Available online: http://journal.ipb.ac.id/index.php/jgizipangan
Accredited based on DGHE, Republic of Indonesia No. 28/E/KPT/2019
ISSN 1978-1059 EISSN 2407-0920

J. Gizi Pangan, July 2020, 15(2):101-108
DOI: 10.25182/jgp.2020.15.2.101-108

Breastfeeding Practices among Mothers at Birth and at 6 Months in Urban Areas of Delhi-Ncr, India

Urvashi Mehlawat[1], Seema Puri[1*], Tejmeet Kaur Rekhi[1]
[1]Department of Food and Nutrition, Institute of Home Economics, University of Delhi, New Delhi 110016, India

ABSTRACT

The objective of the present was to potray the breastfeeding practices followed by breastfeeding mothers, at birth and at 6 months, in urban areas of Delhi-National Capital Region. For this, 185 dyads of mother-infant aged 6 months were selected from Pediatric Outpatient Department of a government and a private hospital. A questionnaire-cum-interview was designed to collect the participants' information on breastfeeding practices. It was found that only 29.7% infants had early initiation of breastfeeding despite the high (78.9%) institutional deliveries. Around 40.5% infants were given feeds apart from breast milk, mainly infant formula (81.3%) at the hospital after birth. There were 13% infants who received pre-lacteal feeds, mainly as a traditional family custom. The practice of exclusive breastfeeding for first six months was followed by 62.2% mothers. Complementary feeding or top feeding was received by 71.9% infants, but only 45.1% mothers initiated complementary foods at the recommended age of 6 months. It can be concluded that in the urban areas of India breastfeeding practices remains poor even after rigorous work done for promotion and protection of breastfeeding. Hence strong institutional care and support for breastfeeding is required at birth and efficient counseling for appropriate feeding of the infant is needed to intensify breastfeeding.

Keywords: breastfeeding, breast milk, complementary feeding

INTRODUCTION

Breastfeeding practices like initiation of breastfeeding within one hour of birth and exclusive breastfeeding for the first six months of life have immense public health importance (Gupta *et al.* 2019). Breastfeeding has nutritional, immunological, behavioral and economic benefits and also provide desirable mother infant bonding (Shili *et al.* 2012). Breastfeeding offers adequate nutrition for the baby as well as build up the bond between mother and their baby (Pangestuti 2018). The beneficial effects of breastfeeding depend on time of breastfeeding initiation, its duration and the age at which the breastfed child is weaned (Victoria *et al.* 1987). The Lancet 2013 report showed that optimal breastfeeding has a greater role in averting 13% of all deaths under the age of 5 years in developing countries (UNICEF 2015). Optimal breastfeeding practices are potentially one of the top interventions for reducing under-five mortality and is essential for the achievement of many of the newly launched Sustainable Development Goals by 2030, as it can help to improve child and maternal health, nutrition, economy, intelligence, and human capital, while reducing inequalities (Sultania *et al.* 2019).

Colostrum, the milk secreted in the first 2–3 days after delivery, acts as the first immunization right after birth for the newborn. Colostrum is rich in white cells and antibodies, especially sIgA, and it contains a larger percentage of protein, minerals and fat-soluble vitamins (A, E, and K) than later milk (Polineni *et al.* 2016). Hence early initiation of breast feeding is essential for the infant to avail of the benefit of colostrum.

Exclusive breastfeeding (EBF) is defined as giving no food to the infant except breast milk except oral rehydration solution, vitamins, minerals or medicines (WHO 2003). EBF for the first six months of life is the cornerstone of optimum infant nutrition (WHO 2008). It reduces the risk of the infant to experience diarrheal diseases (Ogbo *et al.* 2017; Ogbo *et al.* 2017; Victoria *et al.* 2016; Ogbo *et al.* 2018), upper respiratory tract infections, obesity in later life, and EBF could also improve the neurocognitive functions of the child (Victoria *et al.* 2016). Breastfed babies have less chance of allergies, asthma and eczema. Evidence suggests that exclusive breastfeeding for at least two months

[*]**Corresponding Author:** tel: +91-9810003220, email: dr.seemapuri@gmail.com

protects susceptible children from Type I insulin dependent diabetes mellitus (IDDM) (Polineni *et al.* 2016).

In ancient time, breastfeeding was the only source of feeding of newborn, but during industrialization, urbanization and modernization, this practice has gradually declined (MoHFW, GOI 2013). Studies have shown that EBF rates were influenced by mother's education, age, and employment; infant's age, sex; access to healthcare; neighborhood of residence; and exposure to mass media or counselling (Martines *et al.* 1989; Kimani-Murage *et al.* 2011; Tamiru *et al.* 2013, Setegn *et al.* 2012; Mekuria & Edris 2015).

Though there has been an improvement in the breastfeeding status in India over decades due to strengthening of policies, effective capacity building initiatives, community-based actions and strategic mass media communication (Aguayo *et al.* 2016), further progress is necessary as highlighted in National Health and Family Survey (NFHS)-4 (2015-16). Data shows that only 41.6 percent children are breastfed within first hour of birth in spite of a substantial increase in the rates of institutional deliveries from 38.7 per cent (NFHS-3) to 78.9 per cent (NFHS- 4) during a span of ten years. Also, nearly half (45.1%) the children under six months of age are not exclusively breastfed for the first six months (IIPS 2017). NFHS-4 also shows that 21% newborns receive pre-lacteal feeds and about 22% babies are born with low birth weight, who need extra support. Many of the current institutional birth in India were done in private facilities. While, evidence suggest that introduction of infant formula in private health facilities is a common practice (Gupta & Thankur 2018).

Thus, to achieve optimum breastfeeding status, it becomes imperative to first understand the breastfeeding practices followed by mothers and the healthcare providers. So, the objective of the present study is to investigate the breastfeeding practices followed by breastfeeding mothers when their babies were at birth and at 6 months in Urban Delhi-NCR.

METHODS

Design, location, and time

The present study was a descriptive cross-sectional study undertaken at the Outpatient Pediatric Department (OPD) of a private clinic and Government Hospital in Gurugram (NCR). The data was collected from March 2017 to December 2017.

Sampling

A total of 185 mother-infant (6 months) dyads attending Pediatric OPD of two sites i.e. 100 from a private clinic, Gurugram and 85 from public hospital, of Gurugram were selected purposively due to their high OPD rate to assess the breastfeeding practices followed by mothers when their babies were at birth and at 6 months in Delhi-NCR. Infants aged less than or more than 6±0.5 months, infants suffering from any severe chronic disease or disorder, twins, low birth-weight, pre-term and, infants never breastfed were not included in the study.

Data collection

The tool for data collection used was a detailed questionnaire followed by structured interview designed to record the respondents' socio-demographic profile, infants' details, maternal details, information on breastfeeding practices i.e. early initiation of breastfeeding, top feeds and pre-lacteals given, exclusive breastfeeding for six months, continued breastfeeding, bottle feeding and initiation of complementary feeding. Retrospective data was collected to get information about early breastfeeding practices of mothers around birth.

Participant information sheet was given to the enrolled respondents and a written informed consent was obtained before conducting the interview. The participant information sheet was read out to mothers who were illiterate, and their thumb prints were taken on informed consent sheet. Written permission was also obtained from both of the study sites i.e. private clinic, Gurugram and District Civil Hospital, Gurugram for conducting the study. Ethical clearance (IHE/2017/Ethics/019) was granted from the Institutional Ethics Committee of the Institute of Home Economics, University of Delhi.

Data analysis

Data coding and data entry was done using in MS Excel. Frequency and percentages were calculated for the participants' socio-demographic profile, infants' details, maternal details, immunization details, IYCF practices.

Mean and standard deviations were calculated for continuous variables.

RESULTS & DISCUSSION

Socio-demographic details

Infants. The results of the present study highlighted that of the total 185 infants, 63.7% were males and 36.2% were females respectively, with majority (92.4%) being Hindus. The mean (SD) age of the infants was 6±0.52 months and the mean (SD) birth weight was 2.8±0.54 kg. No significant difference (p=0.13) was found between the birth weight of infants from Civil Hospital and private hospital clinic. Most (53%) of the infants were delivered at Government Hospital followed by 44.3% at Private hospital. Regarding the mode of delivery, 62.7% were vaginal deliveries while 37.2% were C-section deliveries. Nearly half (46.5%) of the infants were the first-born child (Table 1).

Mothers. Maternal age ranged from 17 to 38 years and nearly half (55.4%) the mothers were between the age of 23 to 27 years. Twenty-six per cent mothers were graduates followed by 22.7% who had senior secondary level of education. Only 12.4% were illiterate. Majority (91.4%) of the mothers were housewives. There were 48.1% mothers who had only one child and 36.8% with two children. Amongst all mothers, 56.2% belonged to joint families but more mothers i.e. 61.2% attending civil hospital had a nuclear family as compared to 29% mothers attending private hospital. This could be because mothers attending Government Hospital originally belonged to other states and settled in Delhi-NCR with their husband and children. More than half (55.1%) of the participants had four to six members in the family (Table 2).

Table 1. Characteristics of infants 6 months of age visiting pediatric Outpatient Pediatric Department (OPD) of private clinic and civil hospital, Gurugram

Characteristic	Frequency (n=185)	Percentage
Gender		
Males	118	63.7
Females	67	36.2
Religion		
Hindu	171	92.4
Muslim	13	7
Sikh	1	0.5
Place of delivery		
At home	5	2.7
Private hospital	82	44.3
Government hospital	98	53
Type of delivery		
Vaginal	116	62.7
C-section	69	37.2
Birth Order		
First	89	48.1
Second	68	36.8
Third	22	12
Fourth	6	3.2

Early breastfeeding practices

Early initiation of breastfeeding was found to be sub-optimum in the present study (Figure 1). Around one-third (29.7%) of the infants were fed breastmilk within one hour of the birth. Among the mothers attending pediatric OPD of private clinic, only 22% reported to feed their infant with breastmilk within first one hour of birth while 38.8% mothers from civil hospital did so. In the case of C-section deliveries, 87% of the infants first received breastmilk after two or more days. Regarding colostrum feeding, 94.1% of infants received it after birth with 92.4% from private hospital and 91% from civil hospital. Two-third (69.7%) of the mothers fed it because it was suggested by the doctor/health worker followed by only 28% reported feeding it as it is good for the immunity of the baby. Half the mothers who did not feed colostrum to their babies followed the advice of the doctors/health workers, who suggested them not to give their colostrum to their baby. Only 13% infants received pre-lacteals such as honey, ghutti and it is mostly as a traditional practice followed in the family (75%). About 45% of the infants were given feeds other than breastmilk, infant formula being the most commonly (81.3%) given at the hospital right after birth. When analyzed according to the place

Table 2. Socio-demographic characteristics of mothers visiting pediatric Outpatient Pediatric Department (OPD) of private clinic and civil hospital, Gurugram

Characteristic	Frequency (n=185)	Percentage
Age (years)		
17−22	36	19.5
23−27	97	52.4
28−32	41	22.2
33−37	11	6
Education		
lliterate	23	12.4
Primary school	7	3.8
Middle school	21	11.4
Secondary school	27	14.6
Senior secondary school	42	22.7
Graduation	48	26
Post-graduation	27	14.6
Livelihood		
Working	16	8.6
Non-working	169	91.4
Parity		
1	89	48.1
2	68	36.8
>2	28	15.1
Type of family		
Nuclear	81	43.8
Joint	104	56.2
Size of family		
<4	47	25.4
4−6	102	55.1
>6	36	19.5

of birth, 36.5% infants from Government Hospital and 53% infants delivered in private hospital received top feeds such as infant formula, animal milk, pulse water.

Breastfeding practices at 6 months

Majority of the mothers (92.4%) were breastfeeding their child at the age of 6 months and only 7.5% mothers discontinued it by 5 months of age. Insufficiency of breastmilk was the primary reason for discontinuing breastfeeding as reported by 71.4% mothers from both private clinic and Government hospital who no longer breastfeeding. There were 46.2% mothers who were feeding breastmilk to their child for more than 12 times a day. When asked about the sufficiency of breastmilk for fulfilling all nutritional requirements of the infant at 6 months, 68.6% mothers suggested that breastmilk alone is not enough for the proper growth and development of the baby and hence foods other than breastmilk needs to be given to the child (Table 3).

Exclusive breastfeeding and complementary feeding

Table 4 highlights the exclusive breastfeeding and complementary feeding status of the mothers. Overall 62.2% infants were exclusively breastfed for the first 6 months or beyond. Almost similar percentage of mothers i.e. 61% from both private clinic and 63.5% from civil hospital reported exclusively breastfeeding their child. Complementary feeding/top feeding was initiated by 71.8% mothers mostly because they felt that the baby was hungry even after breastfeeding. But only 32.4% mothers initiated complementary feeding at an appropriate age of 6 months. Bottle feeding was reported among 23.8% infants. When inquired about the foods

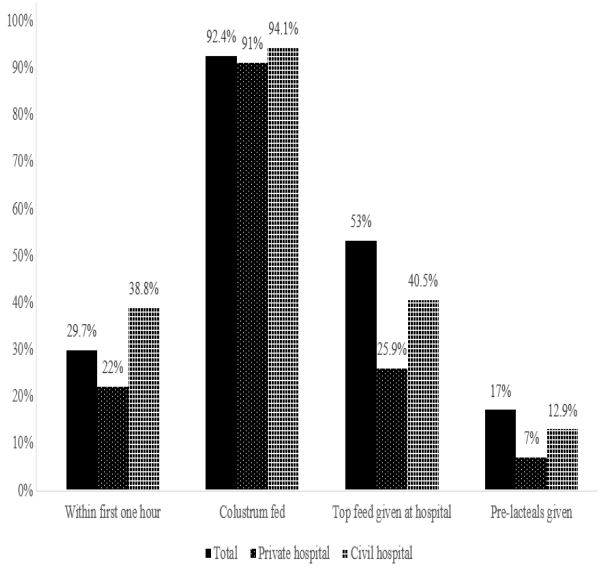

Figure 1. Early breastfeeding practices amongst mothers of infants 6 months of age

Table 3. Breastfeeding practices amongst mothers of infants at 6 months

Breastfeeding Practices (BF) at 6 months	Frequency (n=185)	Percentage
Continued BF at 6 months	171	92.4
Frequency of BF/day	(n=171)	(n=171)
<3 times	2	1.2
3−6 times	7	4.1
6−9 times	30	17.5
9−12 times	53	31
>12 times	79	46.2
Duration of BF before discontinuation	(n=14)	(n=14)
<3 months	4	28.6
3−5 months	10	71.4
*Reasons to stop BF	(n=14)	(n=14)
Age of the infant	1	7.1
Child stopped himself/herself	4	28.6
Insufficient breast milk	10	71.4
Mother was sick	1	7.1
Mother resumed work	1	7.1
Breast milk sufficient at 6 months (mother's perception)		
Yes	58	31.3
No	127	68.6

*Multiple responses

given to the infant in the past 24 hours, 35.7% infants received breastmilk only, 34.6% infants received semi-solid foods and 27.6% infants were given animal-source milk. These foods were mainly given as the mothers felt that the baby was hungry or thirsty, advised by doctor/ health worker or by mother/mother-in-law.

Appropriate feeding is crucial for the healthy growth and development of the infants. Breastmilk is the natural first food for babies. It continues to provide upto half or more of the child's nutritional needs during the second half of the first year, and upto one third during the second year of life (WHO 2009). In the present study few early breastfeeding practices were found to be sub-optimal even after 97.3% institutional births. Provision of mother's breast milk to infants within an hour of birth is referred to as "early initiation of breastfeeding" (EIBF). This ensures that the colostrum or "the first milk," which is rich in protective factors, is given to the infants immediately after delivery. In developing countries like India, EIBF could save about 1.45 million lives a year, attributed to various infections (Lauer *et al.* 2006). Early initiation of breastfeeding was as low as 22% in the present study. Shili and co-authors conducted a study in rural areas of Uttarakhand to know breast feeding practices of mothers and to strengthen these practices among 500 mother infant dyads. They also found that only 21.37% of the infants received breastmilk within first one hour of birth (Shili *et al.* 2012). Major barriers to early initiation of breast feeding includes lack of awareness regarding proper technique of breastfeeding and benefits of colostrum, breast abnormality like inverted/retracted nipples, obstetric/neonatal complications requiring

Table 4. Exclusive breastfeeding and complementary feeding practices amongst mothers of infants at 6 months

Indicators	Frequency (n=185)	Percentage
Exclusive breastfeeding untill 6 months or beyond	115	62.2
Children receiving complementary feeding (CF)	133	71.8
Initiation of CF at 6 months	60	32.4
Bottle feeding	44	23.8

specialized care, and cultural practices like giving pre-lacteals and gender discrimination (Majral & Silan 2016). Breast feeding initiation can be particularly delayed for infants born by caesarean section. Prospective cohort studies in India have shown that infants born by caesarean section were almost four times less likely to initiate breast feeding within 1 hour of birth than infants born by vaginal delivery (Patel *et al.* 2015). Only 13% infants delivered by C-section received breastmilk within first one hour of the birth. This indicates that adequate support is not provided to mother during caesarean section delivery which acts as a barrier in early initiation of breastfeeding. However, colostrum was given to majority (92.4%) of the infants which is an improvement based on the Infant and Young Child Feeding (IYCF) recommendations. Similar findings were reported by Polineni *et al.* where 96.3% mothers fed colostrum to the infants (Polineni *et al.* 2016). But 69.7% mothers gave colostrum as it was suggested by the doctor/health which reflects that there is a lack of knowledge among mothers about the benefits of colostrum feeding in the present study. Pre-lacteals such as honey, ghutti was given to only 13% infants mainly as a traditional practice in the family which can be considered as a success in IYCF counseling in India. On contrary to this, Shili and associates reported that pre-lacteals such as sugar water, honey and gripe water were given to 61.8% infants (Shili *et al.* 2012).

While continued breastfeeding at 6 months was observed among 92.4% mothers, exclusive breastfeeding was practiced by 62.2% mothers which is more than the figure (54.9%) reported in NFHS-4 (IIPS 2017). The results are similar to another study carried out by Kumari *et al,* in Telangana where exclusive breastfeeding was followed by 60.6% mothers (Kumari *et al.* 2017). In another study in Karnataka only 40% mothers were exclusively breastfeeding their babies (Madhu *et al.* 2009). The most common reason seen for discontinuing exclusive breastfeeding before six months is insufficiency of breastmilk as perceived either by the mother herself or the family members.

In the present study 71.8% infants received complementary foods/top milk but only 32.4% received them at the appropriate age of six months. Either early or late introduction of the complementary foods was observed. This shows the lack of knowledge among the mothers regarding appropriate age of initiation of complementary feeding and to certain extent the pressure from family members as the majority of the mothers belonged to joint family. The insufficiency of breast milk was a major concern for the grandmothers who recommended their daughter/ daughter-in-law to start giving the child other foods before six months (Fjeld *et al.* 2008). Likewise Aggarwal *et al.* reported that only 17.5% mothers started complementary feeding at the recommended time (Aggarwal *et al.* 2008). On the other hand among 200 mothers, 77.5% started complementary feeding at the recommended age of six months as highlighted in another hospital based study in Mangalore (Rao *et al.* 2011)

CONCLUSION

It can be concluded that the present study focuses on the need of support provided for early initiation of breastfeeding to the mothers at the health facility especially for those who had caesarean section deliveries. The practice of giving top feeds at the hospital right after the birth should be discouraged and a more stringent monitoring system should be developed to prevent these malpractices. Though there seems to be an improvement in exclusive breastfeeding, further education and awareness should be provided during ante-natal and post–natal counselling to mothers as well as the family members regarding the benefits of early and exclusive breastfeeding and continued breastfeeding till two years of age

as well as the proper time for complementary feeding initiation.

ACKNOWLEDGEMENTS

Th authors would like to acknowledge all the participants for giving consent to be a part of this study. The authors have no conflict of interest.

AUTHOR DISCLOSURES

The authors have no conflict of interest.

REFERENCES

Aggarwal A, Verma S, Faridi MMA, Dayachand. 2008. Complementary feeding reasons for inappropriateness in timing, quantity and consistency. Indian j Pediatr 75(1):49−53. https://doi.org/10.1007/s12098-008-0006-9.

Aguayo VM, Gupta G, Singh G, Kumar R. 2016. Early initiation of breast feeding on the rise in India. BMJ Glob Health 1(2):e000043. doi: 10.1136/bmjgh-2016-000043.

Fjeld E, Siziya S, Katepa-Bwalya M, Kankasa C, Moland KM, Tylleskar T. 2008. 'No sister, the breast alone is not enough for my baby' A qualitative assessment of potentials and barriers in the promotion of exclusive breastfeeding in southern Zambia. Int Breastfeed J 3(1): 26. https://doi.org/10.1186/1746-4358-3-26.

Gupta A, Dadhich J, Ali SM, Thakur N. 2019. Skilled counseling in enhancing early and exclusive breastfeeding rates: An experimental study in an urban population in India. Indian Pediatr 56(2):114−118. https://doi.org/10.1007/s13312-019-1482-x.

Gupta A, Thakur N. 2018. Infant and young feeding practices in India: Current status and progress towards SDG targets. Proc Indian Natl Sci Acad 84(4): 853-865. https://doi.org/10.16943/ptinsa/2018/49440.

[IIPS] International Institute for Population Sciences and Macro International. 2017. National Family Health Survey (NFHS-4), 2015−2016: India. Mumbai (IN): IIPS.

Kimani-Murage EW, Madise NJ, Fotso JC, Kyobutungi C, Mutua MK, Gitau TM, Yatich N. 2011. Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya. BMC Public Health 11(1):396. https://doi.org/10.1186/1471-2458-11-396.

Kumari SMV, Rani GS, Rao BB. 2017. A study on infant feeding practices in rural areas of Warangal district, state of Telangana, India. Int J Contemp Med Res 4(4):789−791.

Lauer JA, Betrán AP, Barros AJ, de Onís M. 2006. Deaths and years of life lost due to suboptimal breast-feeding among children in the developing world: A global ecological risk assessment. Public Health Nutr 9(6):673−685. https://doi.org/10.1079/PHN2005891.

Madhu K, Chowdary S, Masthi R. 2009. Breast feeding practices and newborn care in rural areas: A descriptive cross-sectional study. Indian J Community Med 34:243−246. doi: 10.4103/0970-0218.55292.

Majral JP, Silan VK. 2016. Barriers to early initiation and continuation of breastfeeding in a tertiary care institute of Haryana: A qualitative study in nursing care. J Clin Diagn Res 10(9): LC16–LC20. doi: 10.7860/JCDR/2016/19072.8559.

Martines JC, Ashworth A, Kirkwood B. 1989. Breast-feeding among the urban poor in southern Brazil: reasons for termination in the first 6 months of life. Bull World Health Organ 67(2):151–61.

Mekuria G, Edris M. 2015. Exclusive breastfeeding and associated factors among mothers in Debre Markos, Northwest Ethiopia: A cross-sectional study. Int Breastfeed J 10:1. ttps://doi.org/10.1186/s13006-014-0027-0.

[MoHFW] Ministry of Health and Family Welfare, GOI. 2013. Guidelines for enhancing Infant and Young Child Feeding Practices. http://nrhm.gov.in/images/pdf/programmes/child-health/guidelines/Enhancing-optimal-IYCF-practices.pdf. [Accessed 5th Jan 2015].

Ogbo FA, Agho K, Ogeleka P, Woolfenden S, Page A, Eastwood J. 2017. Infant feeding practices and diarrhoea in sub-Saharan African countries with high diarrhoea mortality. Plos One 12(2):e0171792. doi:10.1371/journal.pone.0171792.

Ogbo FA, Nguyen H, Naz S, Agho KE, Page A. 2018. The association between infant and young child feeding practices and diarrhoea in Tanzanian children. Tropical Medicine and Health 46(2):1-9. doi 10.1186/s41182-018-0084-y.

Ogbo FA, Page A, Idoko J, Claudio F, Agho KE. 2016. Diarrhoea and suboptimal feeding practices in Nigeria: evidence from the national household surveys. Paediatr Perinat Epidemiol 30:346–55. https://doi.org/10.1111/ppe.12293.

Pangestuti, DR. 2018. Nutritional status of exclusive compared to non exclusive breastfeeding mother. J Gizi Pangan 13(1):11−16. https://doi.org/10.25182/jgp.2018.13.1.11-16.

Patel A, Bucher, S, Pusdekar Y, Esamai F, Krebs NF, Goudar SS, Chomba E, Garces A, Pasha O, Saleem S, Kodkany BS, *et al.* 2015. Rates and determinants of early initiation of breastfeeding and exclusive breast feeding at 42 days postnatal in six low and middle-income countries: A prospective cohort study. Reproductive Health 12(Suppl 2):S10. https://doi.org/10.1186/1742-4755-12-S2-S10.

Polineni V, Boralingiah P, Kulkarni P, Manjunath R. 2016. A comparative study of breastfeeding practices among working and non-working women attending a tertiary care hospital, Mysuru. Ntl J Community Med 7(4):235−240.

Rao S, Swathi PM, Unnikrishnan B, Hegde A. 2011. Study of complementary feeding practices among mothers of children aged six months to two years – A study from coastal South India. Australas Med J 4(5):252−257. doi:10.4066/AMJ.2011.607.

Setegn T, Belachew T, Gerbaba M, Deribe K, Deribew A, Biadgilign S. 2012. Factors associated with exclusive breastfeeding practices among mothers in Goba district, south East Ethiopia: A cross-sectional study. Int Breastfeed J 7(1):17. https://doi.org/10.1186/1746-4358-7-17.

Sultania P, Agrawal NR, Rani A, Dharel D, Charles R, Dudani R. 2019. Breastfeeding knowledge and behavior among women visiting a tertiary care center in India: A cross-sectional survey. Ann Glob Health. 85(1):64. doi: 10.5334/aogh.2093.

Tamiru D, Aragu D, Belachew T. 2013. Survey on the introduction of complementary foods to infants within the first six months and associated factors in rural communities of Jimma Arjo. International Journal of Food Sciences and Nutrition 2(2):77–84. doi: 10.11648/j.ijnfs.20130202.18.

[UNICEF]. United Nations Children's Fund. 2015. Breastfeeding. http://www.unicef.org/nutrition/index_24824.html. [Accessed 24th January 2019].

Victoria CG, Bahl R, Barros AJD, França GVA, Horton S, Krasevec J, Murch S, Sankar MJ, Walker N, Rollins NC. 2016. Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. The Lancet 387(10017):475–90. https://doi.org/10.1016/S0140-6736(15)01024-7.

Victoria CG, Vaughan JP, Lombardi C, Fuchs SMC, Gigante LP, Smith OG, Nobre LC, Teixeira AB, Moreira LB, Barros FC l. 1987. Evidence for protection by breastfeeding against infant deaths from infectious diseases in Brazil. The Lancet 330(8554):319−322. https://doi.org/10.1016/S0140-6736(87)90902-0.

Shili V, Parul S, Kanpal SD, Jayanti S, Anurag S, Vipul N. 2012. A community based study on breastfeeding practices in a rural area of Uttarakhand. National Journal of Community Medice 3(2):283−287.

[WHO] World Health Organization. 2003. Global Strategy for Infant and Young Child Feeding. Geneva (CH): World Health Organization.

[WHO] World Health Organization. 2008. Indicators for Assessing Infant and Young Child Feeding Practices. Geneva (CH): World Health Organization.

[WHO] World Health Organization. 2009. Breastfeeding.http://www.who.int/entity/child_adolescent_health/topics/prevention_care/child/nutrition/breastfeeding/en. [Accessed 14th October 2009].