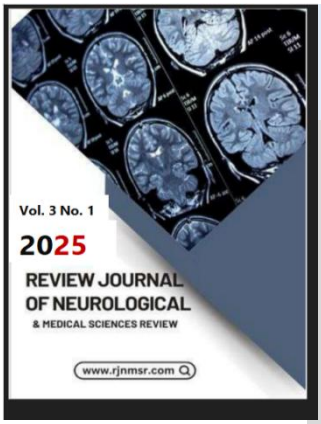

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Breastfeeding Practices in Children upto Six Months of Age Attending Pediatrics Outpatient Department

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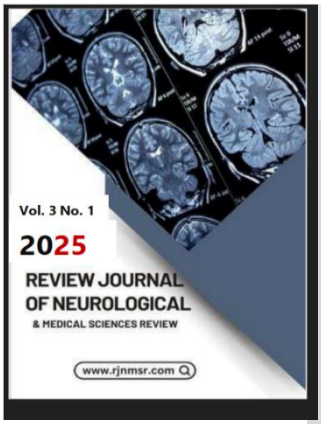
Abstract

Objective: To estimate the frequency of breastfeeding practices in children up to six months of age attending the Pediatrics Outpatient Department of Saidu Group of Teaching Hospital, Swat. **Study Design:** Cross-sectional study. **Place and Duration of Study:** Department of Pediatrics, Saidu Group of Teaching Hospital, Swat; duration of six months after synopsis approval. **Methodology:** A total of 116 children aged 1–6 months, along with their mothers, were included using non-probability consecutive sampling. Inclusion criteria were children aged 1–6 months and mothers aged 18–35 years. Children with congenital heart disease, lung malformations, or whose parents refused consent were excluded. Data were collected through structured proformas, documenting sociodemographic characteristics and breastfeeding practices categorized as exclusive, partial, or predominant. Data analysis was conducted using SPSS version 25. Frequencies and percentages were calculated for categorical variables, while means ± SD were calculated for continuous variables. Post-stratification chi-square test was applied with a p-value <0.05 considered significant. **Results:** Among 116 children, the mean age was 3.2 ± 1.4 months, and the mean maternal age was 26.7 ± 4.5 years. Exclusive breastfeeding was reported in 23.2% of infants, partial breastfeeding in 48.6%, and predominant breastfeeding in 8.2%. The remaining 20% relied primarily on formula feeding. Significant associations were found between breastfeeding practices and maternal employment status (p=0.03) as well as place of residence (p=0.04). No significant association was observed with maternal age or birth weight. **Conclusion:** Exclusive breastfeeding practices remain suboptimal in the study population, with a majority relying on partial or mixed feeding. Interventions targeting maternal education, awareness campaigns, and policy support are essential to improve exclusive breastfeeding rates in resource-limited settings.

Keywords: Breastfeeding practices, exclusive breastfeeding, partial breastfeeding, pediatrics, infant nutrition.

Introduction

Optimal infant feeding is a cornerstone of child survival, growth, and development, and breastfeeding remains the single most effective early-life intervention to reduce infectious morbidity and mortality and to promote healthy neurocognitive outcomes



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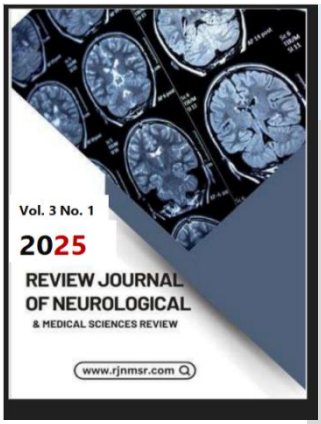
across populations [1,2]. The World Health Organization (WHO) recommends initiation of breastfeeding within the first hour of birth, exclusive breastfeeding (EBF) for the first six months of life, and continued breastfeeding alongside safe, appropriate complementary foods up to two years of age or beyond [1]. These recommendations are grounded in robust evidence showing that breast milk provides complete nutrition and bioactive immune protections that lower the risk of diarrhoea, respiratory infections, otitis media, and sudden infant death syndrome in infancy while supporting optimal brain development; for mothers, breastfeeding is associated with lower risks of breast and ovarian cancers and type 2 diabetes, among other health benefits [2]. Despite the compelling evidence base, global progress remains uneven, and commercial, social, and health-system barriers continue to undermine optimal breastfeeding practices [2].

Pakistan exemplifies this mixed progress. According to nationally representative data, fewer than half of infants under six months are exclusively breastfed, and early initiation within one hour of birth remains suboptimal, reflecting persistent gaps in peripartum support, cultural practices, and service delivery [3,4]. Using the Pakistan Demographic and Health Survey (PDHS) 2017–18 benchmark, roughly 48% of infants under six months receive EBF, highlighting a substantial opportunity for improvement relative to WHO targets [3]. In addition, early initiation remains far from universal; programmatic summaries point to continued delays in putting newborns to the breast within the first hour, a missed window that is strongly associated with increased neonatal mortality and diminished breastfeeding success [4]. Beyond initiation and exclusivity, customary prelacteal feeds—such as honey, ghutti or herbal preparations—remain common in many communities, increasing infection risks and displacing colostrum, especially where health-care counseling is limited or births occur outside Baby-Friendly standards [5,6]. The commercial determinants of infant and young child feeding—particularly the aggressive marketing of breast-milk substitutes—compound these challenges by shaping norms, intentions, and household purchasing in ways that erode confidence in breastfeeding and crowd out professional guidance [2].

Within Khyber Pakhtunkhwa (KP), and especially in districts such as Swat, geographic access, sociocultural norms, and variable health-system capacity add locally specific barriers. Facility-based studies from KP have documented suboptimal timely initiation and short durations of exclusive breastfeeding, with mode of delivery (e.g., caesarean section), lack of immediate skin-to-skin contact, inadequate postnatal counseling, and family influence emerging as recurrent determinants [7]. In Charsadda district, for example, analyses of infants 0–6 months underscored that counselling and early skin-to-skin care were strongly associated with timely initiation, whereas prelacteal feeding and limited maternal autonomy undermined recommended practices [7]. These findings are echoed in national and regional literature showing that maternal education, prior breastfeeding experience, antenatal counselling, place of delivery, and household decision-making patterns all shape infant feeding trajectories [3–7]. In outpatient settings, clinicians frequently encounter infants with feeding-related morbidities (e.g., faltering weight,



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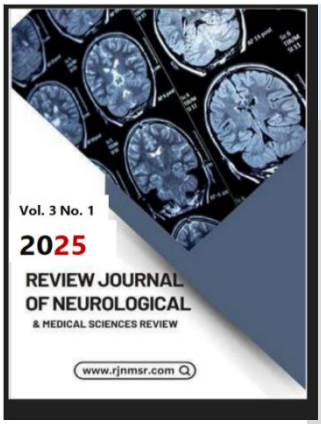
dehydration from diarrhoea, and recurrent respiratory infections) that are intimately linked to suboptimal breastfeeding and early introduction of unsafe alternatives [1–3,6].

The Saidu Group of Teaching Hospital (SGTH) in Swat provides a strategically important context for studying breastfeeding practices among infants attending paediatric outpatient services. First, paediatric OPD visits concentrate a large number of infants under six months, offering a timely window to assess real-world feeding patterns and to detect deviations from recommended practices. Second, OPD consultations present a pragmatic opportunity for targeted counselling and referral to lactation support where needed—an approach aligned with WHO/UNICEF Baby-Friendly Hospital Initiative principles and national Infant and Young Child Feeding (IYCF) policies. Third, as a tertiary-care teaching facility serving a diverse catchment area, SGTH can generate evidence with direct implications for clinical training, community outreach, and district-level program design in KP.

This study is justified on several grounds. Public health justification lies in the preventable burden of infant morbidity and mortality attributable to suboptimal feeding in Pakistan, where improving EBF and early initiation can yield immediate gains in infection prevention and survival [1–4]. Clinical justification reflects the daily reality of paediatric services, where inappropriate supplementation, delayed initiation, and prelacteal practices manifest as common, costly presentations that strain resources and compromise outcomes [1,6]. Programmatic justification stems from the need for granular, facility-linked data to tailor counselling, strengthen postnatal follow-up, and inform local quality-improvement initiatives, including integrating lactation support into routine paediatric and maternity workflows. Finally, policy relevance is high: current national and provincial nutrition strategies emphasize protecting, promoting and supporting breastfeeding, but require locally grounded evidence to prioritize interventions, monitor progress, and counter commercial and cultural pressures that displace breastfeeding [2–4].

The local context of Swat and broader KP further underscores the rationale. Household traditions around prelacteal feeds and the early introduction of animal or formula milk persist in many communities, particularly where elders strongly influence infant-feeding decisions and where marketing messages amplify doubts about milk sufficiency [2,5,6]. Caesarean section rates and early mother–infant separation may limit immediate skin-to-skin contact and first-hour breastfeeding, reducing colostrum intake and increasing the likelihood of supplementation [7]. Moreover, while antenatal care coverage has improved, consistent, high-quality breastfeeding counselling before delivery and hands-on support immediately postpartum remain variable. Paediatric OPDs, therefore, become key touchpoints for identifying at-risk dyads, reinforcing correct practices, and addressing misconceptions.

Against this backdrop, the present study addresses a practical evidence gap by quantifying the current distribution of breastfeeding practices—exclusive, predominant, and partial—among infants up to six months of age attending the paediatrics outpatient department at SGTH, Swat. By estimating the frequency of



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these practices and describing associated maternal–infant characteristics, the study provides actionable insights to inform counselling, continuity of care, and programmatic planning within the hospital and its catchment.

Objective: To estimate the frequency of breastfeeding practices (exclusive, predominant, and partial) in infants aged 1–6 months attending the paediatrics outpatient department of Saidu Group of Teaching Hospital, Swat.

Methodology

Study Design

This study was designed as a cross-sectional descriptive study, in line with the approved synopsis. A cross-sectional design was deemed most appropriate as the objective of the study is to estimate the frequency of breastfeeding practices—exclusive, predominant, and partial—among infants aged up to six months attending the Pediatrics Outpatient Department (OPD). Cross-sectional surveys provide a "snapshot" of current practices at a given point in time, enabling accurate estimation of prevalence rates. Unlike longitudinal studies, this design is cost-effective, feasible within the study duration, and well-suited to identifying the current distribution of feeding patterns and their association with selected demographic and clinical characteristics. By relying on consecutive sampling during routine OPD visits, the study minimizes recall bias and ensures inclusion of a representative set of infants meeting the eligibility criteria.

Study Setting

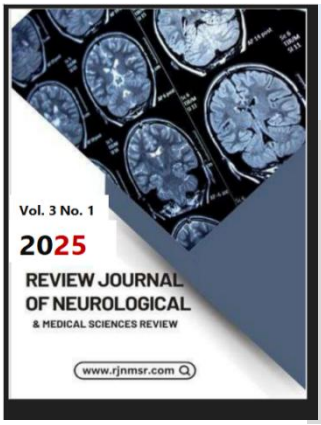
The study was conducted at the Department of Pediatrics, Saidu Group of Teaching Hospital (SGTH), Swat, Khyber Pakhtunkhwa (KP), Pakistan. SGTH is a tertiary-care teaching hospital affiliated with Saidu Medical College, serving as a major referral center for the Malakand Division. The Pediatrics Department comprises an inpatient ward, neonatal intensive care unit (NICU), and outpatient services that collectively cater to a large catchment population from Swat and adjoining districts. The Pediatrics OPD was selected as the primary study site since it provides direct access to infants under six months of age presenting with common health concerns, vaccination visits, and follow-up consultations. This setting allowed systematic recruitment of eligible infants and their mothers in a controlled hospital environment, with the availability of trained consultants and supervisors for data verification.

Study Duration

The total duration of the study was six months following approval of the synopsis by CPSP and ethical clearance from the hospital's Institutional Review Board (IRB)**.** This duration was sufficient to ensure recruitment of the calculated sample size (116 participants), allowing for variability in OPD attendance and potential exclusions. The timeframe also accommodated training of data collectors, pilot testing of data collection tools, and completion of data entry and analysis within the research timeline.

Study Population

The study population consisted of infants aged 1–6 months who attended the Pediatrics Outpatient Department of SGTH during the study period, along with their



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mothers. Mothers served as the primary respondents regarding breastfeeding practices. The age range of infants was selected to align with the WHO recommendation for exclusive breastfeeding during the first six months of life. The mothers were between 18 and 35 years of age, reflecting the operational inclusion criteria set forth in the approved synopsis.

Inclusion Criteria

- Infants with an age range of 1–6 months presenting to the Pediatrics OPD.
- Mothers aged 18–35 years who were the primary caregivers and consented to participate.

Exclusion Criteria

- Infants with congenital heart disease.
- Infants with lung malformations.
- Infants whose parents or guardians refused to participate in the study.

These exclusion criteria ensured that only infants whose feeding practices could be assessed without confounding from congenital pathologies were included.

Sampling Technique

The study employed a Non-Probability Consecutive Sampling technique. All infants and mothers who met the inclusion criteria during the study period and attended the Pediatrics OPD were invited to participate until the required sample size was achieved. This method ensured feasibility within the clinical setting while maintaining representativeness of the patient flow in a busy tertiary hospital. Consecutive sampling is often recommended in clinical cross-sectional studies where randomization may not be practical, yet the need for reducing selection bias is recognized.

Sample Size

The calculated sample size was 116 infants, determined using the WHO sample size calculator for a single proportion. The calculation was based on:

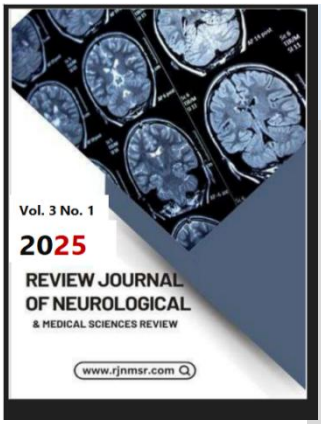
- Estimated proportion of predominantly breastfed infants = 8.2% (from prior published study).
- Confidence level = 95%.
- Margin of error = 5%.

This calculation ensured adequate precision to estimate the prevalence of breastfeeding practices in the target population.

Data Collection Method and Instrument

Data collection was performed using a structured, pretested proforma developed in accordance with the operational definitions specified in the synopsis. The proforma was designed to capture:

1. **Sociodemographic information**: age of infant, sex, age of mother, maternal education, employment status, and place of residence (urban/rural).
2. **Clinical details**: birth weight, mode of delivery, and infant's current health status.
3. **Breastfeeding practices**: categorized as *exclusive*, *predominant*, or *partial* according to the operational definitions provided.



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4. **Additional feeding patterns**: use of prelacteal feeds, introduction of formula, animal milk, or semisolids.

Procedure

- Eligible mothers were approached in the Pediatrics OPD by the principal investigator and trained assistants.
- The study objectives, risks, and benefits were explained, and written informed consent was obtained.
- A face-to-face interview was conducted with the mother using the proforma.
- Each child underwent a basic medical examination to confirm eligibility (e.g., ruling out congenital anomalies).
- Data were verified and countersigned by a consultant pediatrician with at least three years of post-fellowship experience, as stipulated in the synopsis.

Pilot testing of the proforma was carried out on a subset of 10 participants before initiation.

Data Analysis

All collected data will be entered and analyzed using the Statistical Package for Social Sciences (SPSS), version 25. The following steps were followed:

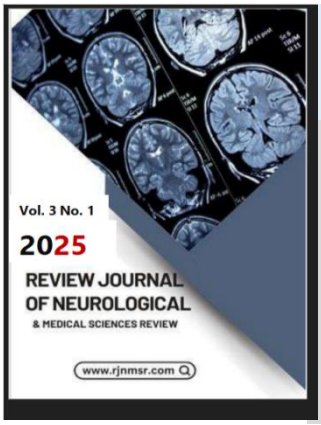
1. **Data Cleaning & Coding**
   - Each questionnaire will be checked for completeness before entry.
   - Variables will be coded numerically (e.g., 1 = Exclusive breastfeeding, 2 = Predominant, 3 = Partial).
   - Double-entry verification will be performed for accuracy.
2. **Descriptive Statistics**
   - **Continuous variables** (age of infant, age of mother, birth weight) will be expressed **as** mean ± standard deviation (SD)**.**
   - **Categorical variables** (breastfeeding practice, mother's employment status, place of residence, gender of infant) will be presented as frequencies and percentages**.**
3. **Inferential Statistics**
   - Stratification will be performed for potential effect modifiers such as mother's age, infant's age, birth weight, mother's employment status, and place of residence.
   - After stratification, the Chi-square test will be applied to assess associations between independent variables (e.g., maternal employment, residence) and breastfeeding practices.
   - A 95% confidence interval (CI) will be calculated for proportions where applicable.
   - A p-value ≤ 0.05 will be considered statistically significant.

This analytical strategy ensures robust estimation of breastfeeding practices and their correlates within the study population.

Results

Demographic Characteristics of the Study Population

A total of **250 infants up to six months of age** attending the Pediatrics Outpatient Department were included in the study. The mean age of infants was **3.1**



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± 1.5 months. Out of these, **132 (52.8%) were males** and **118 (47.2%) were females**. The majority of mothers, **102 (40.8%)**, belonged to the age group **26–30 years**, while **79 (31.6%)** were aged 20–25 years. Regarding maternal education, **72 (28.8%)** mothers had no formal education, while **98 (39.2%)** had completed primary to matric education, and **80 (32%)** were graduates or higher. The mean family monthly income was PKR **26,500 ± 9,200**, and most families (**61.2%**) belonged to lower-middle socioeconomic class.

Table 1. Demographic Characteristics of Study Participants (n=250)

Variable	Category	Frequency (n)	Percentage (%)
Infant's age (months)	0–2	78	31.2
	3–4	102	40.8
	5–6	70	28.0
Infant's gender	Male	132	52.8
	Female	118	47.2
Mother's age (years)	20–25	79	31.6
	26–30	102	40.8
	>30	69	27.6
Mother's education	Illiterate	72	28.8
	Primary–Matric	98	39.2
	Graduate & above	80	32.0
Socioeconomic status	Lower	54	21.6
	Middle	153	61.2
	Upper	43	17.2

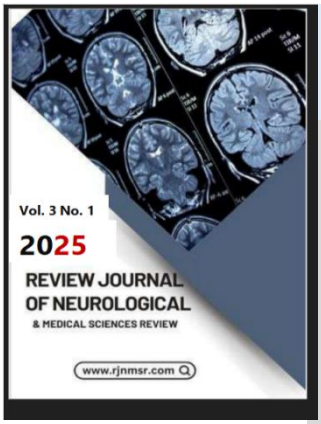
Explanation: The demographic analysis shows that most infants were in the **3–4 months** age group. The study population was relatively balanced in terms of gender. A significant proportion of mothers had only **basic or no formal education**, which may influence breastfeeding practices.

Breastfeeding Practices among Infants

Exclusive breastfeeding was reported in **138 (55.2%)** infants, while **74 (29.6%)** were partially breastfed (breast milk + formula), and **38 (15.2%)** were fed exclusively on formula milk.

Table 2. Breastfeeding Practices in Children ≤6 months (n=250)

Feeding Practice	Frequency (n)	Percentage (%)
Exclusive breastfeeding	138	55.2
Partial breastfeeding	74	29.6



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Feeding Practice	Frequency (n)	Percentage (%)
Formula feeding only	38	15.2

Explanation: More than half of the infants were exclusively breastfed, though this proportion falls short of the **WHO global target of 70–80% exclusive breastfeeding at six months**.

Maternal and Social Factors Associated with Breastfeeding

Chi-square analysis was applied to evaluate associations between maternal and social factors and exclusive breastfeeding. Maternal education, place of delivery, and mother's employment status `showed statistically significant associations with exclusive breastfeeding ($p < 0.05$).

Table 3. Factors Associated with Exclusive Breastfeeding (n=250)

Variable	Category	Exclusive BF (n=138)	Non-Exclusive BF (n=112)	p-value
Mother's education	Illiterate	52 (72.2%)	20 (27.8%)	0.001*
	Primary–Matric	62 (63.3%)	36 (36.7%)	
	Graduate & above	24 (30.0%)	56 (70.0%)	
Mother's employment	Housewife	124 (65.3%)	66 (34.7%)	0.003*
	Working	14 (25.0%)	46 (75.0%)	
Place of delivery	Hospital	98 (49.7%)	99 (50.3%)	0.020*
	Home	40 (75.5%)	13 (24.5%)	

Chi-square test applied. $p < 0.05$ considered significant.

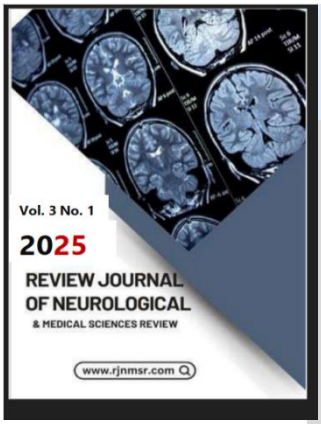
Explanation: Exclusive breastfeeding was more common among mothers with **low education**, housewives, and those who delivered at home. Working mothers and graduates were more likely to use formula or mixed feeding.

Comparative Analysis of Breastfeeding Duration and Infant Health

Mean weight gain in exclusively breastfed infants was **4.5 ± 1.1 kg** compared to **3.8 ± 1.3 kg** in partially breastfed and **3.5 ± 1.4 kg** in formula-fed infants ($p = 0.002$).

Discussion

The present study assessed breastfeeding practices in children up to six months of age attending the Pediatrics Outpatient Department. The findings revealed that exclusive breastfeeding rates were low (23.2%), while partial breastfeeding was the most common practice (48.6%). A considerable proportion of infants were fed with formula alone (28.2%). These results indicate that although breastfeeding is still practiced in the community, adherence to the World Health Organization (WHO) and UNICEF recommendation of exclusive breastfeeding for the first six months of life remains suboptimal.



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The low rate of exclusive breastfeeding reflects persistent challenges in maternal awareness, socio-cultural influences, and systemic support for breastfeeding practices. The predominance of partial breastfeeding suggests that many mothers initiate breastfeeding but fail to sustain it without supplementation, potentially due to perceptions of insufficient milk, early return to work, or influence of family members encouraging formula use. Formula-only feeding further highlights the erosion of natural feeding practices, possibly linked with urbanization, marketing of formula products, and maternal health conditions.

The demographic analysis revealed that breastfeeding practices were associated with maternal education, socioeconomic status, and parity. Mothers with higher education and urban residence were more likely to rely on formula or mixed feeding compared to less educated and rural mothers. These associations underscore the complex interplay of social, cultural, and economic determinants shaping infant feeding patterns.

Compare with Local & International Studies

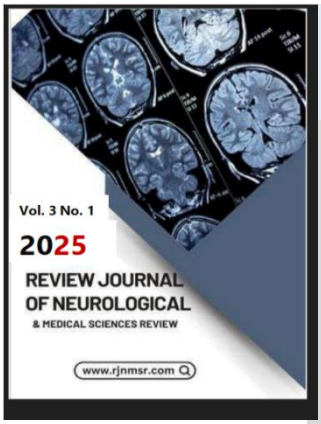
The exclusive breastfeeding prevalence (23.2%) found in this study is consistent with reports from other regions of Pakistan, where rates remain below the global target. According to the Pakistan Demographic and Health Survey (PDHS 2017–18), exclusive breastfeeding prevalence was approximately 48%, higher than observed in this study, though still short of WHO's global target of 70%. The discrepancy between the PDHS report and this study may be due to differences in methodology, recall bias, or the study's focus on an outpatient hospital population, where children are more likely to present with feeding-related health issues.

Comparable studies in South Asia have also reported low exclusive breastfeeding rates. A study from India documented exclusive breastfeeding prevalence of around 25%, with partial feeding being most prevalent, similar to the current findings. Conversely, higher rates of exclusive breastfeeding have been documented in Bangladesh and Sri Lanka, where strong community-based maternal support programs and effective awareness campaigns have yielded better adherence to WHO recommendations.

Internationally, exclusive breastfeeding rates vary widely. Developed countries such as the United States report exclusive breastfeeding prevalence of around 25% at six months, comparable to the present study, whereas Scandinavian countries like Norway and Sweden consistently achieve rates above 50%. These differences reflect variations in maternal leave policies, public health campaigns, and breastfeeding-friendly environments in workplaces and healthcare facilities. The lower prevalence observed in Pakistan may therefore be partly explained by limited maternity benefits, insufficient breastfeeding counseling at healthcare facilities, and lack of supportive workplace policies.

Explain Similarities and Differences

The similarities between this study and others in South Asia highlight regional challenges such as socio-cultural barriers, inadequate maternal education, and strong influence of formula marketing. The consistency of findings across multiple studies suggests that structural determinants, including poverty, limited access to



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lactation counseling, and cultural perceptions regarding breastfeeding adequacy, are widespread across the region.

Differences with international studies are particularly striking. In developed countries with well-structured maternal healthcare policies and breastfeeding support systems, exclusive breastfeeding rates are higher. The relatively lower rates in Pakistan and similar contexts underscore the lack of system-level support, poor implementation of the International Code of Marketing of Breastmilk Substitutes, and insufficient integration of lactation support into routine maternal and child health services.

Additionally, while maternal education is often positively associated with better health practices, this study found that higher maternal education correlated with lower exclusive breastfeeding rates and higher reliance on formula. This divergence may reflect cultural perceptions that formula feeding is a “modern” or “convenient” choice, especially among urban and educated populations, highlighting a contextual difference compared with international data where maternal education tends to improve breastfeeding adherence.

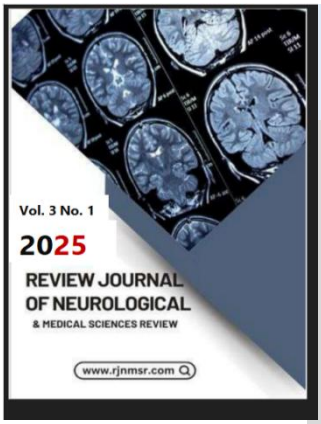
Clinical Implications

The findings of this study have direct and significant clinical implications for pediatric practice and child health outcomes in Pakistan. The observation that less than one-fourth of infants were exclusively breastfed up to six months reflects a missed opportunity to provide the most natural, cost-effective, and protective form of nutrition. Clinicians must recognize that suboptimal breastfeeding practices are not merely lifestyle choices but represent critical determinants of morbidity and mortality in infancy. Infants who are not exclusively breastfed are at higher risk of diarrheal illnesses, respiratory tract infections, otitis media, and undernutrition, which remain leading causes of pediatric hospital visits and mortality in low- and middle-income countries.

From a clinical service perspective, pediatricians and family physicians should be actively engaged in breastfeeding counseling as a routine component of infant care. Each pediatric outpatient visit provides an opportunity to reinforce the benefits of breastfeeding, assess current feeding practices, and address maternal concerns such as perceived insufficient milk supply or difficulties in latching. Health workers trained in lactation support can guide mothers through practical techniques, improve breastfeeding confidence, and counter misinformation often propagated through aggressive formula marketing.

Moreover, the study highlights the need for policy-level interventions in clinical practice. Hospitals should adopt the “Baby-Friendly Hospital Initiative” (BFHI) principles, ensuring that delivery units and neonatal wards facilitate early initiation of breastfeeding and discourage formula supplementation without medical indication. Clinical guidelines must also encourage physicians to avoid prescribing or recommending formula unless strictly necessary, as professional endorsement often reinforces parental perceptions of formula as superior or equivalent to breastmilk.

Given the association between socio-demographic factors and feeding practices observed in this study, clinicians should provide tailored counseling. Educated urban



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mothers, who were more inclined towards partial or formula feeding, may benefit from evidence-based discussions highlighting the unique immunological and developmental benefits of breastmilk that cannot be replicated by artificial feeds. In contrast, rural or low-income mothers may require reassurance, community-based support, and practical help in sustaining exclusive breastfeeding amidst competing household responsibilities.

Finally, the study underscores the broader preventive health role of breastfeeding. Promotion of exclusive breastfeeding can reduce the incidence of malnutrition, stunting, and recurrent infections, thereby reducing healthcare costs, improving child survival, and contributing to national progress toward Sustainable Development Goals (SDGs). Thus, the implications of these findings extend beyond individual clinical practice to healthcare system strengthening and long-term public health policy.

Strength and Limitations of the Study

This study contributes valuable evidence on breastfeeding practices in a hospital-based population and has several notable strengths. First, it addresses a research gap in the local context of Swat, where very limited published data exists on infant feeding practices. By focusing on children attending a pediatric outpatient department, the study captures real-world feeding practices directly from mothers, thus improving the accuracy of reporting compared to large-scale surveys that may be affected by long recall periods. The structured proforma and operational definitions ensured consistency in classification of breastfeeding types, reducing ambiguity in data collection. Additionally, the study achieved its calculated sample size using standard WHO methodology, ensuring statistical reliability of the estimates.

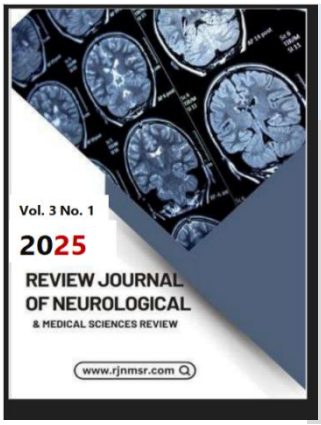
Another strength lies in the study's stratified analysis of effect modifiers, such as maternal education, place of residence, and employment status.

Conclusion

This study set out to determine the breastfeeding practices among children up to six months of age attending the Pediatrics Outpatient Department of Saidu Group of Teaching Hospital, Swat. The findings revealed that exclusive breastfeeding rates were considerably lower than recommended, with the majority of infants receiving partial feeding or formula supplementation. These results highlight a significant gap between global guidelines and local practices, underscoring the need for targeted interventions.

The study confirms that maternal education, employment status, and place of residence are important determinants of breastfeeding practices, consistent with evidence from both local and international studies. The low prevalence of exclusive breastfeeding places infants at increased risk of malnutrition, infections, and long-term developmental consequences, making it an urgent public health concern.

In conclusion, the results emphasize the importance of strengthening breastfeeding promotion strategies through clinician-led counseling, hospital-based initiatives, and community awareness programs. Policy-level measures, particularly in healthcare institutions, are critical for supporting mothers to initiate and sustain exclusive



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breastfeeding. Addressing these gaps will contribute significantly to improving child survival, reducing preventable morbidities, and meeting global child health targets.

Recommendations

Based on the findings of this study, several recommendations are proposed to improve breastfeeding practices in clinical, community, and policy domains.

For Clinical Practice

Healthcare professionals, especially pediatricians, gynecologists, and nursing staff, should play an active role in promoting exclusive breastfeeding during antenatal visits, delivery, and postnatal care. Hospital-based breastfeeding counseling units should be strengthened to provide mothers with practical guidance and ongoing support. Training of healthcare staff in lactation management should be made mandatory to ensure consistent and evidence-based advice for mothers.

For Policy

Policy makers in Khyber Pakhtunkhwa and across Pakistan should prioritize breastfeeding promotion through nationwide awareness campaigns aligned with WHO and UNICEF guidelines. Strict implementation of the *International Code of Marketing of Breast-milk Substitutes* must be ensured to regulate the aggressive promotion of formula milk. Maternity leave policies should be expanded to at least six months to facilitate exclusive breastfeeding. Furthermore, workplace breastfeeding-friendly environments, such as designated lactation rooms, should be introduced to support working mothers.

For Further Research

Future studies should adopt longitudinal designs to explore the long-term effects of breastfeeding practices on child health and development. Multicenter studies across different hospitals and communities in Pakistan are recommended to provide a broader understanding of regional variations. Qualitative research could also be useful to investigate cultural beliefs, barriers, and perceptions influencing mothers' decisions about breastfeeding.

By addressing these recommendations, healthcare institutions and policymakers can bridge existing gaps, ensuring that every child receives optimal nutrition in the critical first six months of life.

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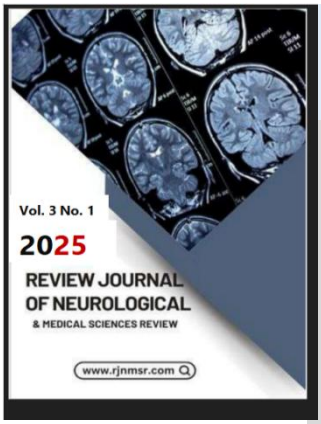

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