

Practices and Knowledge of mothers' about infant nutrition: A cross-sectional analysis

¹Rajan Kumar Barnwal, ²Luguram Tudu, ³Durga Charan Besra

Assistant Professor, Department of Preventive and Social Medicine, MGM Medical College and Hospital, Jamshedpur, Jharkhand, India,

rajan_barnwal87@yahoo.in

Assistant Professor, Department of Preventive and Social Medicine, MGM Medical College and Hospital, Jamshedpur, Jharkhand, India, drluguramtudu@gmail.com

Assistant Professor, Department of Radiology, MGM Medical College and Hospital, Jamshedpur, Jharkhand, India, durgacbesra@gmail.com

Corresponding Author: Rajan Kumar Barnwal, rajan_barnwal87@yahoo.in

Date of submission: 10 October 2023

Date of Acceptance: 17 October 2023

Date of Publication: 30 November 2023

Abstract

Introduction: Child feeding practices, such as breastfeeding, have an impact on the nutritional status of infants and toddlers. The comfort and knowledge of the mother regarding lactation are determinants of feeding outcomes. *Aim:* With the aforementioned context in mind, the purpose of this study is to evaluate the level of knowledge and practise concerning infant nutrition among mothers whose children are between 0 and 12 months old.

Methods: The OutPatient Department of the Paediatrics department at MGM Medical College and Hospital, a tertiary care facility located in the Kolhan division of Jharkhand, was the site of this descriptive cross-sectional study. The study was carried out between February 2022 and August 2023.

Results: A total of 224 study participants (100%) possessed the understanding that all infants should be breastfed; however, knowledge regarding exclusive lactation was limited to 66.52%. With regard to the prompt commencement of lactation subsequent to childbirth, 50.45% of the respondents indicated that they had knowledge. Within an hour of delivery, a majority of the participants (133, or 59.38%) in this study commenced lactation. Four hours following childbirth, a mere 20% of the mothers [43 (19.20%)] initiated lactation.

Conclusion: The current study demonstrates that the lactation behaviour exhibited by the

participants in the research remains suboptimal.

Keywords: *Breastfeeding, Child feeding, Breastfeeding practice, Child health*

Introduction

In addition to maternal health, breastfeeding is one of the most effective ways to assure the survival and well-being of children. [1] The World Health Organisation (WHO) advises against exclusive breastfeeding for the first six months of a child's life; thereafter, continuous breastfeeding with the addition of suitable complementary foods is encouraged [2, 3]. Child nourishment practises, such as breastfeeding, have an impact on the nutritional status of infants and toddlers. The variations in breastfeeding and complementary feeding practises

observed between and within countries can be attributed to cultural, educational, and economic factors, as well as the needs of the mother and neonate [4].

It has been documented that high-income nations have a reduced duration of breastfeeding in comparison to low-income and middle-income nations. However, it is worth noting that even in low-income and middle-income nations, the percentage of exclusively breastfed infants under the age of six months stands at a mere 37% [5]. Low nutritional status is a significant contributor to mortality among infants aged below two years in India [6]. More than 15% of fatalities among children are attributed to nutrition practises, with a particular emphasis on the infant's first year of life. Research indicates that 13 percent of deaths are preventable through exclusive and early lactation [7, 8]. Inadequate breastfeeding practises and attitudes are significant contributors to the unfavourable nutritional outcomes observed in children. Therefore, it is crucial to promote excellent practises and attitudes in a timely manner, particularly in nations with a high disease burden [9].

Particularly vulnerable to growth retardation is infants aged 6 to 24 months, during which time they consume foods with a low nutrient density in lieu of breast milk. Furthermore, reversing stunting becomes a challenging task two years later [10]. Hence, in order to facilitate optimal physical development and cognitive growth, complementary foods ought to be introduced in a timely manner, maintaining appropriate nutritional value, consistency, quantity, and hygiene [11, 12]. A better understanding of the significance of proper feeding behaviour and attitude can assist the lactating mother in modifying her overall demeanour. Substandard assistance provided to the mothers may result in the untimely termination of lactation [13]. Thus, support and education regarding breastfeeding are essential for effective practises. Counsellors, physicians, nurses, or midwives may offer education, especially during the perinatal period or immediately following delivery. To encourage proper lactation,

mothers or family members should maintain the support at home. This is particularly true for families from disadvantaged socioeconomic backgrounds.

Aims and Objectives

With the aforementioned context in mind, the purpose of this study is to evaluate the level of knowledge and practise concerning infant nutrition among mothers whose children are between 0 and 12 months old.

The primary objective of this research is to evaluate the extent of mothers' understanding and application of infant nutrition principles when it comes to their infants aged 0-12 months.

Materials and Methods

Study Location and Duration

This descriptive cross-sectional study was carried out in the OutPatient Department of the Paediatrics department at MGM Medical College and Hospital, a tertiary care hospital in Kolhan division of Jharkhand. It was conducted during the time period from February 2022 to August 2023.

Sample size and calculation

There was a total of 224 mothers with infants between 0 and 12 months of age in the sample population. To determine the sample size, proxy indicators derived from NFHS 4 are employed. 72% of mothers who received lactation advice were factored into the calculation of the sample size for mothers with infants 0-12 months. The NFHS 5 data that corresponds to the current situation is unavailable. The sample size was determined through the utilisation of OpenEpi. The method of Convenience Sampling was utilised.

Inclusion and Exclusion criteria

Beneficiaries attending the Immunization OPD and mothers of children from 0-12 months of age attending the Immunization OPD were included in this study. Those mothers who do not give consent for the study were excluded.

Ethical Consideration

Approval from the institutional Ethics Committee, MGM Medical College, Jamshedpur was taken. Permission from superintendent MGM Hospital was taken before initiating the study.

Informed consent from each respondent before start of the interview was sought. It was ensured that the participants participated in the study voluntarily. The study respected the confidentiality and anonymity of the study respondent and by any means their names was be used or referred to during or after the study.

Data Collection and Analysis

Using a semi-structured interview schedule, interviews were conducted with mothers of infants younger than one year who were patients at the medical college hospital as part of the evaluation process. The interview questionnaire was distributed in the schedule to all participants who provided their consent in both English and Hindi.

Statistical analysis was carried out with the help of Microsoft Excel and Epi info 7.1.1 software. The description of the data was done in form of arithmetic mean +/- SD (or median) for quantitative data while in the form of frequencies (%) for qualitative (categorical) data. P-values of < 0.05 was considered significant. For comparison of categorical variables (i.e., to examine the associations between qualitative/quantitative variables), chi-square test was used if the number of elements in each cell were 5 or higher and Fisher's exact test, otherwise.

Results

Table 1 presents the characteristics of the baseline. A total of 224 study participants (100%) possessed the understanding that all infants should be breastfed; however, knowledge

regarding exclusive lactation was limited to 66.52%. In relation to the prompt commencement of lactation subsequent to childbirth, knowledge was reported by 50.45% of the participants (Table 2).

Table 1: Baseline Characteristics

Characteristics		Frequency	Percentage
Maternal age (years)	≤20	29	12.95%
	21-30	145	64.73%
	≥31	50	22.32%
Maternal education	Primary	22	9.82%
	Secondary	152	67.86%
	Graduate	50	22.32%
Occupation of mother	Employed	38	16.96%
	unemployed	186	83.04%
Residence	Panchayath	206	91.96%
	Municipality	18	8.04%
Sex of the child	Male	128	57.14%
	Female	96	42.86%

Table 2: Knowledge of participants regarding breastfeeding

Maternal knowledge Variable	Yes		No	
	Frequency	%	Frequency	%
Have to breastfeed	224	100	-	-
Initiation of breastfeeding in the	113	50.45%	111	49.55%

1st hour after delivery				
About exclusive breastfeeding	149	66.52%	75	33.48%
Need for night feeding	166	74.12%	58	25.89%
Advantages of breastfeeding	135	60.27%	89	39.73%
Colostrum should be given	95	42.41%	129	57.59%
Prelacteal feed should be avoided	56	25%	168	75%
Dangers of bottle feeding	80	35.71%	144	64.29%

Within an hour of delivery, a majority of the participants [133 (59.38%)] in this study commenced lactation. Four hours following childbirth, a mere 20% of the mothers [43 (19.20%)] initiated lactation. A mere 33% of the participants maintained an exclusive lactation regimen for a duration exceeding 6 months. Approximately 69.54% (156 participants) of the sample had refrained from feeding their children bovine milk, whereas 2/3rds had not utilised any form of formula feeding. Almost all of them [206 (91.96%)] fed offspring prelacteal. A mere 37 participants (16.52%) expressed the opinion that breast milk was inadequate or adequate. There was no significant association between the educational status of the mother and practice of exclusive breastfeeding (0.84; $p < 0.05$).

With 138 (61.61%) of the respondents believing in exclusive lactation for their child, this proportion exceeded half. The majority of mothers [133 (59.38%)] expressed unease with providing their children with any other form of nourishment besides breast milk. However, a considerable proportion of the respondents [129 (57.59%)] held the view that colostrum is not a crucial component of lactation. Additionally, 168 (35% of the sample) did not believe prelacteal feed ought to be avoided.

Discussion

The present study examined the knowledge, practises, and attitudes of mothers with regard to lactation. The study participants were all well-informed about lactation, with the majority possessing knowledge regarding exclusive breastfeeding. According to the National Family Health Survey, 53.3% of neonates in Kerala are breastfed exclusively [6]. Our study's findings are more substantial in comparison to those of other investigations [7-11]. However, the proportion of participants remains diminished in comparison to the research carried out in a rural region of West Bengal [12]. 73% of the respondents were aware that 59% of the infants were exclusively breastfed, according to the findings of the present study. Other studies conducted in India and abroad have documented this disparity between knowledge and practise [10]. Although exclusive lactation was implemented, in many instances it did not extend beyond six months [13, 14]. This emphasises the significance of counselling in prenatal care in order to promote improved nutrition practises for infants.

Equally essential for preparing for and maintaining exclusive lactation for more than six months are antenatal care and guidance. Research indicates that certain low-resource nations have a low prevalence of exclusive lactation at six months [15, 16]. According to research from developing nations, lactating mothers have a basic understanding of exclusive lactation [17, 18]. The majority of mothers concur that breastfeeding should continue until the child reaches two years of age. A study conducted in India revealed that mothers exhibited a negative attitude towards certain variables, such as the deficiency of iron in lactation and the heightened likelihood of overfeeding when using formula [10]. For greater penetration, promotional interventions that aim to improve lactation practises should also target these attitudes. The World Health Organisation (WHO) advises that lactation should ideally commence within thirty minutes of the baby's delivery [19]. It is well known that early initiation increases oxytocin reflexes, which consequently enhances the breast milk reflex. The prevalence of early breastfeeding initiation in India varies between 16.6% and 54.5%

[20]. Although 50.45% of the participants in the present study held the perception that early initiation within an hour of delivery was favourable, a significantly larger proportion (59.38%) in fact implemented this practise.

Delay in transferring mothers from the labour room, Caesarean section, family restrictions, and neonatal intensive care unit placement were identified as the primary causes for delayed breastfeeding initiation in an Indian study [10]. Promoting early initiation of lactation as a matter of conscience will significantly contribute to the amelioration of this behaviour among mothers. 36.61 percent of the participants in the present study initiated the use of supplemental nutrition prior to the six-month mark. This may be attributed, in part, to the perception of inadequate milk production and the notion that breast milk is insufficient for the child's development. It has been reported that inadequate milk production is the primary cause why women begin using supplementary feed [10, 21].

Efforts to promote breastfeeding practises will contribute to a shift in current attitudes and behaviours. Such interventions have been shown to increase the rate of exclusive lactation by a factor of six, according to studies [22]. The education and knowledge of the mother are regarded as a determinant of effective lactation practises [23]. Approximately 75% of the participants possessed a secondary education or higher and possessed only a minimal lack of knowledge regarding lactation. However, 93.75 percent of mothers provided prelacteal feedings for their offspring. This is extremely concerning, especially since it cannot be ascribed to illiteracy on the part of the mothers. Traditions, customs, and advice from relatives may have contributed to the high proportion of prelacteal feeding in the region. An additional study conducted in India found that illiterate lactating mothers exhibited a more favourable disposition towards lactation in comparison to their literate counterparts [10].

Comparable findings were observed in Jordan, where mothers with higher levels of education were found to have a lower propensity for breastfeeding than those with lower levels of

education or illiteracy [24]. This finding holds significance in terms of raising awareness, as it establishes a direct correlation between a positive attitude and the optimal practise of exclusive lactation among mothers [25]. This finding demonstrates the significant impact that prenatal counselling has in guiding expectant mothers towards improved breastfeeding behaviours.

Conclusion

The majority of the participants in our research exhibited a favourable disposition and comprehensive understanding of breastfeeding. Although this information is currently scarce, it should be approached with caution due to the lack of appropriate application. The current study demonstrates that the lactation behaviour exhibited by the participants in the research remains suboptimal. In addition to the mother, family members should be involved in counselling because their expertise and experience can also influence infant feeding practises. To address the concerns and misconceptions of mothers regarding infant nutrition, more full-time counsellors should be consistently present in postnatal wards and during vaccination visits in order to improve the efficacy of counselling. This can be achieved through adequate training of counselling personnel. On subsequent visits, separate mandatory counselling sessions should be offered in conjunction with immunisations to verify proper infant feeding practises and ensure that proper reinforcement is being administered.

References

1. WHO. Indicators for assessing infant and young child feeding practice part 3. WHO, Geneva; 2010.
2. Gupta A, Arora V, Bhatt B. The State of World's Breastfeeding: India Report card 2006. International Baby Food Action Network (IBFAN), Asia Pacific. India. 2006.
3. CARE. Infant and Young Child Feeding Practices: Collecting and Using Data: A Step-by- Step Guide: Cooperative for Assistance and Relief Everywhere, Inc. [CARE]; 2010.

4. Rasania SK, Singh SK, Pathi S, Bhalla S, Sachdev TR. Breast-Feeding Practices in A Maternal and Child Health Centre In Delhi. *Health PopulPerspect Issues*. 2003; 26:110–5.
5. Dadhich JP, Gupta A. Assessment of Status of Infant and Young Child Feeding (IYCF) practice, policy and program-Achievements and Gaps. *Breastfeedingpro-motion network of India*. 2005.
6. Government of India. National fact sheet India: 2015-2016 National family health survey (NFHS-3). State Fact Sheet, Kerala. New Delhi: Ministry of health and family Welfare, Govt.of India [Internet]; 2016. Available from: <http://rchiips.org/nfhs/> [cited 2023 Aug 24].
7. Chaudhary R N, Shah T, and Raja S. Knowledge and practice of mothers regarding breastfeeding: a hospital based study. *Health Renaissance*. 2011; 9(3):194-200. doi: <http://dx.doi.org/10.3126/hren.v9i3.5590>.
8. Shaili V, Parul S, Kandpal S D, Jayanti S, Anurag S, Vipul N. A community based study on breastfeeding practices in rural areas of Uttarakhand. *National Journal of Community Medicine*. 2012; 3(2): 283-287.
9. Hiremath B R, Sorganvi V. A Cross-Sectional Study On Breastfeeding Practices In A Rural Area Of North Karnataka. *IJCRR*. 2013; 5(21): 13-18.
10. Vijayalakshmi P, Susheela T, Mythili D. Knowledge, attitudes, and breastfeeding practices of postnatal mothers: A cross sectional survey. *Int J Health Sci (Qassim)*. 2015 Oct; 9(4): 364–374. PMID: PMC4682591
11. Shashank K J and Chethan TK. A study of breastfeeding practices among mothers in rural area of Mangalore district: A cross-sectional study. *National Journal of Community Medicine*. 2016;7 (2): 134-137. pISSN 0976 3325.
12. Chattopadhyay ND, Chakraborty S, Dasgupta A. Infant and young child feeding practices among mothers in a rural area of West Bengal, India. *Annals of Medical and Health Sciences Research*. 2013; 3(3): 370-375.
13. Tiwari R, Mahajan PC, Lahariya C. The determinants of exclusive breast feeding in urban slums: a community based study. *J Trop Pediatr*. 2009 Feb;55(1): 49-54. doi: 10.1093/tropej/fmn037. Epub 2008 May 22.
14. Bandyopadhyay M. Impact of ritualpollution on lactation and breastfeeding

- practices in rural West Bengal, India. *Int Breastfeed J.* 2009Mar26;4:2. doi: 10.1186/1746-4358-4-2.
15. Ulak M, Chandyo RK, Mellander L, Shrestha PS, Strand TA. Infant feeding practices in Bhaktapur, Nepal: a cross-sectional, health facility based survey. *Int Breastfeed J.* 2012 Jan 10; 7(1):1. doi: 10.1186/1746-4358-7-1.
 16. Madhu K, Chowdary S, Masthi R. Breast feeding practices and newborn care in rural areas: a descriptive cross-sectional study. *Indian J Community Med.* 2009 Jul; 34 (3): 243-6. doi: 10. 4103/ 0970-0218.55292.
 17. Oche MO, Umar AS, Ahmed H. Knowledge and practice of exclusive breastfeeding in Kware, Nigeria. *Afr Health Sci.* 2011 Sep;11(3):518-23.
 18. Ekanem IA, Ekanem AP, Asuquo A, Eyo VO. Attitude of working mothers to exclusive breastfeeding in Calabar municipality, cross river State, Nigeria. *Journal of Food Research.* 2012;1: 71–75.
 19. World Health Organization, UNICEF. Ten steps to promote successful breastfeeding. Protecting, promoting and supporting breast-feeding: The special role of maternity services. Geneva: Mother and Child Division; 1989. p. iv.
 20. Agarwal S, Srivastava K, Sethi V. Maternal and New-born Care Practices Among the Urban Poor in Indore, India: Gaps, Reasons and Possible Program Options. Urban Health Resource Center; New Delhi: 2007.
 21. Otsuka K, Dennis CL, Tatsuoka H, Jimba M. The relationship between breastfeeding self-efficacy and perceived insufficient milk among Japanese mothers. *J ObstetGynecol Neonatal Nurs.* 2008 Sep- Oct;37(5):546-55.
 22. Imdad A, Yakoob MY, Bhutta ZA. Effect of breastfeeding promotion interventions on breastfeeding rates, with special focus on developing countries. *BMC Public Health.* 2011 Apr 13;11 Suppl3:S24.
 23. Dubois L, Girard M. Social determinants of initiation, duration and exclusivity of breastfeeding at the population level: the results of the Longitudinal Study of Child Development in Quebec (ELDEQ 1998-2002). *Can J Public Health.* 2003 Jul-Aug;94(4):300-5.
 24. Khassawneh M, Khader Y, Amarin Z, Alkafajei A. Knowledge, attitude and practice of breastfeeding in the north of Jordan: a cross-sectional study. *Int Breastfeed J.* 2006 Sep 23;1:17.

25. Hurley KM, Black MM, Papas MA, Quigg AM. Variation in breastfeeding behaviours, perceptions, and experiences by race/ethnicity among a low- income statewide sample of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) participants in the United States. *Matern Child Nutr.* 2008 Apr;4(2):95-105. doi: 10.1111/j. 1740-8709.2007.00105.x.