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Research Article

Knowledge, Attitude and Practice of Breastfeeding among Resident Postnatal Mothers of a Rural Area in Belagavi, India

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Abstract

Background: Breastfeeding is a crucial aspect of nutrition to infant's health that provides benefits to both the mother and the child. The study was done to assess the awareness about breastfeeding and to further address the gaps through health education and promotion activities.

Aim of the Study: This study aims to estimate the prevalence of exclusive breastfeeding and to determine their knowledge, attitude, and practice of breastfeeding among resident postnatal mothers of a rural field practice area.

Methodology: A cross-sectional study was conducted among 476 resident postnatal mothers of 6 to 24 months and breastfeeding. Participants were selected from Kinaye Rural Area. A consecutive sampling technique was adopted. Data on socio-demographic profile, and knowledge, attitude, and practice of breastfeeding were obtained. Data were analyzed using IBM SPSS v23.0. Chi-square, Kruskal Wallis Test, and Linear Correlation were used and p-values <0.05 were considered significant.

Results: The median (IQR) age of the mothers and the children were 25 (4) years and 9.5 (3) months. The prevalence of exclusive breastfeeding in the study was 83.2%. There was an association between the mother's age group, order of birth, and exclusive breastfeeding practice as well as the baby's age group, order of birth and practice scores and place of delivery, and attitude scores. The study also showed statistically significant linear correlation between knowledge, attitude and practice scores.

Conclusion: The estimated prevalence of exclusive breastfeeding was much higher than the national average among rural postnatal mothers in our study area. The linear correlation between knowledge, attitude, and practices proved that they are interlinked.

Keywords: *Exclusive Breastfeeding; Prevalence; Postnatal Mothers; Knowledge; Attitude*

Abbreviations

EBF: Exclusive Breastfeeding; KAP: Knowledge, Attitude, Practice; WHO: World Health Organization; UNICEF: United Nations International Children's Emergency Fund; NVD: Normal Vaginal Delivery; LSCS: Lower Segment Caesarean Section; IYCF: Infant and Young Child Feeding

Introduction

WHO recommends breastfeeding to be initiated within the first hour of life (known as early initiation of breastfeeding) and exclusive breastfeeding (defined as giving no other food or drink - not even water - except breastmilk) for the first six months of life to achieve optimal growth. However, on the contrary, only fewer than half of the children under six months are exclusively breastfed as per the report from WHO [1].

A recent report from UNICEF declares that too few children benefit from the recommended breastfeeding practices, breastfeeding practices vary widely across regions and if breastfeeding is delayed after birth, it can be life-threatening for the newborns. Also, the report shows that early initiation of breastfeeding had commenced only in 39% of the mothers in South Asia [2].

Breastfeeding offers maternal advantages such as reducing the risk of breast cancer, ovarian cancer, postpartum depression, hypertension, cardiovascular disease, and type 2 diabetes mellitus. Additionally, breastfed infants experience lowered chances of atopic dermatitis and gastroenteritis while also exhibiting higher IQ levels in their later years [3]. Furthermore, breastfeeding reduces rates of childhood and adolescent obesity which in turn will prevent hypertension and hypercholesterolemia during adulthood [4].

Several studies in the past have proven the benefits of exclusive breastfeeding (EBF) as well as its impact on mother's physical and emotional health [5-7]. Despite knowing all the potential benefits of breastfeeding, considerable variance exists in the prevalence of EBF between different regions across the globe [8]. As per the NFHS-5 data, the prevalence of exclusive breastfeeding among Rural and Urban mothers was 65.1% and 59.6% respectively [9].

Objective of the Study

The objectives of our current study are to estimate the prevalence of exclusive breastfeeding, assess their knowledge, attitude, and practice towards breastfeeding as well as to determine various predictors affecting their knowledge, attitude, and practice towards breastfeeding.

Materials and Methods

A community-based cross-sectional study was conducted among 476 resident postnatal mothers of a rural area in Belagavi from February 2023 to June 2023 after obtaining informed consent. Ethical clearance was obtained from JNMC Institutional Ethical Committee vide reference no. MDC/JNMCIEC/30 dated 24.01.2023.

A consecutive sampling method was adopted and participants were recruited proportionately from all the health sub-centre areas fulfilling the inclusion criteria until the desired sample size was reached. Kinaye PHC caters to around 73000 population and roughly about 95 babies are delivered per month. Assuming 95 deliveries a month calculated over 5 months, a sample size of 475 was achieved.

The study included all the mothers of > 18 years of age from the area under study having children aged between 6 to 24 months. The study excluded mothers with any contraindication to breastfeeding and infants with any medical conditions that would prevent them from being breastfed.

Data were collected using a pretested structured questionnaire to assess their knowledge, attitude, and various practices of breastfeeding along with their socio-demographic data such as age, educational qualification, occupational status, religion, order of birth, place, mode, and term of delivery.

All the collected data were entered in Microsoft Excel and analyzed using IBM SPSS Statistics v23.0. All the results were tabulated and represented using Descriptive and Inferential statistics. All p-values <0.05 were considered to be significant.

Results

Table 1 depicts the socio-demographic data of our study participants. As our data set did not follow a normal distribution, the data is represented using the median and interquartile range. The median (IQR) age of mothers and their babies in our study were 25 (4) years and 9.5 (3) months respectively making sure that all the mothers included in the study had completed the phase of 6 months of exclusive breastfeeding. Most of the mothers recruited to participate in the study were in the age group of 25-34 years (51.5%) and a majority of their children were in the age group of 6-12 months (75.8%). Most of our mothers had primary education (71.6%), belonging to Hindu religion (78.4%), and delivered at a hospital (98.7%). Also, most of the mothers had reported having learned about breastfeeding from their family members (69.7%).

Characteristics	Frequency (n = 476)	Percentage (%)
Age of Mother [Median (IQR) = 25 (4) years]		
Age of Baby [Median (IQR) = 9.5 (3) months]		
Age of Mother (in years)		
18-24	220	46.2
25-34	245	51.5
35-44	11	2.3
Age of baby (in months)		
6-12	361	75.8
13-18	76	16.0
19-24	39	8.2
Mother's Education		
Primary (1-5)	341	71.6
Secondary (6-12)	89	18.7
Degree	31	6.5
Illiterate	15	3.2
Occupation		
Unemployed/Housewife	425	89.3
Employed	51	10.7
Religion		
Hindu	373	78.4
Muslim	102	21.4
Jain	1	0.2
Order of Birth		
1st	191	40.1
2nd	208	43.7
3rd	71	14.9
4th	6	1.3
Place of Delivery		
Hospital	470	98.7
Home	6	1.3
Mode of Delivery		
NVD	332	69.7
LSCS	144	30.3
Term of Delivery		
Preterm	28	5.9
Term	439	92.2
Post-term	9	1.9
Learnt about breastfeeding from		
Family	332	69.7
Social Media	53	11.1
Health Care Worker	250	52.5

Table 1: *Socio-demographic data.*

Table 2 depicts various knowledge aspects assessed in our mothers. Most of our mothers had very good knowledge of initiation (89.7%), weaning (83.0%), and other benefits of breastfeeding. However, poor knowledge was observed especially with respect to alternative methods of breastfeeding like Milk Bank (18.7%) and making use of breastmilk from other nursing mothers (16.6%) in the event of not being able to breastfeed.

Characteristics	n (%)
Started breastfeeding within 1 hour after delivery	427 (89.7)
Bottle-feeding is harmful to the baby	327 (68.7)
Aware of exclusive breastfeeding	426 (89.5)
Exclusive breastfeeding is for 6 months	435 (91.4)
EBF prevents infections in child	409 (85.9)
It is not acceptable to give water while the baby is on EBF	335 (70.4)
Top feeds are not always required	367 (77.1)
Weaning done after 6 months of EBF	395 (83.0)
Aware of the increased dietary requirement during lactation	350 (73.5)
Aware of the importance of colostrum	369 (77.5)
Factors to assess if the baby has been fed well	
Sleeps well after every feed	44 (9.2)
Passes stool and urine adequately	23 (4.8)
Gaining weight adequately	7 (1.5)
All of the above	402 (84.5)
Alternative methods to adopt, if unable to breastfeed	
Expressed Breast Milk - Katori/Spoon/Paladai	396 (83.4)
Milk Bank	89 (18.7)
Other Nursing Mother	79 (16.6)
Top feeds	96 (14.2)
Don't Know	14 (2.1)

Table 2: *Mother's knowledge regarding breastfeeding (n = 476).*

Table 3 depicts various attitude aspects assessed in our mothers. Most of our mothers had a better attitude towards breastfeeding. Most of the mothers agree that breastfeeding is beneficial to both the mother (91.8%) and the child (99.4%).

Characteristics	n (%)
Breast milk alone is sufficient for the growth of the baby	378 (79.4)
Pre-lacteal feeds are not needed for the child	360 (75.6)
Breastfeeding is beneficial to the mother	437 (91.8)
Breastfeeding is beneficial to the child	473 (99.4)
First milk (colostrum) should not be discarded	385 (80.9)
Breastfeeding will not limit mothers from performing activities	312 (65.5)
Breast milk is better than formula feeds	396 (83.2)
Will encourage other mothers regarding breastfeeding	430 (90.3)
Don't feel anxious during breastfeeding	347 (72.9)
Breastfeeding improves appetite regulation in the baby	353 (74.2)

Table 3: *Mother's attitude towards breastfeeding (n = 476).*

Table 4 depicts various breastfeeding practice aspects assessed in our mothers. About 83.2% of the mothers practiced Exclusive breastfeeding and most of the mothers had followed good breastfeeding practices including 2nd hourly breastfeeding in the first 6 months (85.3%) and maintaining proper hygiene during breastfeeding (97.3%). Also, 53.4% of the mothers reported breastfeeding at least 2 - 3 times at night.

Characteristics	n (%)
Practiced demand breastfeeding	404 (84.9)
Baby takes breastfeeds well	464 (97.5)
Practiced exclusive breastfeeding	396 (83.2)
Learnt about proper positioning of the baby during breastfeeding	435 (91.4)
Followed proper positioning while breastfeeding	456 (95.8)
Practiced 2nd hourly breastfeeding in the first 6 months	406 (85.3)
Baby burps well after every feed	461 (96.8)
Maintain proper hygiene during breastfeeding	463 (97.3)
Didn't give powdered milk when insufficient milk was produced	375 (78.8)
Didn't give calcium or B-complex while breastfeeding	337 (70.8)
Used to wake up the baby at night for feeds	392 (82.4)
Number of times the child was breastfed at night	
Once	102 (21.4)
2-3 times	254 (53.4)
More than 3 times	120 (25.2)

Table 4: *Mother's practices while breastfeeding (n = 476).*

Table 5 depicts the association between covariates and exclusive breastfeeding practice. It shows that there was a statistically significant association between the mother's age group and EBF practice ($p < 0.001$) as well as Order of birth and EBF practice ($p < 0.05$). When applying a Bonferroni method to see the category that was causing the significant difference, it was observed that mothers in the age group of 35 - 44 years had poor EBF practice compared to other categories. Also, the significant difference in Order of birth was due to the 1st order or primigravida mothers who had a better EBF practice compared to other categories of order of birth.

Variables	Exclusive Breastfeeding		Chi-square	p-value
	Yes (n = 396)	No (n = 80)		
Age of Mother (in years)				
18-24	186 (47.0)	34 (42.5)	44.270	0.000
25-34	209 (52.8)	36 (45.0)		
35-44	1 (0.3)	10 (12.5)		
Age of baby (in months)				
6-12	298 (75.3)	63 (78.8)	0.867	0.648
13-18	66 (16.7)	10 (12.5)		
19-24	32 (8.1)	7 (8.8)		
Mother's Education				
Primary (1-5)	283 (71.5)	58 (72.5)	7.219	0.065
Secondary (6-12)	80 (20.2)	9 (11.3)		
Degree	22 (5.6)	9 (11.3)		
Illiterate	11 (2.8)	4 (5.0)		
Occupation				
Unemployed/Housewife	352 (82.8)	73 (17.2)	0.388	0.533
Employed	44 (86.3)	7 (13.7)		
Religion				
Hindu	309 (78.0)	64 (80.0)	0.327	0.849
Muslim	86 (21.7)	16 (20.0)		
Jain	1 (0.3)	0 (0.0)		
Order of Birth				
1st	149 (37.6)	42 (52.5)	8.064	0.045
2nd	180 (45.5)	28 (35.0)		
3rd	63 (15.9)	8 (10.0)		
4th	4 (1.0)	2 (2.5)		
Place of Delivery				
Hospital	392 (99.0)	78 (97.5)	1.187	0.276
Home	4 (1.0)	2 (2.5)		
Mode of Delivery				
NVD	282 (71.2)	50 (62.5)	2.394	0.122
LSCS	114 (28.8)	30 (37.5)		
Term of Delivery				
Preterm	20 (5.1)	8 (10.0)	3.193	0.203
Term	369 (93.2)	70 (87.5)		
Post-term	7 (1.8)	2 (2.5)		

Table 5: Association between covariates and EBF.

Values within () represent percentages among the exclusive breastfeeding categories.

Table 6 depicts the Mean Rank Analysis of the covariates and their respective Knowledge, Attitude and Practice scores. It shows that there was a statistically significant difference between Age group of Babies and overall breastfeeding practice scores ($p < 0.05$) as well as Order of birth and overall breastfeeding practice scores ($P < 0.05$). Also, a statistically significant difference was observed between mothers delivered in hospital and their overall attitude scores ($p < 0.05$), showing that institutional delivery promotes a better attitude towards breastfeeding compared to those delivered at home.

Variable	Knowledge		Attitude		Practice	
	Mean Rank	p-value	Mean Rank	p-value	Mean Rank	p-value
Age of Mother (in years)						
18-24	239.19	0.427	236.38	0.452	231.13	0.424
25-34	235.58		242.49		243.59	
35-44	289.77		191.95		272.41	
Age of baby (in months)						
6-12	237.78	0.968	233.06	0.289	229.38	0.024
13-18	239.41		257.24		260.57	
19-24	243.42		252.35		279.90	
Mother's Education						
Primary (1-5)	234.88	0.615	238.88	0.718	236.13	0.589
Secondary (6-12)	253.62		230.85		242.35	
Degree	245.08		261.92		265.35	
Illiterate	217.40		226.73		214.00	
Father's Education						
Primary (1-5)	235.14	0.399	246.56	0.294	250.37	0.148
Secondary (6-12)	245.57		225.52		218.98	
Degree	227.60		234.56		242.62	
Illiterate	314.83		301.25		225.92	
Religion						
Hindu	236.36	0.698	236.52	0.762	234.96	0.495
Muslim	245.56		246.20		250.73	
Jain	318.00		190.50		312.00	
Order of Birth						
1st	233.46	0.371	236.77	0.211	223.89	0.029
2nd	237.23		234.24		237.32	
3rd	260.42		246.32		276.76	
4th	183.67		348.67		291.83	
Place of Delivery						
Hospital	239.54	0.136	240.12	0.020	238.42	0.913
Home	156.75		111.25		244.42	
Mode of Delivery						
NVD	237.69	0.842	241.88	0.405	238.49	0.998
LSCS	240.37		230.72		238.52	
Term of Delivery						
Preterm	261.25	0.406	228.52	0.320	267.07	0.082
Term	237.97		240.45		238.45	
Post-term	193.39		174.67		151.94	

Table 6: *Mean rank analysis of covariates and KAP scores.*

Table 7 depicts the bivariate correlation analysis of overall knowledge, attitude, and practice scores (Figure 1-3 respectively). It was observed that there was a linear correlation between knowledge and attitude scores, attitude and practice scores, and knowledge and practice scores which were all statistically significant ($p < 0.001$), showing that all three aspects such as knowledge, attitude and practice of breastfeeding is interdependent upon each other wherein ultimately knowledge scores improving both the attitude and practice scores.

Discussion

Our study found a prevalence of 83.2% of exclusive breastfeeding practice which is higher than the national average as reported by Sapna., *et al*. [10]. Almost a similar prevalence (82.0%) was reported by Jelly P., *et al*. [11]. However, considerable variance exists in the

	Attitude Score		Practice Score	
	r	p-value	r	p-value
Knowledge Score	0.264	0.0001	0.399	0.0001
Attitude Score	-		0.361	0.0001

Table 7: *Correlation of knowledge, attitude and practices scores of breastfeeding (n = 476).*

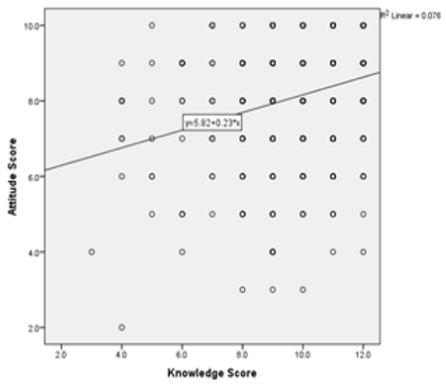

Figure 1

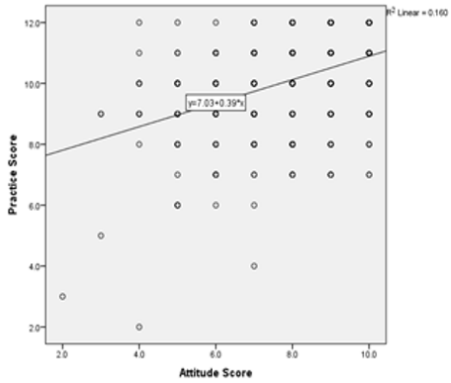

Figure 2

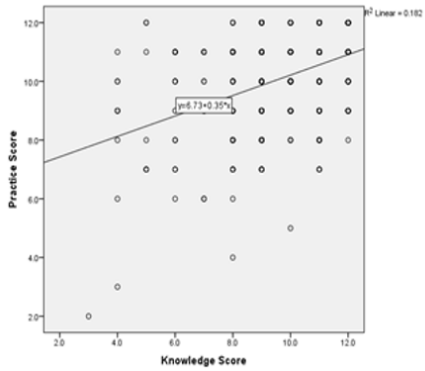

Figure 3

prevalence of exclusive breastfeeding across the country. A study done by Bala K., *et al*. [12] reported a prevalence of 42.7%, Vijayalakshmi P., *et al*. [13] reported a prevalence of 27.0%, Paudel D., *et al*. [14] reported a prevalence of 20.9% of exclusive breastfeeding practice and it is well below the recommended levels in urban slum settlements as reported by Velusamy., *et al*. [15].

Our study found an association between the ages of the mother, order of birth, and exclusive breastfeeding on performing the chi-square test ($p < 0.05$). A similar association was reported by Luo J., *et al*. [16] but in their study mothers having more than three babies had better EBF practice, unlike our study where primigravida mothers had a better EBF practice that was statistically significant. Interestingly, their study also reported an association between married women, those having high school degrees, good knowledge scores, positive attitude scores, and exclusive breastfeeding practice.

Our study also found an association between the age group of babies, order of birth, and practice scores as well as place of delivery and attitude scores having both $p < 0.05$ on mean rank analysis. Nevertheless, our study also found a linear correlation on bivariate analysis between Knowledge and Attitude Scores, Attitude and Practice Scores, and Knowledge and Practice Scores with $p < 0.001$. This shows that having adequate knowledge and attitude will ultimately result in a good breastfeeding practice as reported by Agho., *et al*. [17] which in turn will further positively influence the child's growth as reported by Jabeen., *et al*. [18].

Even though our study did not find any association between employment and breastfeeding, there was an association between employment and exclusive breastfeeding as reported by Chowdhury., *et al*. [19]. However, it was successful only in home-based work. Whereas, concerning the mother's educational status, a similar finding was reported in a study conducted by Pandey., *et al*. [20] implying that awareness regarding breastfeeding had not changed significantly with the educational progress of Indian women. However, the study by Tariqujjaman., *et al*. [21] found a positive association and recommends strengthening national policies to educate women to improve IYCF practices.

In our study, most of the mothers were found to have learned about breastfeeding from their family members (69.7%) followed by healthcare workers (52.5%). Also, the mothers from our study area were found to have optimal knowledge on breastfeeding. However, in contrast, a study conducted by Garg., *et al*. [22] in North India revealed suboptimal results, highlighting significant disparities across the country. Hence, it is more important to provide breastfeeding counselling and create a supportive environment in promoting breastfeeding practices as reported by Kishore., *et al*. [23] and Rollins., *et al*. [24] in their studies respectively.

Conclusion

The estimated prevalence of exclusive breastfeeding in our study area was much higher than the national average among rural postnatal mothers according to the NFHS-5 data. Also, the linear correlation between knowledge, attitude, and practice proved that the scores were interdependent with each other. So, improving knowledge and Attitude will ultimately would result in a good practice. Also, the growing number of working mothers in the current century is a barrier to EBF. Hence, they must be educated on alternative methods like Milk Bank, Other nursing mothers, and Expressed Breastmilk

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Conflict of Interest

None.

Bibliography

1. WHO. "Breastfeeding".
2. UNICEF. "Breastfeeding".
3. Westerfield Katie L., *et al*. "Breastfeeding: Common questions and answers". *American Family Physician* 98.6 (2018): 368-373.
4. Papatesta EM and N Iacovidou. "Breastfeeding reduces the risk of obesity in childhood and adolescence". *Journal of Pediatric and Neonatal Individualized Medicine (JPNIM)* 2.2 (2013): E020206.
5. Del Ciampo., *et al*. "Breastfeeding and the benefits of lactation for women's health". *Revista Brasileira de Ginecologia e Obstetrícia/ RBGO Gynecology and Obstetrics* 40.6 (2018): 354-359.
6. Binns Colin., *et al*. "The long-term public health benefits of breastfeeding". *Asia Pacific Journal of Public Health* 28.1 (2016): 7-14.
7. von der Ohe Gudrun. "Benefits of breastfeeding". *Deutsches Ärzteblatt International* 115.26 (2018): 453.
8. Zong Xin'nan., *et al*. "Global prevalence of WHO infant feeding practices in 57 LMICs in 2010-2018 and time trends since 2000 for 44 LMICs". *EClinicalMedicine* 37 (2021): 100971.

9. Government of India. "National Family Health Survey (NFHS-5) 2019-21".

10. S Patil Sapna. "Prevalence of exclusive breast feeding and its correlates in an urban slum in Western India". *International E-Journal of Science, Medicine and Education* 3.2 (2009): 14-18.

11. Jelly Prasuna., *et al*. "Knowledge, preferences, practices, and attitudes about breastfeeding among postnatal mothers in Uttarakhand, India: A cross-sectional study". *Indian Journal of Community Health* 34.2 (2022): 294-300.

12. Bala Kiran., *et al*. "Knowledge, attitude, and breast-feeding practices of postnatal mothers in Jammu: A community hospital based cross sectional study". *Journal of Family Medicine and Primary Care* 9.7 (2020): 3433-3437.

13. Vijayalakshmi Poreddi T and D Mythili Susheela. "Knowledge, attitudes and breast feeding practices of postnatal mothers: a cross-sectional survey". *International Journal of Health Sciences* 9.4 (2015): 363-372.

14. Paudel Deepak Raj., *et al*. "Knowledge, attitude and practice of mothers in breast feeding: a hospital based study". *Janaki Medical College Journal of Medical Science* 10.1 (2022): 14-23.

15. Velusamy Vasanthakumar., *et al*. "Exclusive breastfeeding practices among mothers in urban slum settlements: pooled analysis from three prospective birth cohort studies in South India". *International Breastfeeding Journal* 12.1 (2017): 35.

16. Luo Jiayou., *et al*. "Knowledge, attitude, and practice of exclusive breastfeeding among mothers attending Masaka District Hospital Kigali/Rwanda: A cross-section study". Research Square (2021).

17. Agho Kingsley E., *et al*. "Determinants of exclusive breastfeeding in Nigeria". *BMC Pregnancy and Childbirth* 11.1 (2011): 2.

18. Jabeen Ayesha., *et al*. "Assessment of breastfeeding, weaning, and complementary feeding practices among women attending a tertiary care teaching hospital in South India". *Cureus* 14.9 (2022): e28791.

19. Chowdhury Antara Rai., *et al*. "Breastfeeding knowledge and practices of working mothers in the informal economy in New Delhi: A formative study to explore new intervention pathways towards improved maternal and child health outcomes". *Social Science and Medicine (1982)* 281 (2021): 114070.

20. Pandey Deeksha., *et al*. "Awareness and attitude towards breastfeeding among two generations of Indian women: a comparative study". *PloS One* 10.5 (2015): e0126575.

21. Tariqujjaman Md., *et al*. "Association between mother's education and infant and young child feeding practices in South Asia". *Nutrients* 14.7 (2022): 1514.

22. Garg Rajesh., *et al*. "Breastfeeding knowledge and practices among rural women of Punjab, India: A community-based study". *Breastfeeding Medicine: The Official Journal of the Academy of Breastfeeding Medicine* 5.6 (2010): 303-307.

23. Kishore M Sai Sunil., *et al*. "Breastfeeding knowledge and practices amongst mothers in a rural population of North India: A community-based study". *Journal of Tropical Paediatrics* 55.3 (2009): 183-188.

24. Rollins Nigel C., *et al*. "Why invest, and what it will take to improve breastfeeding practices?" *The Lancet* 387.10017 (2016): 491-504.

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