, 49(49%) were didn't get the help and support from the health care worker for early initiation of breast feeding, 66(66%) were explained about the breast feeding but I didn't understand the language properly, 77(77%) were were suggested to give the breast milk substitute by health care workers and 27(27%) were received free samples of formula feed by hospital/NGO/Others.

Maximum mothers 88(88%) were have you attended peer group counselling regarding lactational management, 85(85%) have you used social media to solve your feeding problems and 38(38%) have you taken counselling from health care professional regarding feeding problems.

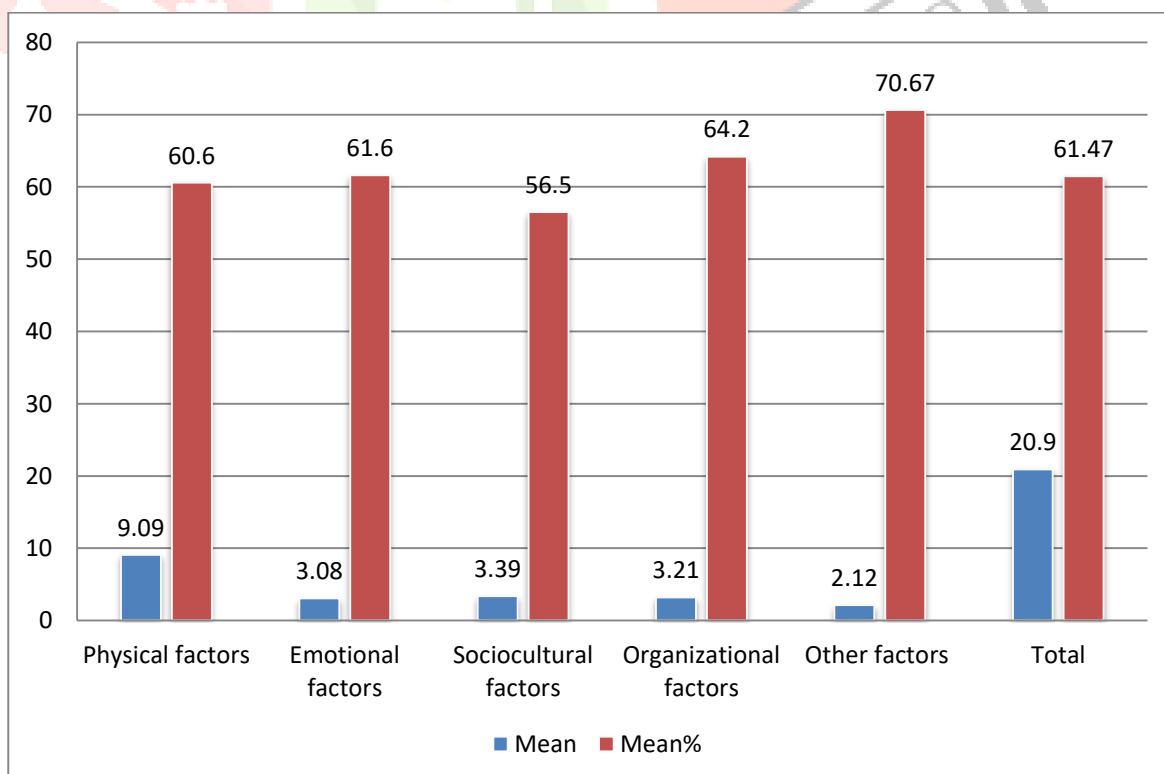
1.3 AREA WISE ASSESSMENT ON PHYSICAL FACTORS ASSOCIATED WITH

BREAST MILK SUBSTITUTE AMONG POSTNATAL MOTHER (N=100)

Table 4.3(b), It depicts that **factors associated with breast milk substitute feeding among postnatal mothers**. in physical factors mean (9.09), SD(2.82), mean score % (60.6%), emotional factors mean (3.08), SD(1.02), mean score % (61.6%), social factors mean (3.39), SD(1.11), mean score % (56.5%), organizational factors mean (3.21), SD(1.14), mean score % (64.2%), and other mean (2.12), SD(0.8), mean score % (70.67%).

Area	Min-Max	Mean	Mean%	SD	CV
Physical factors	3-14	9.09	60.6	2.82	31.02
Emotional factors	1-5	3.08	61.6	1.02	33.12
Sociocultural factors	1-5	3.39	56.5	1.11	32.74
Organizational factors	1-5	3.21	64.2	1.14	35.51
Other factors	1-3	2.12	70.67	0.8	37.74
Total	9-30	20.9	61.47	3.92	18.76

Fig 4.3(b):Multiple bar diagram showing percentage distribution of factors associated with breast milk substitute feeding among postnatal mothers



FACTORS ASSOCIATED WITH BREAST MILK SUBSTITUTE FEEDING

Table 4.4.1: To find out association of breast milk substitute feeding among postnatal mothers with their selected socio demographic variables (N=100)

Age (years)	Factors associated with breast milk substitute feeding				df/Critical value	Chi square value/ Significance
	Low	Moderate	Severe	Total		
18-25	0(0%)	2(50%)	2(50%)	4(100%)	4/9.49	2.65/p>0.05 NS
26-30	3(6.82%)	30(68.18%)	11(25%)	44(100%)		
Above 30	3(5.77%)	29(55.77%)	20(38.46%)	52(100%)		
Educational qualification of mother						
Illiterate					4/9.49	6.71/P>0.05 NS
Primary Education	1(1.85%)	33(61.11%)	20(37.04%)	54(100%)		
Higher Secondary Education	3(9.38%)	22(68.75%)	7(21.88%)	32(100%)		
Graduation & Above	2(14.29%)	6(42.86%)	6(42.86%)	14(100%)		
Occupation of mother/employment status						
Housewife	5(7.81%)	46(71.88%)	13(20.31%)	64(100%)	6/12.59	15.61/P<0.05 S
Labor work	0(0%)	7(58.33%)	5(41.67%)	12(100%)		
Private job	1(5%)	7(35%)	12(60%)	20(100%)		
Government job	0(0%)	1(25%)	3(75%)	4(100%)		
Business						
Type of family						
Nuclear	3(5.56%)	32(59.26%)	19(35.19%)	54(100%)	2/5.99	0.26/p>0.05 NS
Joint	3(6.52%)	29(63.04%)	14(30.43%)	46(100%)		
Extended						
Gravida						
1	2(6.25%)	20(62.5%)	10(31.25%)	32(100%)	4/9.49	6.84/P>0.05 NS
2	2(3.33%)	36(60%)	22(36.67%)	60(100%)		
>=3	2(25%)	5(62.5%)	1(12.5%)	8(100%)		
Parity						
1	3(8.11%)	23(62.16%)	11(29.73%)	37(100%)	4/9.49	2.01/ P>0.05 NS
2	3(4.92%)	36(59.02%)	22(36.07%)	61(100%)		
>=3	0(0%)	2(100%)	0(0%)	2(100%)		
Characteristic of delivery						
LSCS	3(7.5%)	24(60%)	13(32.5%)	40(100%)	6/12.59	2.37/P>0.05

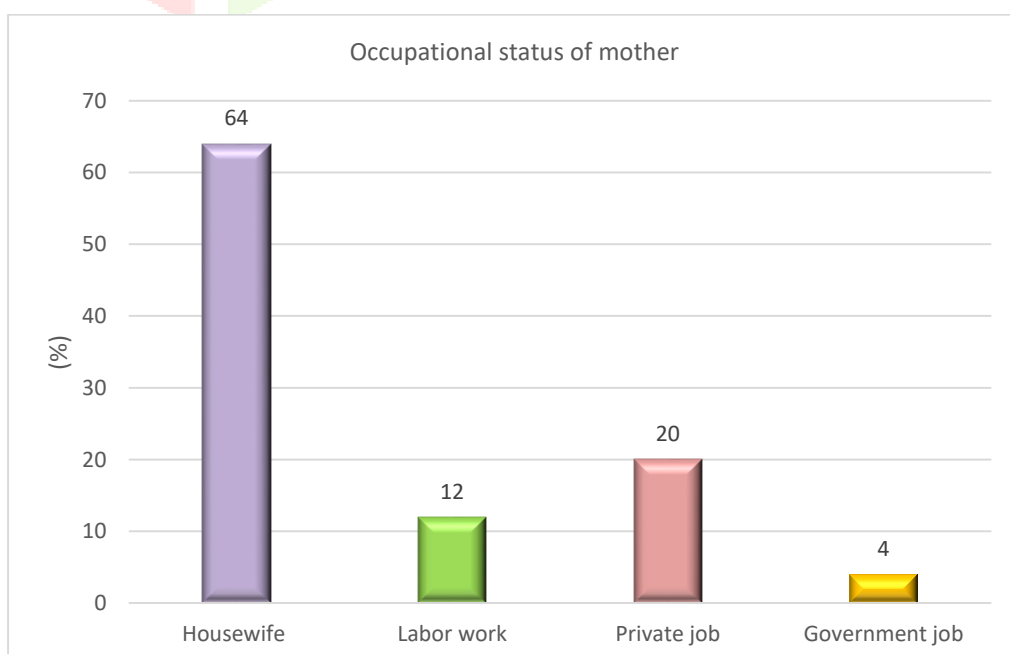
NVD	2(4.26%)	30(63.83%)	15(31.91%)	47(100%)		NS
Forceps	0(0%)	4(57.14%)	3(42.86%)	7(100%)		
Others	1(16.67%)	3(50%)	2(33.33%)	6(100%)		
Weight of Baby						
1-2 kg	2(13.33%)	9(60%)	4(26.67%)	15(100%)	6/12.59	9.43/p>0.05 NS
2-2.5 kg	2(10%)	10(50%)	8(40%)	20(100%)		
2.5-3 kg	2(5.71%)	18(51.43%)	15(42.86%)	35(100%)		
>3 kg	0(0%)	24(80%)	6(20%)	30(100%)		
Characteristics of baby						
Term	4(5.19%)	47(61.04%)	26(33.77%)	77(100%)	4/9.49	0.97/P>0.05 NS
Preterm	1(6.25%)	10(62.5%)	5(31.25%)	16(100%)		
Post term	1(14.29%)	4(57.14%)	2(28.57%)	7(100%)		

Table 4.4.1 shows the association between factors associated with breast milk substitute feeding among postnatal mothers of age, educational qualification, occupation of mother, type of family, gravida, parity, characteristics of delivery, weight of baby, and characteristics of baby were socio demographic variables,

The calculated value of chi square for **occupation of mother (15.61) was significant**, while calculated value of chi square for age (2.65), educational qualification (6.71), type of family (0.26), gravida (6.84), parity (2.01), characteristics of delivery (2.37), weight of baby (9.43), characteristics of baby (0.97) were not significant.

Hence it is concluded that occupation of mother were associated with factors, whereas age, educational qualification, gravida, type of family, parity, weight of baby, characteristics of baby were not associated with level of factors.

Figure 4.4.1: To find out association of breast milk substitute feeding among postnatal mothers with their selected socio demographic variables



Shows association of between occupation of mother

Hence it is concluded that occupation of mother were associated with factors, whereas age, educational qualification, gravida, type of family, parity, weight of baby, characteristics of baby were not associated with level of factors.

