ORIGINAL ARTICLE - PUBLIC HEALTH

A STUDY TO ASSESS THE PREVALENCE OF EXCLUSIVE BREASTFEEDING PRACTICES AMONG MOTHERS AT THE VILLAGES OF PUDHUR NADU, JAWADHU HILLS, TIRUPATHUR DISTRICT, TAMIL NADU, 2022

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Abstract

BACKGROUND: Exclusive Breastfeeding (EBF) should be continued for the first 6 months of child's life with early initiation, may be continued 2 years or more (WHO). The prevalence of EBF is globally 44% (WHO), in India 63% & Tamil Nadu 55% (NFHS-5, 2019-21). EBF for 6 months is a challenge for women everywhere, especially mothers living in hilly rural areas and we need to explore the EBF practices among them.

OBJECTIVES : To estimate the prevalence of EBF & assess BF practices among mothers at the villages of Pudhur Nadu.

METHODS : Cross sectional study was conducted among the mothers, who had delivered baby in past one year at Pudhur Nadu. Simple random sampling done. Sample size was 186. Pretested questionnaire used by ASHAs (trained interviewers). Descriptive analysis done by proportions, Chi-square tests by MS Excel, Epi info 7.2.5. Permissions obtained from Ethics committee, DPH & PM.

RESULTS : 185 mothers responded, mean age 21(sd 3.7), 97.8% Hindus & 99% Scheduled Tribes. Prevalence of EBF was 71% & EBF for 6 months duration from birth was 63%. Prelacteal feed given in 13% & Colostrum in 96% children. BF initiated within 1 hour of birth was 91%. Non EBF among 1st & 2nd order children was 32% & 3rd & higher order was 14% (P 0.04). EBF among mothers had 3 or more home visits during pregnancy (P 0.01) and after delivery (P 0.02) by VHN/ASHA was twice compared to those who had less than 3 visits.

CONCLUSION : Among mothers of Pudhur Nadu, EBF is higher than expected. Further studies by in-depth interviews can be conducted as each mother's experience of Breastfeeding is important.

KEYWORDS : Exclusive Breastfeeding, colostrum, pregnancy.

INTRODUCTION

Breastmilk is the ideal food for infants. It is safe, clean and contains antibodies which help protect against many common childhood illnesses. Breastmilk provides all the energy and nutrients that the infant needs for the first months of life, it continues to provide up to half or more of a child's nutritional needs during the second half of the first year and up to one third during the second year of life. Breastfed children perform better on intelligence tests, are less likely to be overweight or obese and less prone to diabetes later in life. Women who breastfeed also have a reduced risk of breast and ovarian cancers.[1]

Breastfeeding is a critical first step on a child's path to a healthy future. As a foundation of nutrition and health, breastfeeding contributes to the achievement of a more prosperous and sustainable future for people and planet. Breastfeeding can help achieve many of the 17 Sustainable Development Goals including goals on poverty, hunger, health, education, gender equality and sustainable consumption. Increased breastfeeding is associated with US$302 billion annually in additional income – nearly 0.5 per cent of world gross national income. Breastfeeding is linked to critical gender equality issues including workplace rights. Breastmilk does not require industry for production and is created and consumed with a minimal ecological footprint. As Breastfeeding is a well-established and recommended intervention for the improvement of child nutrition, the World Health Organization (WHO) recommends that Exclusive Breastfeeding (EBF) should be continued for the first 6 months of child's life. WHO states that over 8,20,000 children's lives are lost every year among children under five years of age. Breastfeeding is potentially one of the top nutrition interventions for reducing under-five mortality. Undernutrition is estimated to be associated with 2. 7 million child deaths annually or 45% of all child deaths. Infant and young child feeding is a key area to improve child survival and promote healthy growth and development. The first 2 years of a child's life are particularly important, as optimal nutrition

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during this period lowers morbidity and mortality, reduces the risk of chronic disease, and fosters better development overall. Globally, less than one in two new-borns receive the benefits of early initiation of breastfeeding and only two in five infants under six months of age are exclusively breastfed.[2]

EBF for 6 months is a challenge for women everywhere, especially mothers living in hilly rural areas, who are social group specially characterized by distinctive culture and influences of the community, religion, traits, beliefs, availability of health facilities and territorial affliction. Prevalence of Exclusive Breastfeeding among women of hilly areas, knowledge and practices of Breastfeeding among them need to be explored.

OBJECTIVES

1.To estimate the Prevalence of Exclusive Breastfeeding practices among mothers at the villages of Pudhur Nadu, Jawadhu Hills

2.To assess the knowledge and practices of Breastfeeding among mothers at the villages of Pudhur Nadu, Jawadhu Hills

METHODOLOGY

STUDY DESIGN: Cross sectional study

STUDY DURATION: 10th to 31st October, 2022

STUDY AREA & POPULATION: The mothers, who had delivered baby (live birth) from October 2021 to September 2022 (1 year), residing in the villages of Pudhur Nadu, Jawadhu Hills, Tirupathur District, Tamil Nadu

INCLUSION CRITERIA: Mothers, who had delivered baby (live birth) from October 2021 to September 2022

EXCLUSION CRITERIA: Mothers in admission at hospital & mothers not willing to participate are not included in the study

SAMPLING PROCEDURE: List of mothers who had child birth during the reference period was obtained from District Public Health department and simple random sampling was done using Microsoft Excel 2011.

SAMPLE SIZE: Based on NFHS 5 (National Family Health Survey), assumption of Exclusive Breastfeeding as 50% (P = expected proportion), confidence interval 95% (Z value ± 1.96), relative precision (d) 5%, with expected non-response of 10%, population size (N) is 297 mothers, the required sample size (n') was calculated using the formula:

$n' = NZ^2P(1-P) / d^2(N-1) + Z^2P(1-P)$

the sample size was 186.

OPERATIONAL DEFINITION

EXCLUSIVE BREASTFEEDING: A child is considered Exclusively Breastfed when he or she receives only breast milk, without any additional food or liquid, even water, with the exception of oral rehydration solution, drops, syrups of vitamins, minerals or medicines (WHO). Exclusively Breastfeeding for six months duration from birth of the child (from first feeding) is defined as EBF for six months.

PRELACTEAL FEED: Prelacteal feeding is any fluid given to a child before Breastfeeding starts (WHO).

DATA COLLECTION: Data was collected by face-to-face interview of the participants by using interviewer administered questionnaire. ASHAs (Accredited Social Health Activists) were trained as interviewers and reliability checked before data collection. Questionnaire was in native language Tamil and pretested for responses & data flow with 10 mothers in study population (not included in study sample). Interviewers were supervised by the Investigators. Information on Demography & Breastfeeding practices was collected.

DATA ANALYSIS: Data collected was entered in Epicollect5. Double entries were checked. Analysis was done using Microsoft Excel 2011, Epi Info 7.2.5. Proportion analysis was done and Chi square test, P value of < 0.05 were used to test statistical significance.

ETHICAL CONSIDERATIONS: All the participants were explained about the purpose of the study, participant information sheet in native language was provided. Written informed consent was obtained. Strict confidentiality maintained towards the responses & participant identity. Assured that any scientific presentation or publication will not reveal the individual identity of the participants.

Prior permission & approval was obtained from Ethics committee, Directorate of Public Health & Preventive Medicine, Chennai.

RESULTS

Total participants were 185 with 1 non response. 102 mothers with ≥ 6 months old baby (denominator for EBF for six months), 83 with < 6 months old baby and all were assessed for Breastfeeding practices.

SOCIODEMOGRAPHIC CHARACTERISTICS: Mean age of participants was 23 years (sd ± 3.7), Mean age at marriage was 20 years (sd ± 2.4). Among them 98% were Hindus, 2% other religions and 99% were Scheduled Tribes. Less than 1% of participants had no school education, 24% had higher secondary school education. Occupation of mothers was 38% had daily waged work, 35% agriculture, 4% others & 23% were not working and the details are presented in Table 1.

Table 1: Frequencies of Socio demographic characteristics (N=185)

Characteristics	Category	n	%
a. Education of participant	Illiterate	1	1
	Class 1-5	29	16
	Class 6-10	110	59
	Class 11-12	36	19
	Graduate	9	5
b. Education of spouse	Illiterate	8	4
	Class 1-5	21	11
	Class 6-10	68	37
	Class 11-12	38	21
	Graduate	50	27
c. Occupation of participant	Agriculture	64	35
	Daily waged worker	71	38
	Govt Job	4	2
	Not Working	42	23
	Own Business	2	1
	Working in private concern	2	1
d. Occupation of spouse	Agriculture	72	39
	Daily waged worker	91	49
	Govt Job	10	5
	Not Working	2	1
	Own Business	4	2
	Working in private concern	6	3
e. Religion	Hindu	181	98
	Others	4	2
f. Social category	Scheduled Tribes	183	99
	Others	2	1

PERSONAL & TREATMENT PROFILE: No participant had history of comorbidities like Diabetes mellitus, Hypertension, Cancers or were on treatment for any other chronic conditions. No history of tobacco use, smoking, alcohol use.

FEEDING PRACTICES: Prevalence of Exclusive Breastfeeding is 71% and EBF for six months was 63%. Colostrum feeding was 96% and details on Breastfeeding practices is presented in Table 2. Major reasons for not giving Colostrum were indigestion & family advice and other reasons presented in Table 3. Supplements in < 6 months children was 83% homemade food, described in Figure 1. Prelacteal feeds given were Water 83%, Cow's milk 71% and 66% mothers' work stand as the reason for not Exclusively Breastfeeding and described in Figures 2,3 respectively.

FACTORS INFLUENCING EXCLUSIVE BREASTFEEDING

Reasons studied were as follows:

SOCIO DEMOGRAPHIC CHARACTERISTICS: namely Age, Age at marriage, Education, Living alone or with parents or in laws & Type of family.

Table 2: Proportions of Breastfeeding practices (N=185, for b N=102)

Indicators	%
a. Prevalence of EBF	71
b. Prevalence of EBF for 6 months	63
c. Breastfed within 1 hour after birth	91
d. Colostrum feed given	96
e. Prelacteal feed given	13

Table 3: Reasons for not feeding with Colostrum (N=8)

Reasons	%
a. Indigestion	75
b. Family advice	70
c. Harmful to mother	53
d. Color is different	38

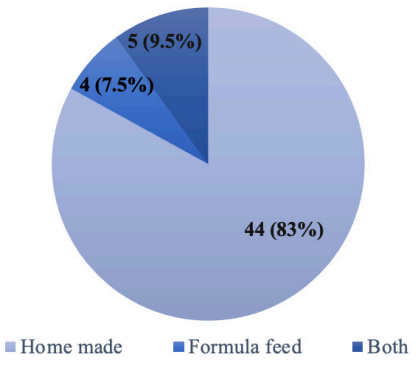

Figure 1: Supplements given for less than 6 months children (N=53)

Table 4: Reasons influencing EBF (N=185)

No	Reasons	Type	non EBF(n)	Total (N)	% Non EBF	P value X^2 test
A	**Socio demographic characteristics**					
1	Age (years)	less than 21	15	40	37.5	0.02
		21 - 25	33	101	32.7	(Trend X^2 0.1)
		26- 30	5	37	13.5	
		more than 30	0	7	0	
2	Age at marriage	less than 21	44	137	32	0.3
		21 - 25	8	42	19	(Trend X^2 0.08)
		26- 30	1	4	25	
		more than 30	0	2	0	
3	Education	less than 10	32	113	28	0.9
		10 & above	21	72	29	
4	Education of spouse	less than 10	28	97	29	0.94
		10 & above	25	88	28	
5	Occupation	No job, daily waged, agriculture	29	113	26	0.26
		Own business, Govt	24	72	33	
6	Occupation of spouse	No job, daily waged, agriculture	25	92	27	
		Own business, Govt	28	93	30	
7	Type of family	Nuclear	39	139	28	0.75
		Joint	14	46	30	
8	Living with	Parents & both	18	59	31	0.37
		In laws	25	100	25	
		Alone	10	26	38	
B	**Baby characteristics**					
9	Gestational age	less than 37 weeks	5	20	25	0.7
		37 & above weeks	48	165	29	
10	Sex of baby	Boy	27	102	26	0.46
		Girl	26	83	31	
11	Birth weight	< 2.5 kg weight	18	61	30	0.85
		2.5 & more weight	35	124	28	
12	Spacing (N=93)	< 18 months	4	22	18	0.41
		18 & above months	19	71	27	
13	Order of birth*	1 & 2nd	48	150	32	0.036
		3rd & higher	5	35	14	(Trend X^2 0.04)
C	**Institutional characteristics**					
14	Place of delivery	Govt	52	176	30	0.23
		Private	1	9	11	
15	Type of delivery	Vaginal	48	159	30	0.25
		LSCS	5	26	19	
16	# Days of hospital stay during delivery	less than 3 days	31	99	31	0.38
		3 & more days	22	86	26	
17	Visit of mother during pregnancy (Ante natal)					
a	To Home by VHN/ASHA*	less than 3 visits	12	24	50	0.01
		3 & more visits	41	161	25	
b	To Health Sub Centre	less than 3 visits	3	10	30	0.9
		3 & more visits	50	175	29	
c	To Primary Health Centre / Govt Hospital	less than 3 visits	14	38	37	0.2
		3 & more visits	39	147	27	
d	To Private Hospital	less than 3 visits	47	172	27	0.14
		3 & more visits	6	13	46	
18	Visit of mother after child birth (Post Natal)					
a	To Home by VHN/ASHA*	less than 3 visits	11	26	42	0.02
		3 & more visits	42	159	26	
b	To Health Sub Centre	less than 3 visits	23	79	29	0.9
		3 & more visits	30	106	28	
c	To Primary Health Centre / Govt Hospital	less than 3 visits	29	110	26	0.4
		3 & more visits	24	75	32	
d	To Private Hospital	less than 3 visits	50	172	29	0.64
		3 & more visits	3	13	23	

*Statistically significant factors associated with non EBF (P < 0.05), % of non EBF is (n/N) *100

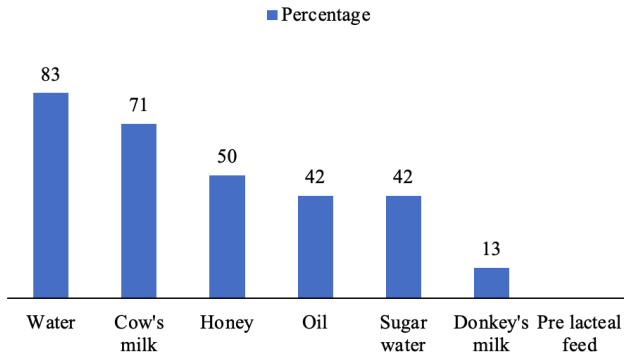

Figure 2: Prelacteal feeds given to children (N = 24)

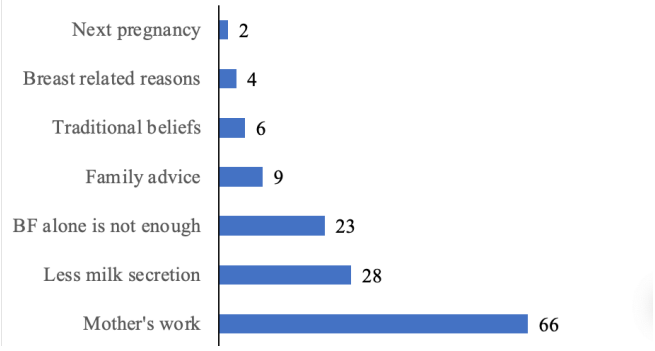

Figure 3: Reasons for EBF not given to children

BABY CHARACTERISTICS: Sex of baby, Baby weight, Order of birth, Spacing from previous child, Gestational age at birth.

INSTITUTIONAL CHARACTERISTICS: Place of birth, Number of days hospital stay during child birth, Visits to Health Sub Centre, Primary Health Centre/General Hospital/ Private Hospital and Home visits during pregnancy and after child birth

FACTORS ASSOCIATED WITH NON EBF: By Order of birth non EBF among 1st & 2nd order is 32% and 3rd & higher order is 14%. By Number of home visits by Village Health Nurse / ASHA non EBF among mothers who had less than 3 visits is 50% & more than 3 visits is 25% during pregnancy and after delivery is 42% & 26% respectively. And were statistically significant. The reasons studied and their proportions are described in Table 4.

DISCUSSION

Only about 44% of infants aged 0–6 months worldwide were Exclusively Breastfed over the period 2015-2020.[3–5] The prevalence of EBF varies in different developing countries mostly hovering around 50% in best scenario and around 35% in most of the countries.[5]

According to NFHS-5, the prevalence of the early initiation of Breastfeeding is 41% and EBF is 63% at National level. Even though EBF is increasing in trend at national level, infants are

introduced supplementary food at the age of 3 months itself instead of Exclusive Breastfeeding[6] and new-borns had been fed with Prelacteal feeds and avoided colostrum.[7–9]

In Tamil Nadu, according to NFHS-5, early initiation of Breastfeeding is 60% and the prevalence of EBF is 55%. With various studies of rural areas of this state, EBF varies from 50 to 70 % and at some areas it is lower than 50%.[10–14]

In this study, Exclusive Breastfeeding among mothers at Pudhur Nadu, Jawadhu hills was 71% that is higher than Tamil Nadu and Exclusive Breastfeeding for six months was 63% is similar to the state. Initiation of Breastfeeding within 1 hour after birth was 91% and 13% Prelacteal feed given & most of them around 80% was Water, Cow's milk and practice of feeding new born child with Donkey's milk exists and accounts for 10% of children who are given Prelacteal feeds. Though Colostrum feed is given by 96% mothers there are beliefs of mothers why they don't feed on Colostrum and the reasons are that it causes indigestion 75%, on family advice 70% & also believe that its harmful to health and the colour of milk is different.

There are factors which may affect feeding practices such as Socioeconomic status, Inadequate knowledge, Maternal education, Cultural variations, Place of living and many other factors.[11,15–17] Here there is no significant difference in EBF among the Sociodemographic characteristics. School education is optimal, Religion & Community is common in the population and seems it has no difference with the EBF practices. Major occupation is agriculture and daily waged work it constitutes more than 50% mothers and 65% mothers state their work as a reason for non EBF of children. By baby characteristics EBF is high among higher order birth babies and by health care facilities / institutional characteristics EBF is high among mothers who had more home visits by health care providers during pregnancy and after child birth.

STRENGTHS

Participants were from all 30 villages of Pudhur Nadu.

LIMITATIONS

Interview of mothers by ASHAs might have led to information bias & reporting bias that might have led to an overestimate of the outcome.

CONCLUSIONS

Among mothers of Pudhur Nadu village Exclusive Breastfeeding practice is higher than expected. In spite of state wide campaign for promotion of breastfeeding, achievements are not up to the desired target. Yet to reach 100% of Exclusive Breastfeeding of babies and for 6 months. Initiation of Breastfeeding, Colostrum feeding is optimal but we see supplements are started before 6 months. Work of mother is the major reason studied for not Exclusively Breastfeeding children. Home visits by health care providers have good impact in higher EBF practices.

RECOMMENDATIONS

To focus on Home visits by health care providers VHN/ ASHA and improve on health education on Breastfeeding and EBF for 6 months.

Study by in-depth interviews with mothers may better find the factors for lack of Exclusive Breastfeeding. MAA (Mother's Absolute Affection) Programme can be evaluated.

Further studies can be conducted including rural & urban population, may give more evidence to plan overall steps to achieve 100% Exclusive Breastfeeding for 6 months to all the children.

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