

## ORIGINAL ARTICLE

## PATTERNS AND DETERMINANTS OF BREAST FEEDING AMONG MOTHER INFANT PAIRS IN DERA GHAZI KHAN, PAKISTAN

Moazzam Ali Khan, Zubia Qureshi\*, Kauser Aftab Khan\*\*, Fouzia Nadeem Gill\*\*\*

Ghazi Khan Medical College, Dera Ghazi Khan, \*Apex Consulting Pakistan, \*\*WMO, District Gujranwala, \*\*\*Health Services Academy, Islamabad-Pakistan

**Background:** Proper breastfeeding practices are effective ways for reducing childhood morbidity and mortality. The objective of the present study was to determine the patterns and explore the determinants associated with breast feeding practices among the nursing women in Dera Ghazi Khan. **Methods:** A cross sectional study was conducted on randomly selected lactating mother infant pairs in Dera Ghazi Khan. Structured questionnaire was used for data collection. Analysis was done by using SPSS, chi square test was applied to see the association between breast feeding practices and its determinants such as knowledge of breast feeding practices. **Results:** Majority 372 (93%) of mothers mentioned that they had ever breastfed the youngest child. About 292 (73%) mothers gave colostrum to the child, and 48 (12%) exclusively breastfed. Weaning babies before four month of age was practiced by 84 (21%) of the mothers, 120 (55%) mothers started weaning at 4-6 months of child age, while 72 (18%) started to give additional food after baby turned six months old. Out of total 276 (69%) mothers reported that they had knowledge regarding breast feeding. Significant association was found between knowledge of breastfeeding and initiation and Exclusive Breast Feeding (EBF) practices ( $p$ -values  $<0.05$ ). Income, family type, mode of delivery and assistance for child were significantly associated with initiation of breastfeeding within one hour after birth ( $p$ -value  $<0.001$ ). **Conclusion:** Breast feeding practices in the studied area were not up to the mark. There is a strong need to improve the breastfeeding practices by Behavior Change Communication.

**Keywords:** Breast feeding; Early initiation; Exclusive Breast Feeding (EBF); Colostrum; Supplementary feeding; Infants

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## INTRODUCTION

Adequate and sufficient nutrition during infancy and childhood is essential to ensure the growth, development and health of children. It is well documented that for the promotion of optimal growth and development, period from birth to two years of age is a "critical window".<sup>1</sup> The consequences of poor nutrition during the first two years of life in terms of both food and feeding behaviors, had significant relation with delayed physical and mental development, illnesses, and death of the child.<sup>2</sup>

Among children less than five years of age, directly or indirectly malnutrition is responsible for about 60% of the deaths annually. Moreover two third of these deaths, during the first year of life are often associated with inappropriate feeding practices. Globally not more than 35% of children were exclusive breast fed during the first four months of their life; complementary feeding (CF) begins too early or too late, and feeds they take are either nutritionally inadequate or unsafe.<sup>3</sup> Exclusive Breast feeding (EBF) up to six months and continued breast feeding up to one year of age was ranked number one intervention globally, with complementary feeding (CF) starting at six months. These interventions were estimated to prevent almost one-fifth of under five mortality in developing countries.<sup>4</sup>

It is always considered that breastfeeding is related to cultural, social, and traditional patterns of a community. This fact rationalizes the need for regional and community based studies that allow more accurate and efficient action in regard to development and implication of intervention, based on knowledge of the local reality. The present study was done to determine the pattern and explore the determinants associated with breast feeding practices among lactating mothers in Dera Ghazi Khan.

Breast feeding practices include early initiation of breast feeding i.e within one hour of birth, exclusive breast feeding i.e the infant only given breast milk till six months of age, no other solid or liquid, not even water and complimentary feeding i.e the introduction of solid, semi-soild or soft foods to infants at two years of age.

## MATERIAL AND METHOD

A cross sectional study was conducted from September to November, 2015 at the urban union council 1 and 3 of Dera Ghazi Khan on randomly selected mother infant pairs. Selection was done by using the LHWs frame. Sample size was calculated on the basis of exclusive breast feeding prevalence among infants aged less than 6 months, which is

37.7%, according to Pakistan Demographic and Health Survey 2012–13.<sup>5</sup> At 95% confidence interval and 5% margin of error the sample size was estimated by using the simple proportion formula.

$$n = \frac{Z^2 \cdot p(1-p)}{e^2}$$

By putting values in formula

$$n = (1.96)^2 \times (0.377) \times (1-0.377) / (0.05)^2 = 360$$

By adding 10% non-response rate sample size was estimated as 396 ≈ 400.

Mothers who had mental disability, children with congenital anomalies, and mothers with complicated delivery and those not allowed to feed the baby by medical professionals were excluded from the study. A pretested structured questionnaire having questions about sociodemographic and feeding practices was built and used for this study. For statistical analysis, SPSS version 20 was used. Frequencies and percentages were computed for categorical data while mean and standard deviation were calculated for numerical variables. The chi-square statistic/ Fisher Exact test was used for testing the implication of cross-tabulations. Associations were seen between knowledge of breast feeding and breast feeding practices, also with the sociodemographic variables of the mother infant pairs. All results with *p*-values less than 0.05 were considered significant.

Ethical approval was taken from Review Committee/Board of Health Services Academy, Islamabad. Informed consent was taken from the participants before the interview. The names and personal information of the participants was kept strictly confidential. Data was used solely for the purpose of the study.

## RESULTS

Most respondent mothers 276 (69%) lie in the age group 25–34 years of age, while 72 (18%) of the babies were less than 3 months of age. Out of the total 96 (24%) mothers were illiterate and majority 244 (61%) were house wives. Among those who were employed, duty hours for 132 (33%) were five to eight hours. An approximately equal proportion of participants, i.e., 140 (35%) and 136 (34%) earned Rs. 30,000–50,000 and >Rs. 50,000 per month respectively followed by Rs.10,000–30,000 by 108 (27%). Only 16 (4%) participated mothers had monthly household income less than Rs 10,000 per month. Out of total about half 204 (51%) had a joint family system while 196 (49%) lived as a nuclear family. (Table-1)

Majority of mothers 376 (94%) reported that they were facing no health problem prior to conceiving. Others 24 (6%) reported health problems such as arthritis, backache, hepatitis B, and feeling of weakness and diabetes. Out of total 220 (55%)

mothers had one or two children, followed by 152 (38%) mothers who had 3 or 4 children. While 28 (7%) of the mothers reported that they had more than four children. Only one third that was 132 (33%) were practicing contraceptive methods. About half women 196 (49%) gave birth to their babies normally, while 204 (51%) had C-Section. The majority of mothers 308 (77%) had assistance for child care.

Only 100 (25%) of the mothers started to feed their babies within one hour after birth, while 272 (68%) started feeding after one hour to 24 hours of delivery, remaining 28 (7%) never feed to the youngest baby. Out of the total, 372 (93%) mothers mentioned that they had ever breastfed the youngest child. Out of which 167 (45%) reported to feed on demand while the rest 205(55%) mentioned that they feed their babies when it is feasible.

About 292 (73%) mothers gave colostrum to babies while 108 (27%) discarded it. Only 48 (12%) reported that they exclusively breast feed their child. 136 (34%) mentioned that the first feed for their babies was honey, while others reported as medicated Ghuti available in market 88 (22%), top feed 96 (24%), and water 8 (2%) as first feed of their babies. Problems associated with not feeding exclusively were nostalgia 69 (21%), backache and weakness 105 (32%) and 128 (39%) respectively, and depression or stress in 26 (8%). Twenty one percent mothers (n=84) reported that they started weaning before baby reached fourth months of age. 220 (55%) mothers started at 4–6<sup>th</sup> months of age, while 72 (18%) started to give additional food after six months of age. (Table-2)

Out of the total, 276 (69%) mothers reported that they had knowledge regarding breast feeding practices, i.e., initiation of breastfeeding, exclusive breast feeding and supplementary feeding etc. Source of information for 184 (67%) was their relatives, for 52 (19%) it was health care providers and 40 (14%) stated that they got the knowledge about breast feeding practices through friends. One hundred and fifty-six (39%) stated that breast feeding was beneficial for babies only, while 244 (61%) reported that it is beneficial for the health of both mothers as well as babies. Out of the total, 264 (66%) mentioned that colostrum is safe for the baby, 16 (4%) reported that it is not safe and about 120 (30%) didn't know about the safety of colostrum.

Income, family type, mode of delivery and assistance for child care were significantly associated with initiation of breast feeding within one hour after birth with *p*-value <0.001. Breast feeding practices were decreased as the number of children increased. Results of BF knowledge was significant with initiation of breast feeding and Exclusive breast feeding (EBF) with *p*-values <0.05.

**Table 1: Socio demographic characteristics of the respondents**

Variable	n (%)	Variable	n (%)
Mothers age in years		Educational status of the mothers	
15-24	32 (8)	Illiterate	96 (24)
25-34	276 (69)	Primary-Metric	124 (31)
35-44	72 (18)	Above metric	180 (45)
>44	20 (5)	Mothers employment status	
Age of infants in months		Unemployed	244 (61)
≤3	72 (18)	Employed	156 (39)
>3-6	88 (22)	Monthly household income	
>6-9	116 (29)	<10,000	16 (4)
>9-12	124 (31)	10,001-30,000	108 (27)
Respondent family structure		30,001-50,000	140 (35)
Nuclear	196 (49)	>50,000	136 (34)
Extended	204 (51)		

**Table-2: Breastfeeding practices by lactating mothers**

Variable	n	%
<b>Initiation of breastfeeding</b>		
Within one hour	100	25
After one to 24 hours	272	68
Not breast feed to child	28	7
Total	400	100
<b>Breast feed to child</b>		
On demand	167	45
When feasible	205	55
Total	372	100
<b>Gave colostrum to child</b>		
Yes	292	73
No	108	27
Total	400	100
<b>EBF to child</b>		
BF continue (Child<6 months)	24	6
Yes	48	12
No	328	82
Total	400	100
<b>Reasons for not exclusively breastfeed to child</b>		
Nostalgia	69	21
Backache	105	32
Weakness	128	39
Depression/Stress	26	8
Total	328	100
<b>1<sup>st</sup> feed to child</b>		
Breast milk	72	18
Honey	136	34
Medicated market Ghutti	88	22
Top feed	96	24
Water	8	2
Total	400	100
<b>Introduce supplementary feed to child</b>		
EBF continue	24	6
≤4 months	84	21
4-6 months	220	55
>6months	72	18
Total	400	100

**DISCUSSION**

Breast feeding, a very important issue of the society and strongly related to the health of the mothers and babies, is not being properly addressed. It is a cost effective public health intervention required serious attention.

This study found that, only 25% mothers initiated breastfeeding within one hour of birth, while 68% started breast feeding after one day of delivery. Breast-feeding initiation within one hour after delivery among Irish-nationals and non-Irish-nationals was reported to be 47% and 79.6% respectively.<sup>6</sup> Many studies have reported early initiation of breast feeding, in contrast to our results. These include studies done in Dodoma Municipality by Mohan L, Western Nepal by Khanal V *et al*, Delhi by Gupta A *et al*, Timor Leste by Senarath U *et al*, Qatar by Al-Kohji *et al* and Egypt by El Shafei AMH and Labib JR.<sup>7-12</sup> In Laos, early initiation of breastfeeding was reported 39.6% among infants.<sup>13</sup>

About 73% mothers gave colostrum to their babies according to this study. An approximately equal proportion, i.e., 79.4% of mothers in India reported likewise.<sup>9</sup> Only 18% mothers in our study reported exclusively breast feeding to their child. In contrast the study conducted in Cameroon 84.8% infants to be exclusive breast feed.<sup>14</sup> whereas the proportion of exclusively breast feed infants Dodoma Municipality was reported to be 59%.<sup>7</sup> Wide variation of exclusive breast feeding is reported by studies conducted globally with 2%, 16.8%, 10.4%, 29.9%, 29.8%, 3/4<sup>th</sup> of infants and 56.5% reported in Kenya, US, Nova Scotia, Egypt, Brazil, North India and Timor-Leste.<sup>10,12,15-19</sup> Results similar to ours were reported by the study of Al-Kohji S *et al* in Qatar who found 18.9% infants under six months to be exclusively breast feed.<sup>11</sup> In a study of Kenya 40% mothers practiced feed ather than breast milk within three days after delivery.<sup>15</sup> Avoidance of pre lacteal feeds within the first three days of life occurred among 65% of Laotian infants, and was highest among ethnic Hmong and Khmer infants.<sup>20</sup>

Problems associated with the participants of this study not to feed exclusively were as mastalgia, backache and weakness, and depression or stress. Recommencement of studies or work (38.4%) and the belief that child was not 'satisfied'(34.2%) were the main reasons for introducing other foods in

Cameroon study.<sup>14</sup> Majority women's of this study reported to feed on the demand of the baby Same result was found by Chiabi A that most women (87.1%) breastfed on demand.<sup>14</sup> 13% women of this study started to give additional food after six months of the baby age. In Odisha, India 15% mothers started supplementary feeding after six months of baby's age.<sup>20</sup>

The results of this study showed that 69% of the participated mothers had knowledge about breast feeding. While 61% know that colostrum is safe and beneficial for the health of baby. According to Indian study 52.78% mothers had knowledge regarding breast feeding initiation within half an hour to one hour after birth and 40% had an idea about the importance of colostrum.<sup>21</sup>

Results of BF knowledge are significant with initiation of breast feeding and EBF with  $p$ -values  $<0.05$ . An Indonesian paper aims "to shed light on potential determinants of feeding practices among children above 6 months of age". In this systematic research different databases were used According to results individual factors influencing feeding practices related mainly to mother's attributes, knowledge, perceptions, attitudes, beliefs and skills.<sup>22</sup> Being a housewife was positively associated with exclusive breast-feeding mentioned in a study of Cameroon.<sup>14</sup> Obilade TT explored that knowledge; attitude and practice of EBF were found significantly affected by education and profession. Those with higher level of education were more likely to have a correct knowledge ( $p<0.05$ ).<sup>20</sup>

Kounnavong S also explored that early initiation of breastfeeding was most prevalent among mothers with higher education, those who received antenatal services, and those who delivered in a health facility.<sup>13</sup> According to Kimani-Murage EW factors associated with sub-optimal infant breastfeeding and feeding practices include child's sex; perceived size at birth; mother's marital status, ethnicity; education level; family planning; health seeking behaviour and; neighborhood.

Maternal age was significantly associated with EBF; however, but not associated with breastfeeding initiation mentioned in a study conducted in United States.<sup>15</sup> Brown CR mentioned significant predictors of early cessation of EBF as less education, low income, single motherhood, pre pregnancy obesity, and smoking throughout pregnancy, no early breast contact by the infant and no intention to breastfeed.<sup>17</sup> According to Gupta A children of mothers with higher education and boys were more likely to be started timely complementary feeding than girls.<sup>9</sup>

## CONCLUSION

The study concluded that breast feeding practices in the studied area was not upto the mark. There is a need to strengthen ongoing programs to promote EBF and the continuation of BF for a duration of two years and beyond. Behavior change communication (BCC) and counseling should be provided to pregnant women during antenatal visits. Employers should be encouraged to have day care centers for nursing mothers so that mothers who go back to paid employment do not have to stop breastfeeding.

## AUTHOR'S CONTRIBUTION

All the authors contributed equally to the study.

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**Conflict of interest:** The authors declare no conflict of interest.

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**Address for Correspondence:**

**Dr Zubia Qureshi**, National Emergency Operations Centre, Federal EPI Building (Block-D) Chak Shahzad, Islamabad-Pakistan

**Cell:** +92 336 573 9095

**Email:** drzubiaqureshi@gmail.com