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ORIGINAL ARTICLE

Prevalence of exclusive breast breeding in postnatal ward at central park teaching hospital.

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ABSTRACT… Objective: To determine the prevalence of exclusive breastfeeding (EBF) and associated factors influencing its practice among postnatal mothers at Central Park Teaching Hospital, Lahore. **Study Design:** Cross-sectional study. **Setting:** Conducted in the Postnatal Wards of Central Park Teaching Hospital, Lahore. **Period:** September 2023 to February 2023. **Methods:** Enrolled 150 mothers using a non-probability consecutive sampling technique. Structured face-to-face interviews using a pretested questionnaire collected socio-demographic, obstetric, and breastfeeding data. EBF was defined per WHO guidelines. Descriptive and inferential statistical analyses were performed. **Results:** The prevalence of EBF was 50.7%. No significant associations were observed between EBF and maternal age ($p = 0.511$), parity ($p = 0.516$), infant gender ($p = 0.982$), mode of delivery ($p = 0.645$), education level ($p = 0.167$), postnatal counseling ($p = 0.071$), breastfeeding initiation ($p = 0.073$), or maternal employment ($p = 0.979$). Trends suggested higher EBF rates among educated mothers, those receiving postnatal counseling, and those delaying breastfeeding initiations though statistical significance was not reached. **Conclusion:** Enhanced breastfeeding education and hospital-based interventions are needed. Although no significant predictors were identified, trends highlight potential influencing factors requiring further investigation. Future research should explore longitudinal and qualitative assessments to better understand maternal perceptions and barriers to EBF in Pakistan.

Keywords: Breastfeeding Barriers, Exclusive Breastfeeding, Infant Health, Maternal Education, Postnatal.

INTRODUCTION

Exclusive breastfeeding (EBF) during the first six months of life is a critical public health practice recommended by the World Health Organization (WHO) for promoting optimal health and development in infants.[1-2] Breastfeeding provides essential nutrients, antibodies, and bioactive components that protect against infections and foster cognitive and physical growth. Worldwide, EBF practices remain suboptimal, despite its known benefits, particularly in developing nations like Pakistan, where socio-economic, cultural, and systemic barriers persist.[3-4]

Globally, the prevalence of EBF is steadily increasing, with reported rates around 48% as in 2023. However, South Asian countries, including ours, meeting global EBF targets are struggling.[5] Only 37.7% of Pakistani mothers practice EBF according to recent data. This low rate has significant effect for infants health, contributing to preventable illnesses like respiratory infections, diarrhea, and malnutrition—the leading causes of infant mortality in the region. In 2018, according to The National Nutrition Survey of Pakistan capitalized that although awareness and initial breastfeeding rates are improving, however, sustained EBF for 6 months remains a challenge.[6]

EBF in our country is recorded with low rate due to various contributing factors. The data indicate that socio-economic status, maternal education, delivery mode and lack of postnatal guidance play crucial roles in shaping breastfeeding practices.[7] Women with lower socio-economic backgrounds often resort to breastfeeding out of necessity, contrary to higher-income groups, who rely more on formula feeding due to its convenience. Similarly, cesarean deliveries have been associated with delayed commencement

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of breastfeeding and reduced compliance with exclusive breastfeeding due to physical discomfort and the absence of immediate maternal-infant bonding. Furthermore, the unavailability of institutional support and follow-up from the health care personnel in postnatal wards exacerbates these challenges.[8]

Maternal employment is the main barrier to EBF in the urban setting. Increasing female labor force participation has increased the pressure for effective work-place policies for breastfeeding mothers. Lack of good lactation room facilities, minimal maternity leave periods, and the social pressure at the workplace keep the working mother away from practicing EBF for an extended period.[9] On the contrary, non-lactating mothers often express perceived in-sufficient milk and exhaustion along with a lack of encouragement from family members as challenges to prolonged EBF.[10]

Tackling these gaps requires targeted interventions that address the various obstacles for EBF, especially within healthcare institutions. Hospitals play an important role in shaping the health behaviors of both mothers and infants because they represent the primary contact point for postnatal care and guidance. Research targeting the prevalence and determinants of factors influencing EBF in postnatal wards shall help to guide interventions at protocols and in healthcare delivery models.[11]

This study aims to explore the prevalence of exclusive breastfeeding among mothers in the postpartum at Central Park Teaching Hospital. It identifies key factors and barriers and seeks to provide evidence-based recommendations for improving EBF rates, in line with global health goals, to ensure better maternal and neonatal outcomes in Pakistan.

METHODS

This study was a cross-sectional study conducted to assess the prevalence of exclusive breastfeeding (EBF) and identify the factors impacting its practice among postnatal mothers. The study was conducted in the postnatal wards of Central Park Teaching Hospital, Lahore, over a period of six months (September 2023 to February 2023) after approval from the ethical review committee (CPMC/IRB-No./1407-7/9/23) and the College of Physicians and Surgeons Pakistan (CPSP).

The sample size was calculated using the WHO sample size calculator, considering an expected prevalence of EBF at 48%, a 95% confidence level, and an absolute precision of 8%. Based on these parameters, a total of 150 mothers were enrolled in the study using a non-probability consecutive sampling technique.

Subjects were recruited based on predetermined inclusion and exclusion criteria. This study enrolled mothers between the ages of 18 and 40 who gave birth to a healthy, singleton infant and were ready to give informed consent. On the other hand, excluded participants were if they had conditions that would hinder participation, such as being an active TB patient or HIV positive, having an infant with certain birth defects that would make breastfeeding impossible, or simply being a non-consenter.

For the purpose of data collection, face-to-face interviews were conducted with mothers at the postnatal ward. Research assistants approached potential participants, secured informed consent, and commenced collection of data. Information pertaining to the mothers' socio-demographics, obstetric history, and exclusive breastfeeding practices, as per WHO definition of exclusive breastfeeding, were also included in the study. Further, data were gathered to identify barriers to exclusive breastfeeding: maternal, socio-economical, and other health care related obstructions to breastfeeding. All interviews were undertaken in an environment that was non-threatening and made the participants feel safe and had their confidentiality respected. Each participant was interviewed for 15 to 20 minutes on their journey within the healthcare system. Research assistants were trained before the study in order to reduce use of different interviewing techniques, which may lead to bias based on the interviewer's actions.

All the collected information was analyzed and stored securely in password-protected databases to maintain data integrity and confidentiality. The study was monitored regularly by the research supervisor to ensure adherence to the study protocol and maintain data quality. By using a systematic and respectful approach, the study aimed to produce reliable and actionable findings that could contribute to enhancing exclusive breastfeeding practices within the healthcare setting.

RESULTS

The study included 150 participants, with maternal ages ranging from 18 to 40 years. The distribution showed that 51.3% of the mothers were aged between 18–30 years, while 48.7% were aged between 31–40 years. Regarding infant age, an equal proportion of 50% were newborns (0 months) and 1-month-old infants. In terms of gender distribution, male infants were slightly more prevalent (56.7%) compared to female infants (43.3%).

Parity status was nearly balanced, with 51.3% of mothers being primiparous, while 48.7% were multiparous. The mode of delivery showed that 34.0% of mothers underwent an elective cesarean section, 31.3% had an emergency cesarean section, and 34.7% delivered vaginally. Education levels varied, with 32.0% of mothers having no formal education, 32.0% having primary education, and 36.0% attaining secondary or higher education. Socio-economic status was also diverse, with 33.3% belonging to the lower class, 35.3% to the middle class, and 31.3% to the upper class. Exclusive breastfeeding was practiced by 50.7% of mothers, while 49.3% did not exclusively breastfeed their infants.

The analysis explored various socio-economic, demographic, and clinical factors associated with exclusive breastfeeding practices. Maternal age was not significantly associated with exclusive breastfeeding ($p = 0.511$), as both age groups exhibited similar rates. Parity also showed no significant influence ($p = 0.516$), with nearly equal proportions of primiparous (53.9%) and multiparous (46.1%) mothers practicing exclusive breastfeeding. Gender of the infant did not affect breastfeeding exclusivity ($p = 0.982$), as males (56.6%) and females (43.4%) had nearly equal rates. The mode of delivery also lacked statistical significance ($p = 0.645$), with exclusive breastfeeding rates being 32.9% among elective cesarean births, 28.9% among emergency cesarean births, and 38.2% among vaginal deliveries.

Education level, while not statistically significant ($p = 0.167$), showed a trend where mothers with secondary or higher education (40.8%) were more likely to practice exclusive breastfeeding compared to those with no education (25.0%). Postnatal counseling appeared to have an impact, as 55.3% of mothers who received counseling exclusively breastfed, but this was not statistically significant ($p = 0.071$). Initiation of breastfeeding within the first hour was associated with lower exclusive breastfeeding rates (36.8%) compared to those who delayed initiation (63.2%), though the difference was not statistically significant ($p = 0.073$). Employment status of the mother had no significant impact ($p = 0.979$), with nearly equal proportions among working and non-working mothers. Several perceived barriers to breastfeeding were also analyzed. Lack of knowledge and support ($p = 0.744$), perceived insufficient milk ($p = 0.612$), maternal work constraints ($p = 0.504$), and family societal pressure ($p = 0.733$) did not significantly influence exclusive breastfeeding rates. Similarly, maternal illness ($p = 0.325$) and breast conditions ($p = 0.424$) did not significantly alter the likelihood of exclusive breastfeeding. Infant health conditions showed a marginal association, with 53.9% of mothers exclusively breastfeeding when their infant had a condition, compared to 39.2% among those without infant conditions ($p = 0.070$). Economic factors were also not significantly associated ($p = 0.183$), though mothers experiencing economic challenges tended to have a lower exclusive breastfeeding rate (50.0%) compared to those without financial constraints (60.8%).

Overall, the study found no statistically significant associations between exclusive breastfeeding

and most demographic, socio-economic, and clinical factors, although certain trends suggested potential influences that may warrant further investigation.

Variable		Count	Percent
Maternal Age	18-30	77	51.3%
	31-40	73	48.7%
Infant Age (Months)	0	75	50.0%
	1	75	50.0%
Gender	Male	85	56.7%
	Female	65	43.3%
Parity	Primi Para	77	51.3%
	Multipara	73	48.7%
Mode of Delivery	Elective C-Section	51	34.0%
	Emergency C-Section	47	31.3%
	Vaginal	52	34.7%
Education Level	No Education	48	32.0%
	Primary Education	48	32.0%
	Secondary or Higher	54	36.0%
Socio-Economic Status	Low Class	50	33.3%
	Middle Class	53	35.3%
	Upper Class	47	31.3%
Exclusive Breast feeding	Yes	76	50.7%
	No	74	49.3%

Table-I. Demographical information of the participants (n=150)

DISCUSSION

The findings of this study align with global and regional trends concerning exclusive breastfeeding (EBF) practices. The prevalence of EBF in our study population (50.7%) is slightly higher than the reported national average of 37.7% in Pakistan, as noted in the National Nutrition Survey of Pakistan 2018.[6] However, it remains lower than the global prevalence of approximately 48% in 2023. These figures highlight persistent barriers to achieving optimal EBF rates in Pakistan, despite growing awareness and efforts to promote breastfeeding practices.

Our study supports findings from previous research that indicate maternal education and postnatal counseling are influential factors in promoting EBF. Muda et al[12] in Malaysia found that prior EBF experience and knowledge were significant predictors of breastfeeding initiation, which aligns with our findings showing a trend toward higher EBF rates among mothers with secondary or higher education. Similarly, Singh et al[13] in Nepal identified community-level factors such as maternal employment status and access to antenatal care as contributors to EBF adherence, reinforcing the importance of structured healthcare interventions.

Additionally, our study's findings on postnatal counseling resonate with the results of Muda et al[12] which emphasize the need for educational support in postnatal wards to enhance EBF adherence. While our study did not establish statistical significance, the observed trend highlights the potential benefits of increasing breastfeeding awareness and structured postnatal guidance.

In contrast to studies such as De Mare et al[14] which linked cesarean sections (CS) with lower EBF rates due to delayed initiation and physical discomfort, our study found no significant association between delivery mode and breastfeeding exclusivity. This discrepancy may be attributed to improved hospital-based breastfeeding support that mitigates the negative effects of CS on early breastfeeding initiation in our setting.

Moreover, our results differ from Silva et al[15] who found that socio-economic barriers and COVID-19 disruptions played a significant role in early weaning. Our study did not find economic constraints to be a statistically significant determinant of EBF, though a trend toward lower EBF rates among economically challenged mothers was observed. This may be due to the different healthcare and economic structures between Pakistan and other studied populations.

Another notable divergence is our finding that early initiation of breastfeeding within the first hour did not significantly impact EBF prevalence.

Variable	Category	Exclusive Breast Feeding		Total	P-Value
		Yes	No		
Maternal Age	18-30	37 (48.7%)	40 (54.1%)	77 (51.3%)	0.511
	31-40	39 (51.3%)	34 (45.9%)	73 (48.7%)	
Parity	Primi Para	41 (53.9%)	36 (48.6%)	77 (51.3%)	0.516
	Multipara	35 (46.1%)	38 (51.4%)	73 (48.7%)	
Gender	Male	43 (56.6%)	42 (56.8%)	85 (56.7%)	0.982
	Female	33 (43.4%)	32 (43.2%)	65 (43.3%)	
Mode of Delivery	Elective C-Section	25 (32.9%)	26 (35.1%)	51 (34.0%)	0.645
	Emergency C-Section	22 (28.9%)	25 (33.8%)	47 (31.3%)	
	Vaginal	29 (38.2%)	23 (31.1%)	52 (34.7%)	
Education Level	No Education	19 (25.0%)	29 (39.2%)	48 (32.0%)	0.167
	Primary Education	26 (34.2%)	22 (29.7%)	48 (32.0%)	
	Secondary or Higher	31 (40.8%)	23 (31.1%)	54 (36.0%)	
Postnatal Counseling	Yes	42 (55.3%)	30 (40.5%)	72 (48.0%)	0.071
	No	34 (44.7%)	44 (59.5%)	78 (52.0%)	
Initiation First Hour	Yes	28 (36.8%)	38 (51.4%)	66 (44.0%)	0.073
	No	48 (63.2%)	36 (48.6%)	84 (56.0%)	
Working Mother	Yes	32 (42.1%)	31 (41.9%)	63 (42.0%)	0.979
	No	44 (57.9%)	43 (58.1%)	87 (58.0%)	
Lack Knowledge Support	Yes	37 (48.7%)	38 (51.4%)	75 (50.0%)	0.744
	No	39 (51.3%)	36 (48.6%)	75 (50.0%)	
Perceived Insufficient Milk	Yes	36 (47.4%)	32 (43.2%)	68 (45.3%)	0.612
	No	40 (52.6%)	42 (56.8%)	82 (54.7%)	
Maternal Work Constraints	Yes	37 (48.7%)	32 (43.2%)	69 (46.0%)	0.504
	No	39 (51.3%)	42 (56.8%)	81 (54.0%)	
Family Societal Pressure	Yes	36 (47.4%)	33 (44.6%)	69 (46.0%)	0.733
	No	40 (52.6%)	41 (55.4%)	81 (54.0%)	
Maternal Illness	Yes	40 (52.6%)	33 (44.6%)	73 (48.7%)	0.325
	No	36 (47.4%)	41 (55.4%)	77 (51.3%)	
Breast Conditions	Yes	48 (63.2%)	42 (56.8%)	90 (60.0%)	0.424
	No	28 (36.8%)	32 (43.2%)	60 (40.0%)	
Infant Conditions	Yes	41 (53.9%)	29 (39.2%)	70 (46.7%)	0.070
	No	35 (46.1%)	45 (60.8%)	80 (53.3%)	
Economic Factors	Yes	38 (50.0%)	45 (60.8%)	83 (55.3%)	0.183
	No	38 (50.0%)	29 (39.2%)	67 (44.7%)	

Table-II. Factors influencing exclusive breastfeeding practices, including socio-economic, demographic, and clinical variables

WHO guidelines and multiple studies, including Singh et al[13] emphasize early initiation as a strong predictor of sustained EBF. The lack of a significant association in our study may be influenced by variations in hospital practices or recall bias among participants.

One of the strengths of this study is its hospital-based data collection, ensuring a well-defined and monitored environment for assessing EBF prevalence. The use of structured interviews and standardized questionnaires allowed for comprehensive data collection with minimal

reporting bias. Additionally, the study included a diverse group of mothers from different socio-economic backgrounds, providing insights into the broad factors influencing breastfeeding practices.

However, certain limitations must be acknowledged. The cross-sectional nature of the study restricts our ability to establish causality between the examined factors and EBF prevalence. Additionally, self-reported data on breastfeeding practices may be subject to recall bias, potentially affecting the accuracy of responses. Another limitation is the relatively small sample size, which may have reduced the power to detect statistically significant associations between certain variables and EBF. Finally, the study was conducted in a single healthcare setting, which may limit the generalizability of the findings to broader populations.

The findings of this study highlight the need for continued efforts to improve breastfeeding support at both hospital and community levels. Future interventions should focus on enhancing postnatal counseling and structured breastfeeding education, particularly targeting first-time mothers and those with lower educational backgrounds. Policy-level changes, such as the implementation of workplace breastfeeding support programs and extended maternity leave, could also contribute to higher EBF rates.

Further research should explore longitudinal studies to assess the long-term impact of breastfeeding support interventions. Additionally, qualitative studies are recommended to gain deeper insights into maternal perceptions, barriers, and facilitators of EBF. A multi-center approach could also enhance the generalizability of findings and provide a more comprehensive understanding of regional differences in breastfeeding practices.

CONCLUSION

While our study did not identify statistically significant predictors of EBF, certain trends suggest potential influences that warrant further investigation. The findings underscore the need for enhanced breastfeeding education, hospital-based interventions, and community support to promote optimal EBF practices. Future research should focus on longitudinal assessments and qualitative methodologies to better understand the underlying factors shaping EBF decisions in Pakistan.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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1	**Esha Abdul Ghafoor:** Data collection, analysis, paper writing.
2	**Tehmina Zafar:** Data collection, paper writing.
3	**Sanya Muqadas:** Discussion writing, review of manuscript.
4	**Amnah Zubair:** Data entry, review of manuscript.
5	**Fatima Arshad Majeed:** Data analysis, manuscript writing.
6	**Tayyaba Majeed:** Review of manuscript.