

ASSESSMENT OF KNOWLEDGE AND BREASTFEEDING PRACTICES AMONG LACTATING WOMEN IN DERA ISMAIL KHAN, KHYBER PAKHTUNKHWA, PAKISTAN

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Abstract

Background: Breastfeeding is a crucial factor for the optimal growth and survival of infants. Knowledge of breastfeeding is a significant determinant of breastfeeding practices, but it can be affected by socio-demographic factors.

Objective: The objective of this study is to determine the knowledge and practices of breastfeeding among lactating mothers in Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan, and their association with socio-demographic factors.

Methods: The study was a cross-sectional survey carried out from April 5 to April 30, 2019, at the Department of Community Medicine, Gomal Medical College. A total of 98 lactating mothers aged 18-40 years were selected for the study using non-probability purposive sampling. The data was collected using a structured self-administered questionnaire to assess socio-demographic variables, knowledge, and practices related to breastfeeding. The knowledge and practices were assessed using a 5-point Likert scale and scored as poor, fair, good, or excellent. The data was analyzed using SPSS version 23. One-way ANOVA was used to determine the relationship between socio-demographic variables and scores of knowledge and practices. Pearson correlation and linear regression tests were used to determine the correlation between knowledge and practices. A p -value of <0.05 was considered statistically significant.

Results: The mean score of knowledge was 3.92 ± 0.63 and that of practice was 3.58 ± 0.61 , both of which were classified as good. Good knowledge was found in 47.9% of the participants, whereas 44.9% had good practice. Residence and occupation were found to have significant association with knowledge and practice ($p < 0.001$), and monthly income was significantly associated with knowledge ($p = 0.028$). There was a strong positive correlation between knowledge and practice ($r = 0.735$). Knowledge was a significant predictor of practice ($p = 0.004$), accounting for 54% variation in practice ($R^2 = 0.54$).

Conclusion: The knowledge and practices regarding breastfeeding were found to be good. Knowledge had a strong positive influence on practice. Educational interventions can be designed to further improve the practice of breastfeeding.

1.0 INTRODUCTION

Breastfeeding is widely recognized as the most effective and natural way of infant feeding, offering the best nutrition and immunological protection in early life. Human breast milk provides a balanced mixture of macronutrients, micronutrients, antibodies, enzymes, and growth factors that are essential for healthy physical and cognitive development (Кисельова et al., 2022). Early initiation of breastfeeding in the first hour of life has been shown to greatly lower neonatal mortality rates and improve mother-infant relationships (Muktamath et al., 2023). The World Health Organization and UNICEF recommend exclusive breastfeeding for the first six months of life, followed by appropriate complementary feeding with continued breastfeeding up to two years of age or beyond (Grummer-Strawn et al., 2017).

Globally, suboptimal breastfeeding practices are a significant public health issue. Only an estimated 40% of children under six months of age are exclusively breastfed (UNICEF, 2022). Poor breastfeeding practices are significant contributors to morbidity and mortality in childhood, especially in developing nations. Undernutrition due to poor feeding practices is associated with vulnerability to infections, poor cognitive function, poor academic achievement, and low productivity in adulthood (Hossain and Mirshahi, 2022). The maternal knowledge is a significant determinant of breastfeeding practices. It has been observed that mothers with sufficient knowledge about the importance of colostrum, early initiation of breastfeeding, and exclusive breastfeeding are more likely to practice recommended breastfeeding practices (Sankar et al., 2015). However, knowledge by itself does not always lead to practice. Socio-demographic variables such as maternal age, educational attainment, employment, income level, and residence have been shown to play a significant role in influencing breastfeeding practices (Bartick et al., 2017). Social beliefs, family dynamics, lack of social support, aggressive marketing of breast milk substitutes, and myths surrounding milk insufficiency have been shown to impede effective breastfeeding practices (Victora et al., 2016). In Pakistan, there are large variations in breastfeeding practices among different provinces and between rural

and urban areas. Despite efforts to increase knowledge through awareness programs, the prevalence of exclusive breastfeeding is low compared to international goals (National Institute of Population Studies [NIPS] & ICF, 2019). There could be regional variations in maternal education, health care facilities, and socio-economic factors that may influence knowledge and practice of breastfeeding. However, there is a lack of information from the southern districts of Khyber Pakhtunkhwa, including Dera Ismail Khan. It is important to assess maternal knowledge and breastfeeding practices at the local level to determine the gaps and develop focused educational and community-based interventions. The objective of the current study was to assess the knowledge and practices of breastfeeding among lactating mothers in Dera Ismail Khan and to examine the relationship between socio-demographic variables and the practice of breastfeeding.

2.0 MATERIALS AND METHODS

2.1 Study Design and Setting

The cross-sectional survey was performed among lactating women in Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan, from April 5 to April 30, 2019. The study was performed at the Department of Community Medicine, Gomal Medical College. The target population was exclusively lactating women aged 18-40 years.

2.2 Ethical Considerations

The study was approved by the Institutional Ethical Committee before the start of the study. Informed consent was taken from all participants verbally before starting data collection. Participation in the study was voluntary, and the confidentiality of the information of the respondents was maintained strictly.

2.3 Sampling Technique

A non-probability purposive sampling method was used to identify eligible participants for the study.

2.4 Eligibility Criteria

The criteria for selecting mothers for the study included mothers aged 18 to 40 years with at least one infant above six months. Mothers who

were not willing to participate in the study or those who were not breastfeeding due to medical reasons in either the mother or the infant were excluded from the study.

2.5 Data Collection Tool and Procedure

The data was collected through a structured self-administered questionnaire designed to measure knowledge and practices related to breastfeeding. The questionnaire contained questions related to the awareness of the benefits of breastfeeding, early initiation of breastfeeding, and exclusive breastfeeding. Socio-demographic factors included maternal age, residence, educational status, occupation, and monthly family income. Maternal age was divided into three groups, residence into rural, urban, and nomadic if applicable, educational status into five levels, and monthly family income into four groups.

2.6 Measurement of Variables

The knowledge and practice scores were measured using a 5-point Likert scale. The mean scores were interpreted using the following criteria: 1.0-2.5 = Poor, 2.6-3.5 = Fair, 3.6-4.5 = Good, and >4.5 = Excellent. The knowledge and practice scores were reported as mean ± standard deviation (SD), while the categorical variables were reported as frequencies and percentages.

2.7 Statistical Analysis

The analysis of the data was done using Statistical Package for the Social Sciences (SPSS

software version 23. The descriptive statistics were used to summarize the socio-demographic information and study variables. One-way Analysis of Variance (ANOVA) was employed to find out the statistically significant differences in the knowledge and practice scores among the socio-demographic groups. Pearson correlation analysis was employed to examine the association between the knowledge and practice scores, while linear regression analysis was employed to examine the predictive role of knowledge on practice. A p-value of <0.05 was considered statistically significant.

3.0 RESULTS

A total of 98 lactating mothers took part in the study, and there were no missing data. The socio-demographic details of the participants are presented in Table 1. The dominant group of participants (78.6%) belonged to the age group of 20-35 years, followed by 4.1% in the category of less than 20 years, and 17.3% in the category of 36-40 years. Urban residents accounted for 66.3%, and rural residents accounted for 33.7% of the total participants. Educational status was diverse, with 31.6% illiterate, 14.3% having completed matriculation, 8.2% having completed intermediate, 28.6% graduates, and 17.3% postgraduates. Most of the mothers (66.3%) were housewives, followed by 12.2% blue-collar workers, and 21.4% white-collar workers. The distribution of monthly family income showed that 39.8% had less than PKR 30,000, followed by 30.6%.

Table 1. Socio-Demographic Characteristics of Respondents (n = 98)

Characteristic	Categories	Frequency (n)	Percentage (%)
<i>Age (years)</i>	<20	4	4.1
	20-35	77	78.6
	36-40	17	17.3
<i>Residence</i>	Rural	33	33.7
	Urban	65	66.3
<i>Education</i>	Illiterate	31	31.6
	Matric	14	14.3
	Intermediate	8	8.2
	Graduate	28	28.6
	Postgraduate	17	17.3
<i>Occupation</i>	Housewife	65	66.3
	Blue-collar	12	12.2
	White-collar	21	21.4
<i>Monthly Family Income (PKR)</i>	<30,000	39	39.8

	30,000–70,000	30	30.6
	70,000–150,000	13	13.3
	>150,000	16	16.3

3.1 Breastfeeding Knowledge and Practice

The average score for knowledge was 3.92 ± 0.63 , which falls under the category of Good, and the average score for practice was 3.58 ± 0.61 , which also falls under the category of Good. The distribution of the respondents based on the categories of knowledge and

practice is shown in Table 2. Out of the total respondents, 33.6% had fair knowledge, 47.9% had good knowledge, and 18.4% had excellent knowledge. For practice, 4.1% had poor practice, 43.9% had fair practice, 44.9% had good practice.

Table 2. Distribution of Respondents According to Knowledge and Practice Scores

Variable	Category	Frequency (n)	Percentage (%)
<i>Knowledge Score</i>	Fair	33	33.6
	Good	47	47.9
	Excellent	18	18.4
<i>Practice Score</i>	Poor	4	4.1
	Fair	43	43.9
	Good	44	44.9
	Excellent	7	7.1

3.2 Association Between Socio-Demographic Factors and Knowledge/Practice Scores

Analysis of variance (ANOVA) was conducted to investigate the relationship between socio-demographic factors and scores of breastfeeding knowledge and practices. The findings showed that residence significantly influenced both knowledge and practices ($p < 0.001$), with higher mean scores among urban mothers compared to their rural counterparts. This implies that urban residence, which is characterized by better access to health information and maternal support programs, could have a positive effect on breastfeeding knowledge and practices. Maternal occupation was also found to be significantly related to both knowledge and practices ($p < 0.001$). Mothers who were blue- or white-collar workers showed better knowledge and practices than housewives. This could be attributed to better access to health education or support programs at their places of work. The monthly family income was found to have a significant association with knowledge scores ($p = 0.028$), which suggests that mothers belonging to higher-income families were more likely to have better knowledge about breastfeeding. However, income was not found to have a significant association with practice, which

suggests that other factors, such as culture and family, may influence the translation of knowledge into practice. There were no statistically significant associations found between the age and educational status of mothers and knowledge or practice scores, which suggests that the awareness and practice of breastfeeding in this population are not directly dependent on these factors.

3.3 Correlation and Regression Analysis

Pearson correlation analysis indicated a strong positive correlation between breastfeeding knowledge and practice scores ($r = 0.735$), indicating that mothers who scored higher in knowledge were more likely to practice recommended breastfeeding practices. Further analysis using linear regression revealed that maternal knowledge was a significant predictor of breastfeeding practice ($p = 0.004$), explaining 54% of the variance in practice scores ($R^2 = 0.54$). These results highlight the important role of maternal knowledge in influencing breastfeeding behavior and suggest that educational interventions may have a significant impact on improving breastfeeding practices among lactating mothers.

Table 3. ANOVA: Association Between Socio-Demographic Variables and Knowledge/ Practice Scores

Variable	Knowledge Score	Practice Score	p-value (Knowledge)	p-value (Practice)
Residence	Higher in urban	Higher in urban	<0.001	<0.001
Occupation	Working mothers	Working mothers	<0.001	<0.001
Monthly Income	Higher income	No significance	0.028	0.12
Age	Not significant	Not significant	0.34	0.29
Education	Not significant	Not significant	0.21	0.18

4.0 DISCUSSION

Breastfeeding is considered the best way of providing nutrition to infants, as it offers vital nutrients, immunological protection, and helps to establish a strong mother and child relationship (Victora et al., 2016). Early initiation and exclusive breastfeeding can prevent neonatal infections, morbidity, and mortality, along with promoting cognitive and social development (Khan et al., 2015). Despite the proven advantages of breastfeeding, suboptimal breastfeeding practices are still prevalent worldwide, especially in low- and middle-income countries (UNICEF, 2022). The current study evaluated the knowledge and practices of breastfeeding among 98 lactating mothers in Dera Ismail Khan, Khyber Pakhtunkhwa. Our results reveal that the overall knowledge and practice of breastfeeding were adequate in most participants. In particular, 47.9% of the respondents showed good knowledge, 33.6% showed fair knowledge, and 18.4% showed excellent knowledge of breastfeeding. Moreover, the overall practice of breastfeeding was fair to good in most participants, with 44.9% showing good practice and 43.9% showing fair practice. Only a small percentage (4.1%) of the participants showed poor practice of breastfeeding. The mean score of knowledge (3.92 ± 0.63) was slightly higher than the mean score of practice (3.58 ± 0.61), indicating that knowledge does not always directly translate to practice. These results are in line with previous studies conducted in Pakistan and other South Asian countries, which showed that maternal awareness of the benefits of breastfeeding is high, but adherence to proper practices is variable (Alshehri et al., 2021).

Our research also showed a positive correlation between knowledge and practice of mothers ($r = 0.735$), and regression analysis showed that

knowledge explained 54% of the variation in practice. This highlights the need for educational interventions to enhance breastfeeding practices, as has been supported by previous studies, which have shown that maternal knowledge is a significant determinant of early initiation and exclusive breastfeeding (Harder, 2024). The urban mothers scored higher in knowledge and practice compared to rural mothers, which can be attributed to the availability of health information, healthcare, and educational facilities in urban settings. This is supported by a cross-sectional study conducted in Lahore, Pakistan, which showed that urban residence was a predictor of higher rates of exclusive breastfeeding and maternal knowledge (Kehinde et al., 2024). Notably, the results showed that working mothers in our study had higher scores of knowledge and practice than housewives, which is contrary to some global studies where employment is considered a hindrance to breastfeeding (Liu et al., 2024). This could be attributed to the support that working mothers receive from their families or work environments. The income of family was found to be significantly associated with knowledge but not with practice, which suggests that financial resources can improve the accessibility of health education but cannot necessarily ensure the following of health practices. Age, educational level, and ethnicity of the mother were not found to have significant associations with knowledge and practice, which could be due to the lack of health education regarding breastfeeding in schools and communities, irrespective of the educational level of mothers. The results of this study emphasize the importance of community-based interventions, especially in rural areas, to ensure the translation of knowledge into practice regarding breastfeeding. Healthcare

professionals should aim to conduct awareness programs, mother support groups, and counseling sessions to ensure that mothers with high knowledge levels are able to apply them in their daily practices of breastfeeding.

CONCLUSION

The results obtained from this study revealed that although the knowledge and practices of breastfeeding among lactating mothers in Dera Ismail Khan were satisfactory, the practice of breastfeeding was slightly lower than the knowledge. There was a strong positive correlation between knowledge and practice, which revealed that increased maternal knowledge is directly related to improved breastfeeding practices. The urban mothers and working mothers showed higher scores for knowledge and practices than the rural mothers and housewives, which revealed that the availability of health information and support affects breastfeeding practices. The increased family income was associated with improved maternal knowledge, but it did not affect the practices. These findings highlight the need for targeted interventions, especially in rural and lower socioeconomic settings, to fill the gap between knowledge and practice. Health education initiatives, community outreach programs, and enabling policies for lactating mothers in the workforce may help improve breastfeeding practices, which in turn can lead to better infant health outcomes in the region.

RECOMMENDATIONS

On the basis of the results obtained from this study, the following steps can be taken to enhance the knowledge and practices of breastfeeding among lactating mothers in Dera Ismail Khan. The healthcare professionals should provide pregnant women with breastfeeding knowledge and practices during antenatal sessions, with a focus on mothers from rural areas and those belonging to lower-income families, as they scored lower in knowledge and practices. Although employed mothers scored higher in knowledge and practices than housewives, their breastfeeding practices were not satisfactory, and they need to be addressed. The healthcare professionals should provide maternity leave, breastfeeding breaks, and

lactation facilities at their workplaces to help employed mothers continue breastfeeding their babies. Furthermore, community-based awareness initiatives, such as mother support groups and health workshops, should also be encouraged in order to emphasize the application of knowledge gained, especially in rural communities. Finally, policymakers and health officials must also incorporate the promotion of breastfeeding within maternal and child health initiatives to ensure that there is a unified message and that support services for breastfeeding are accessible, while also monitoring breastfeeding practices at the community level. Collectively, these strategies seek to address the disparity between maternal knowledge and actual breastfeeding practices in order to enhance infant health outcomes within the region.

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