

## Exclusive Breastfeeding among Women Attending Primary Health Care Centers in Karbala City

Dr. Iman Mahdi Mohammed<sup>1\*</sup>, Dr. Ruaa Mahmood Hasson<sup>2</sup>,  
Dr. Wasan Mahdi Abbas Aljallad<sup>3</sup>

### Author's Information

1.M.B.Ch.B, H.D.F.M; Specialist  
Physician-Family Medicine; Al  
Naser PHCC-Karbala city-Iraq

2.M.B.Ch.B, H.D.F.M; Specialist  
Physician-Family Medicine; Al  
Naser PHCC-Karbala city-Iraq

3.M.B.Ch.B, H.D.F.M; Specialist  
Physician-Family Medicine;  
Martyrs' of Imam Ali PHCC-  
Karbala city-Iraq

Corresponding author:  
Dr. Iman Mahdi Mohammed  
[dremanmahdi@gmail.com](mailto:dremanmahdi@gmail.com)

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### ABSTRACT

**Background:** The breastfeeding is considered as an indicator of national public health development. The exclusive breastfeeding is essential in child nutrition required for growth, development and prevention of diseases.

**Objective:** To measure the prevalence of exclusive breastfeeding among sample of women attending primary health care centers in Karbala city in addition to find out the obstacles of exclusive breast feeding.

**Patients and methods:** Present study was a descriptive cross sectional study that carried out in Immunization unit of two primary health care centers (Al Naser and Martyrs' of Imam Ali primary health care centers) of Karbala Health Directorate, Ministry of Health, Karbala city, Iraq through duration of six months from first of February to 31st of July, 2023 on sample of one hundred and twenty women brought their children for immunization. The interview with selected mothers was done in private room and barriers of exclusive breastfeeding were recorded by researchers as perceived by selected mothers without any intervention by them.

**Results:** The exclusive breastfeeding was shown by 33.3% of women. The common barrier of exclusive breastfeeding as perceived by women was feeling of insufficient milk (29.2%), followed by; dissatisfaction of infants growth (15.8%), crying infant (15%), etc. Significant determinant factors related exclusive breastfeeding are age of mothers, monthly income, antenatal care visits and guidance to exclusive breastfeeding by health care workers.

**Conclusions:** The prevalence of exclusive breastfeeding in Karbala city is low. The common barrier of exclusive breastfeeding as perceived by mothers is feeling of insufficient milk.

**Keywords:** Primary health care centers, Exclusive Breastfeeding, Barriers.

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## **1. INTRODUCTION**

Early life nutrition is essential in influencing long term health and development of infants. Poor nutritional habits of children had a negative impact on their health, growth and development in addition to high chance of morbidity and mortality (1). The exclusive breastfeeding (EBF) is defined as a practice by which the infant receives only breast milk from the mother or a wet nurse or expressed breast milk, without food or drink in first six months of life and allowing intake of oral rehydration solution, drops, syrups, vitamins, minerals and medicines). Exclusive breastfeeding is important nutrition source for infants to acquire better growth and development with high prevention from different infectious diseases (2). The world health organization (WHO) recommended the exclusive breast feeding in first six months to reach the optimal growth, development and better health of infants. Subsequently, the infants must be supplemented with complementary food achieve the needed nutritional requirements, with continuous breastfeeding for two years or more. The non-exclusive breastfeeding is defined as infants feeding with breast milk along with infant formula, food, drink and water in first six months of life (3). Otherwise, the non-exclusive breastfeeding practices are highly accompanied with child malnutrition and high co-morbidity and mortality rates (4). Many benefits of breastfeeding were reported for young children and women (5). The breastfeeding leads to both short and long term benefits for infants like low risk of diarrhea and pneumonia, decreasing risk of future obesity and diabetes mellitus and improving intellectual ability of children (6-8). Regarding women, the breastfeeding has a positive effect on their health status by lowering incidence of breast cancer, type 2 diabetes mellitus, hypertension and myocardial infarction (9). The breastfeeding must be regarded as a modifiable health behavior to enhance healthy life for both child and mother (10). Although WHO recommendations, the national exclusive breastfeeding prevalence rate in different developing countries was very low and ranged between 33-39% within fifteen years among infants less than six months age (11). Globally, the World Health Assembly at 2012 set a global target for six months EBF at 50% by 2025 in order to improve exclusive breastfeeding rates among infants less than six months (12). The United Nations at 2015 linked the breastfeeding to sustainable development goals (13).

However, only 44% of infants aged 0–6 months all over the world were exclusively breastfed over the period of 2015-2020 (14). The global prevalence of EPF is variable between various countries according to economic status. In low middle income countries (LMIC), 4% of children are never breastfed, while in high income countries, 21% of children never breastfed (15). A study conducted in 57 LMICs found that global prevalence of early breastfeeding initiation was 51.9%, while EBF prevalence was 45.7% under 6 months and 32.0% for EBF at 4–5 months. In same study, it was found that the Eastern Mediterranean region had a 5.3% decrease of EBF under 6 months (16). Multiple previous literatures explored the obstacles and determinant factors of exclusive breastfeeding in various regions the world (17-19). Many socio-demographic factor like increasing age of mother, marital status, educational level and economic status (17, 20), children age (21), gender of the infant (22) and size of family (23) were regarded as contributing factors for the duration of breastfeeding. Generally, many authors found significant variations in obstacles as well as determinant factors according differences in geographic region, economic status and sociocultural factors of society (24-26). In Iraq, sanction, wars and conflicts in last decades led to increasing of infants formula feeding and reduction in exclusive breast feeding (27). The prevalence of exclusive breastfeeding in Iraq was various in different country geographic regions; in northern Iraq was (26.5%) (28), middle Iraq was (49.6%) (29) and Southern Iraq was (39.1%) (30). These differences are related to discrepancy in culture and socioeconomic status between different Iraq regions. However, all these rates from Iraq are low and urged us to explore the obstacles in reaching the target prevalence of EBF. This study aimed to measure the prevalence of exclusive breastfeeding among sample of women attending primary health care centers in Karbala city in addition to find out the obstacles of exclusive breast feeding.

## **2. METHODOLOGY**

The current study design was a descriptive cross sectional study that carried out in Immunization unit of two primary health care centers (Al Naser and Martyrs' of Imam Ali primary health care centers) of Karbala Health Directorate, Ministry of Health, Karbala city, Iraq through duration of six months from first of February to 31st of July, 2023. The study population was all women presented to PHCCs for immunization of their children during

study duration. Women in reproductive age with children aged 6-15 months attending PHCs for immunization were the inclusion criteria. Exclusion criteria were older age women, younger or older age children women with chronic debilitating disorders and women refuse to participate. According to Iraqi national immunization program, the mothers brought children to immunization unit of PHCs at age of six, nine and fifteen months. The ethical considerations were implemented according Helsinki Declaration regarding ethical approval of Health authorities; oral informed consent of selected women and confidentiality of data. A convenient sample of one hundred and twenty women was selected after eligibility according to inclusion and exclusion criteria.

Data were collected by the researchers directly from eligible women and recorded in a pre-constructed questionnaire which was prepared and designed by the researchers and validated by expert panel of specialists in the field. The questionnaire included the following: general characteristics of women (age, marital status, educational level, occupation, number of family members, monthly income, child age and child sequence), antenatal care and breastfeeding characteristics (antenatal care visits, number of antenatal care visits, EBF guidance during ANC visits by healthcare workers, exclusive breastfeeding, initiation time of BF after delivery and feeding types) and barriers of exclusive breastfeeding. The exclusive breastfeeding is defined as feeding of infants in first six months by breast milk only without food, drink or water [2]. The interview with selected mothers was done in private room in PHCs near the immunization unit. The barriers of exclusive breastfeeding were recorded by researchers as perceived by selected mothers without any intervention by them.

The age of participant women was categorized into four categories, while the marital status was categorized into married or divorced. The educational level of mothers was classified into (illiterate, read & write and primary level). The occupation of women was categorized into (housewife, governmental employee and private sector employee). Number of family members was categorized as less than six members and six or more members. Monthly income of families was classified into three groups (<250,000 ID, 250,000-500,000 ID and >500,000 ID). The antenatal care visits were classified into less than 4 visits and 4 and more visits.

The collected data were statistically analyzed by the Statistical Package for Social Sciences (SPSS) software version 22. Chi square and Fisher's exact tests were applied for categorical variables accordingly. Level of significance (P. value) was regarded statistically significant if it was 0.05 or less.

### 3. RESULTS

This study included one hundred and twenty women presented with mean age of (28.7 years) and ranged between 17-47 years; 45% of them were at age group of 20-29 years. The majority of studied women were married (95.8%). The educational level of women was distributed as followings; illiterate (50.8%), read and write (46.7%) and primary level (2.5%). Housewife occupation was reported for 98.4% of studied women. More than half of women are belonged to families of 6 and more family members. The common monthly income was less than 250,000 ID (84.2%). Mean children age was (11.9 months); 61.7% of children were at age group of 12-15 months. The commonest child sequence was the 5th child and more, All these findings are summarized in (**Table 1**). The ANC was reported by 66.7% of the participant women; 58.8% of those attended ANC had less than 4 ANC visits and 41.2% of them had 4 or more ANC visits. Guidance regarding EBF for women attended ANC was reported in 47.5% of them. The exclusive breastfeeding was shown by 33.3% of women. The initiation of breastfeeding was never done by 25.8% of women, BF started in less than one hour for 41.7% of women and started in more than one hour for 32.5% of them. Feeding types of children were classified as EBF (33.3%), BF in less than 6 months (22.5%), mixed feeding (18.4%) and formula feeding (25.8%) (**Table 2**). The common barrier of exclusive breastfeeding as perceived by women was feeling of insufficient milk (29.2%), followed by; dissatisfaction of infants growth (15.8%), crying infant (15%), inadequate education at ANC (12.5%), Lack access to educated Media (12.5%), poor maternal nutrition (5.8%), cesarean surgery (4.2%), nipples problem (3.3%) and infant refuse lactating (1.7%) (**Table 3**). There was a highly significant association between increased age of women and EBF ( $p < 0.001$ ). A significant association was observed between low monthly income of families and EBF ( $p = 0.004$ ). No significant differences were observed between EBF and non-EBF women regarding marital status, educational level, occupation, number of family members, child age and child sequence, in all these variables, P. value  $> 0.05$ , not significant, (**Table 4**).

A statistically significant association was found between increased number of ANC visits by women and EBF (P. value=0.004). A highly significant association was observed between positive guidance regarding EBF at ANC of women and EBF (p<0.001). No significant differences were observed between women with EBF and those with non-EBF regarding ANC visit (p=0.33) (**Table 5**).

Table 1. General characteristics of women and children.

Variable		No.	%
Age (years)	<20	9	7.5
	20-29	54	45.0
	30-39	46	38.3
	≥40	11	9.2
Marital status	Married	115	95.8
	Divorced	5	4.2
Educational level	Illiterate	61	50.8
	Read & write	56	46.7
	Primary level	3	2.5
Occupation	Housewife	118	98.4
	Governmental employee	1	0.8
	Private sector	1	0.8
Number of family members	Less than 6	48	40.0
	Six or more	72	60.0
Monthly Income ( x 1000 IQD)	<250	101	84.2
	250 -500	16	13.3
	>500	3	2.5
Child age (months)	6-11	46	38.3
	12-15	74	61.7
Child sequence	First	17	14.2
	Second	16	13.3
	Third	15	12.5
	Fourth	22	18.3
	Fifth or more	50	41.7
Total		120	100.0

Maternal age (mean ± SD: 28.7 ± 6.8). Child's age (mean ± SD: 11.9±3.4)  
 IQD: Iraqi Dinar, SD: standard deviation

Table 2. Antenatal care and breastfeeding characteristics.

Variable		No.	%
Antenatal care visits	Yes	80	66.7
	No	40	33.3
Number of ANC visits	<4 visits	47	58.8
	≥4 visits	33	41.2
EBF guidance during ANC visits	Yes	38	47.5
	No	42	52.5
Exclusive breastfeeding	Yes	40	33.3
	No	80	66.7
Initiation Time of BF after Delivery	Never	31	25.8
	Less than one hour	50	41.7
	More than one hour	39	32.5
Feeding types	EBF	40	33.3
	Breastfeeding<6 months	27	22.5
	Mixed feeding	22	18.4
	Artificial feeding	31	25.8
Total		120	100.0

ANC Antenatal care, EBF: exclusive breast feeding

Table 3. Barriers of exclusive breastfeeding.

Barriers	No.	%
Insufficient milk	35	29.2
Dissatisfaction of infants growth	19	15.8
Crying Infant	18	15.0
Inadequate education at ANC	15	12.5
Lack access to educated Media	15	12.5
Poor maternal nutrition	7	5.8
Cesarean surgery	5	4.2
Nipples problem	4	3.3
Infant refuse latching	2	1.7
Total	120	100.0

Table 4. Distribution of women's and children's general characteristics according to EBF prevalence.

Variable		EBF (n=40)		Non-EBF (n=80)		p. value
		No.	%	No.	%	
Age (years)	<20	1	2.5	8	10.0	<0.001 <sup>S</sup>
	20-29	11	27.5	43	53.8	
	30-39	17	42.5	29	36.3	
	≥40	11	27.5	0	-	
Marital status	Married	38	95.0	77	96.3	0.74 <sup>NS</sup>
	Divorced	2	5.0	3	3.8	
Educational level	Illiterate	21	52.5	40	50.0	0.96 <sup>NS</sup>
	Read & write	18	45.0	38	47.5	
	Primary level	1	2.5	2	2.5	
Occupation	Housewife	40	100.0	78	97.5	0.6 <sup>NS</sup>
	Governmental employee	0	-	1	1.3	
	Private sector	0	-	1	1.3	
Number of family members	<6 members	13	32.5	35	43.8	0.23 <sup>NS</sup>
	≥6 members	27	67.5	45	56.3	
Monthly Income (x 1000 IQD)	<250	40	100.0	61	76.3	0.004 <sup>S</sup>
	250 -500	0	-	16	20.0	
	>500	0	-	3	3.8	
Child age (months)	6-11	16	40.0	30	37.5	0.79 <sup>NS</sup>
	12-15	24	60.0	50	62.5	
Child Sequence	First	4	10.0	13	16.3	0.91 <sup>NS</sup>
	Second	6	15.0	10	12.5	
	Third	5	12.5	10	12.5	
	Fourth	8	20.0	14	17.5	
	Fifth or more	17	42.5	33	41.3	

S=Significant. NS=Not significant.

Table 5. Distribution of ANC characteristics according to EBF prevalence.

Variable		EBF (n=40)		Non-EBF (n=80)		P. value
		No.	%	No.	%	
Antenatal care visits	Yes	29	72.5	51	63.8	0.33 <sup>NS</sup>
	No	11	27.5	29	36.3	
Number of ANC visits (n=29)	<4 visits	11	37.9	36	70.6	0.004 <sup>S</sup>
	≥4 visits	18	62.1	15	29.4	
EBF guidance during ANC visits (n=29)	Yes	24	82.8	14	27.5	<0.001 <sup>S</sup>
	No	5	17.2	37	72.5	

S=Significant, NS=Not significant.

#### 4. DISCUSSION

Exclusive breastfeeding is an essential part of child nutrition program due to its long term effects on nutrition and health of children. Maternal education regarding exclusive breastfeeding is the cornerstone in women's health education in primary health care centers (31). In current study, the prevalence of exclusive breastfeeding among women attending primary health care centers in Karbala city was (33.3%). This prevalence is close to results of Sdeeq et al (28) cross-sectional study in Northern Iraq which reported a prevalence of (26.5%) for EBF. However, our study EBF prevalence is lower than results of previous Iraq studies; in middle Iraq by Alwash et al (29) was (49.6%) and in Southern Iraq by Hameed et al (30) was (39.1%). These differences in EBF prevalence in same country might be related to differences in socioeconomic status and culture between different cities in addition to differences in sample size and methodology between different studies. Our study prevalence of EBF is also lower than EBF prevalence of (66.7%) reported by Gohal et al (32) cross-sectional study on 400 women attended PHCs. On other hand, our study EBF prevalence is close to results of Farag et al (33) cross-sectional study on 400 women attending PHCs in Cairo city-Egypt which reported that 28% of mothers exclusively breastfed infants. In Iran, a systematic review and meta-analysis study by Behzadifar et al (34) found that prevalence of EBF was (53%). In high income countries, by 6 months of age, the prevalence of EBF was 18%

and for any BF was 45%, while at 12 months, the BF decreased to 29% (35). Many factors related to this discrepancy in exclusive breastfeeding prevalence between countries commonly the socioeconomic status, culture, educational status of mothers and health education efforts (36). In present study, the common barrier of exclusive breastfeeding as perceived by women was feeling of insufficient milk (29.2%), followed by; dissatisfaction of infants growth (15.8%), crying infant (15%), inadequate education at ANC (12.5%), lack access to educated Media (12.5%), etc. These findings are in agreement with results of different literatures such as Sdeeq et al 28 cross-sectional study in Iraq and Khatun et al (37) study in Bangladesh which all stated that common barriers of exclusive breastfeeding as perceived by mothers were insufficient milk, growth failure of infants and cesarean surgery. In Egypt, a cross-sectional study carried out by Kamal et al (38) reported that common barriers of exclusive breastfeeding as perceived by mothers were lactation problems and returning of mothers to work with difficulties in childcare. Present study showed a highly significant association between increased age of women and EBF ( $p < 0.001$ ). This finding coincides with results of Moiseeva et al (39) study in Russia which documented that increased age of mothers influenced better nutrition of children especially regarding exclusive breastfeeding. However, our study finding regarding age is inconsistent with results of Sankar et al (40) community-based observational study in India which found that younger age mothers are associated with exclusive breastfeeding. This inconsistency might be attributed to differences in sociocultural and educational level of women between different countries. Our study showed a significant association between low monthly income of families and EBF ( $p = 0.004$ ). This finding is similar to results of Temple et al (41) cohort study in Canada which reported that tendency to EBF was higher among poor women. Inconsistently, Casmir Ebirim et al (42) cross sectional study in Nigeria stated that higher monthly income of women was significantly associated with exclusive breastfeeding. Current study found a significant association between increased number of ANC visits by women and EBF ( $p = 0.004$ ). This finding is consistent with results of Biks et al (43) community-based nested case-control study in Ethiopia which revealed that antenatal care visits had a positive impact of woman's desire for exclusive breastfeeding. Our study also showed a highly significant association between positive guidance regarding EBF at ANC of women and EBF

( $p < 0.001$ ). Similarly, Nabakwe et al (44) cross-sectional survey revealed that health care worker advice at ANC regarding EBF is very important to encourage mothers for future exclusive breastfeeding.

## 5. CONCLUSIONS

In conclusion, the prevalence of exclusive breastfeeding in Karbala city is low. The common barrier of exclusive breastfeeding as perceived by mothers is feeling of insufficient milk. Common determinant factors related exclusive breastfeeding are age of mothers, monthly income, antenatal care visits and guidance to exclusive breastfeeding by health care workers. This study recommended more public efforts to encourage women for early initiation of exclusive breastfeeding and urging health care workers for health promotion programs regarding breastfeeding. Moreover, further national large sized studies on exclusive breastfeeding should be supported.

### **Ethical Approval:**

All ethical issues were approved by the author. Data collection and patients enrollment were in accordance with Declaration of Helsinki of World Medical Association , 2013 for the ethical principles of researches involving human. Signed informed consent was obtained from each participant and data were kept confidentially.

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