

Frequency of Breastfeeding Practices Among Infants Presenting at Mardan Medical Complex, Mardan

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Abstract: Breastfeeding is a cornerstone of infant nutrition and plays a vital role in promoting optimal growth, development, and immunity. The World Health Organization recommends exclusive breastfeeding for the first six months of life; however, adherence to recommended breastfeeding practices remains suboptimal in many low- and middle-income countries. Understanding local breastfeeding patterns is essential for developing targeted interventions. **Objective:** To determine the frequency of breastfeeding practices among infants presenting at Mardan Medical Complex, Mardan. **Methods:** This cross-sectional study was conducted in the Department of Pediatrics at Mardan Medical Complex from 29 June 2024 to 29 December 2024 and included 227 infants aged 1–8 months of either gender presenting to the pediatric outpatient department. Preterm infants and those with congenital heart or chronic lung diseases were excluded. All participants were assessed for breastfeeding practices, including exclusive breastfeeding, predominant breastfeeding, and partial breastfeeding, under the supervision of a consultant pediatrician. Data were collected using a pre-designed structured proforma and analyzed using IBM SPSS version 25. Frequencies and percentages were calculated, and associations between breastfeeding practices and demographic variables were assessed using appropriate statistical tests; p -values <0.05 were considered statistically significant. **Results:** The mean age of the infants was 4.37 ± 2.33 months, and the mean weight was 6.35 ± 1.17 kg. There were 124 (54.6%) male and 103 (45.4%) female infants. Exclusive breastfeeding was practiced by 58 (25.6%) mothers, predominant breastfeeding by 69 (30.4%), and partial breastfeeding by 100 (44.1%). Maternal employment status was associated with breastfeeding practices ($p = 0.005$), with employed mothers demonstrating lower rates of exclusive breastfeeding. **Conclusion:** Partial breastfeeding was the most common feeding practice among infants, followed by predominant breastfeeding, while exclusive breastfeeding was the least common. Maternal employment was significantly associated with reduced exclusive breastfeeding rates. Targeted breastfeeding counseling and workplace support initiatives are needed to improve exclusive breastfeeding practices and promote optimal infant nutrition.

Keywords: Breastfeeding Practices, Exclusive Breastfeeding, Predominant Breastfeeding, Partial Breastfeeding, Maternal Employment

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Introduction

Malnutrition is a medical condition caused by consuming food that lacks the appropriate number of calories, carbohydrates, vitamins, proteins, or minerals. Malnutrition is a condition characterized by an imbalance in nutrient intake, leading to either a deficit or an excess (1). Ensuring that every child has enough access to food may be the joint responsibility of parents and the child to ascertain the fulfillment of this right. Malnutrition frequently deprives children of their aspirations and jeopardizes their future (2). Malnutrition in children under the age of 5 years can lead to several adverse outcomes such as being underweight, experiencing stunted growth, suffering from wasting (with or without oedema), and in severe cases, death (3). According to a study, 51.4% were male, with a mean age of 29.7 months and a standard deviation of 4.5. A total of 40.2% had normal nutritional status. The frequencies of wasting, underweight, and stunting were 3.2%, 14.4%, and 42.2%, respectively (3). Breastfeeding, at its most genuine, represents the close connection between a mother and an infant, a sacred practice filled with deep physical, emotional, and psychological meaning. Breast milk is a remarkable substance specifically designed to provide the nutrients, antibodies, and immunological factors a growing newborn needs (4). The advantages of exclusive nursing and appropriate weaning in promoting the growth, development, and prevention of sickness in young children are unquestionable. The frequency, timing, and duration of breastfeeding, together with the frequency, kind, and quantity of complementary feeding, have been essential components of baby feeding practice (5, 6). The study showed that implementing improved breastfeeding techniques had a substantial effect on the survival rates of newborns in a region of southern Nepal with limited resources (6).

Nevertheless, despite the unquestionable benefits it offers, the rates of breastfeeding remain unacceptably low globally, hindered by a range of obstacles, including cultural stigmas, employment limitations, and aggressive promotional strategies by formula milk producers (7). Within numerous societies, deeply ingrained ideas and misunderstandings regarding breastfeeding continue to sustain detrimental behaviors, marginalizing it as a mere tradition rather than recognizing it as a fundamental aspect of contemporary healthcare (8, 9). According to a study, among the included infants, 23.2% were exclusively breastfed, 28.2% were predominantly breastfed, and 48.6% were partially breastfed (10).

The results of this study will help our medical professionals highlight the importance of breastfeeding, which not only meets infants' nutritional needs but also establishes a profound bond between mother and child, fostering emotional security and promoting healthy psychological development. Therefore, prioritizing breastfeeding initiatives and fostering an enabling environment that supports nursing mothers is imperative for safeguarding the health and future prosperity of future generations.

Methodology

This cross-sectional study was conducted in the Pediatrics department of Mardan Medical Complex, Mardan, from 29 June 2024 to 29 December 2024, on 227 infants, with ethical approval from the hospital. The sample size calculation was performed using the WHO sample size calculator, with a previous proportion of exclusive breastfeeding practice of 23.2% (10), a 95% confidence interval, and a margin of error of 5.5%. Infants were selected using non-probability consecutive sampling.



For this study, exclusive breastfeeding was labelled as the practice of providing an infant with only breast milk, without the addition of any other liquids or solids, except for medications or vitamin supplements as medically indicated. Predominantly breastfeeding was labelled as the practice of primarily providing an infant with breast milk, while occasionally supplementing with other liquids or solids, such as water, juice, or formula, in small quantities. Partially breastfeeding was defined as feeding an infant a combination of breast milk and other liquids or solids, such as formula, water, or juice.

Infants aged 1 to 8 months, of both genders, presenting to the Pediatrics OPD, were included in the study. Infants who were preterm and those who presented with heart or lung conditions were excluded. Informed written consent forms were obtained from the mothers/attendants of the infants after briefing them about the objective and benefits of this research work. Mothers/attendants were assured that there is no risk involved while taking part in this study. Baseline demographics, such as infant age, weight, infant gender, mother's employment status, socioeconomic status, and residence, were noted. All included infants were evaluated for breastfeeding practices (exclusively, predominantly, or partially breastfeeding) as described above. This complete assessment was performed under the supervision of a consultant with at least 5 years of post-fellowship experience. A pre-designed structured proforma was used to record the details of each patient.

Data was analyzed by using IBM SPSS 25. Mean ± SD was determined for numerical data such as age and weight. Frequencies and percentages were calculated for categorical variables, including infant gender, breastfeeding practices (exclusively breastfeeding, predominantly breastfeeding, and partially breastfeeding), mother's employment status, socioeconomic status, and residence. Breastfeeding practices were stratified by age, infant gender, infant weight, mother's employment status, socioeconomic status, and residence to address potential effect modifiers. Post-stratification, Chi-square or Fisher's exact test was performed, with p-values < 0.05 considered significant.

Table 3: Stratification of breastfeeding practices with demographics

Variables		Breastfeeding practices						p value
		Exclusively breastfeeding		Predominantly breastfeeding		Partially breastfeeding		
		n	%	n	%	n	%	
Age distribution (Years)	1 to 5	37	63.8%	42	60.9%	72	72.0%	0.282
	6 to 8	21	36.2%	27	39.1%	28	28.0%	
Weight (kg)	4.1 to 6.5	33	56.9%	31	44.9%	56	56.0%	0.284
	> 6.5	25	43.1%	38	55.1%	44	44.0%	
Gender	Male	32	55.2%	36	52.2%	56	56.0%	0.882
	Female	26	44.8%	33	47.8%	44	44.0%	
Socioeconomic status	Lower Class	26	44.8%	34	49.3%	39	39.0%	0.427
	Middle Class	21	36.2%	28	40.6%	41	41.0%	
	Upper Class	11	19.0%	7	10.1%	20	20.0%	
Residence	Urban	27	46.6%	33	47.8%	47	47.0%	0.989
	Rural	31	53.4%	36	52.2%	53	53.0%	
Mother's employment status	Employed	10	17.2%	26	37.7%	42	42.0%	0.005
	Unemployed	48	82.8%	43	62.3%	58	58.0%	

Discussion

The present study examined the frequency of breastfeeding among infants aged 1 to 8 months. The findings showed that exclusive breastfeeding was practiced by only 58 (25.6%) mothers. Breastfeeding was predominant among 69 (30.4%) mothers. Partial breastfeeding was the most common method practiced by 100 (44.1%) mothers. These figures show that partial breastfeeding remains the leading practice in this population. When the findings of the present study are compared with other studies from Pakistan, it was observed that Tahir et al. reported an exclusive

Results

The mean age of 227 infants in this study was 4.37±2.33 months. Their mean weight was 6.35±1.17 kilograms. Regarding the gender distribution, 124 (54.6%) were male, and 103 (45.4%) were female. Regarding socioeconomic status, 99 (43.6%) belonged to the lower socioeconomic class, 90 (39.6%) to the middle class, and 38 (16.7%) to the upper class. There were 120 (52.9%) patients from rural areas and 107 (47.1%) from urban areas. Most mothers were unemployed, 149 (65.6%) (Table I).

Regarding feeding methods, the most common practice was partial breastfeeding (100, 44.1%). Predominant breastfeeding was observed in 69 (30.4%) cases, while exclusive breastfeeding was practiced by 58 (25.6%) mothers (Table II). Table III presents the stratification of breastfeeding practices with demographics. A significant association between feeding practices and mother's employment status was observed (p = 0.042).

Table 1: Demographics of the patients

Demographics		n	%
Gender	Male	124	54.6%
	Female	103	45.4%
Socioeconomic status	Lower Class	99	43.6%
	Middle Class	90	39.6%
	Upper Class	38	16.7%
Residence	Urban	107	47.1%
	Rural	120	52.9%
Mother's employment status	Employed	78	34.4%
	Unemployed	149	65.6%

Table 2: Breastfeeding practices

Breastfeeding practices	n	%
Exclusively breastfeeding	58	25.6%
Predominantly breastfeeding	69	30.4%
Partially breastfeeding	100	44.1%

breastfeeding rate of 32.86% among infants up to one year of age in their study in Faisalabad. That study also noted that weakness and backache were common reasons for stopping breastfeeding early (11). In another Pakistani study from Rawalakot, conducted by Iqbal et al., a much higher exclusive breastfeeding rate of 63.7% was found (12). The wide variation suggests that local cultural norms, healthcare access and maternal education levels differ greatly across regions.

The present rate of 25.6% exclusive breastfeeding is closer to that reported by Dharel et al., who reported 23.2% exclusive breastfeeding among infants under six months. That study also found that firstborn

infants and those with low birth weight were more likely to practice partial breastfeeding (10).

Nazir et al. studied infants presenting with acute diarrhoea. They found that only 18.4% were exclusively breastfed. Partial breastfeeding was present in 56% of their cases, which aligns closely with the 44.1% partial breastfeeding rate observed in the present study (13). The higher partial breastfeeding rates in both studies point towards a common issue. Many mothers introduce other feeds, such as formula, honey, or ghutti, in the early months, believing it to be beneficial or necessary, which may lead to several adverse conditions. The only factor that showed a statistically significant association with breastfeeding practices in this study was the mother's employment status ($p = 0.005$). Among exclusively breastfed infants, 17.2% had employed mothers. This finding suggests that working status is generally considered a barrier to exclusive breastfeeding. In a study in Peshawar, Nazir et al. reported that exclusive breastfeeding was only 7.7% among working mothers (13).

The high rate of partial breastfeeding observed in this study carries clinical importance. Infants who receive complementary feeds alongside breast milk are at greater risk of diarrheal diseases. Nazir et al. clearly showed that non-breastfed and partially breastfed infants had higher rates of acute diarrhea compared to exclusively breastfed ones. Partial breastfeeding reduces the protective effect that breast milk offers against infections. It also increases the chances of contamination when water or other liquids are introduced (13).

From a clinical standpoint, healthcare providers working in outpatient departments should screen every mother with her infant for feeding practices during routine visits. Simple questions about what the infant has eaten in the past 24 hours can identify those who are partially breastfeeding. These mothers should receive targeted counselling. The window between 1 and 6 months of age is highly critical for infant feeding practices.

Conclusion

From the current study, it is concluded that the most common breastfeeding practice was partial breastfeeding (44.1%), followed by predominantly breastfeeding (30.4%), and the least common was exclusively breastfeeding (25.6%). Employed mothers were significantly associated with a lower frequency of exclusive breastfeeding.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-??)

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

MS, MQK (PGR)

Contributed to study design, data collection and initial manuscript drafting, assisted in data acquisition, literature review and manuscript editing,

UR, KP, WA (PGR)

Contributed to patient recruitment, data entry and results compilation Assisted in referencing, proofreading, and approving the final version

All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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