Original Article

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Infants and Young Children Feeding Practices Among Mothers Attending Primary Health Care Centers in Basrah

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ABSTRACT

Background: Malnutrition accounts for sixty percent of annual deaths among children under five years in developing countries, attributed to inappropriate feeding practices, including non-diverse and insufficient feeding. Improving the nutrition of children under five is a top priority for human development in these regions. Caregivers' knowledge, attitudes, and practice of young child feeding are essential factors for child health and growth. **Aim**: The primary aim of this study was to assess infants and young children feeding practice among mothers attending primary health care centers in Basrah. **Methods**: A cross-sectional study was conducted involving 250 mothers attending five primary health care centers in Basrah. Data were collected through face-to-face interviews with participants by the investigators, using a specially prepared questionnaire. **Results**: The study included 250 children under the age of two years, with 76% of the children being less than one year old. Only 100 (40%) of the mothers breastfed their last child at the time of the study. Among the 250 mother-child pairs who participated, 101 (63.9%) mothers exclusively breastfed. Among 86 mothers with children aged 12-24 months, 63 (73.3%) of them continued breastfeeding. The initiation of complementary feeding (CF) was ideal in only 32.5% of the respondents, with the majority initiating CF before six months. **Conclusions**: Infant and young child feeding practices were poor in this study. There is a need to promote optimal feeding practices during postnatal care and to utilize mass media to emphasize the importance of complementary feeding practices, especially for mothers with lower educational status.

Keywords: Infants, young children, feeding practices, Basrah.

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INTRODUCTION

Undernutrition is the leading cause of mortality among children under five worldwide. Inappropriate infant and young child feeding practices are key contributors to undernutrition and optimal growth during the first two years of life.[1] According to the 2020 World Health Organization (WHO) report, undernutrition was linked to 45 % of deaths among children under five years of age in low- and middle-income countries.[2]

Breastfeeding is one of the most effective practices to keep optimal child health. If exclusive breastfeeding (EBF) were practiced at 50 % worldwide, the lives of 823,000 (13.8% of deaths) children under two years of age could be saved annually.[3] Despite this, only about 35% of infants are exclusively breastfed during the first four months of life. Complementary feeding (CF) often begins too early or too late, leading to nutritionally deficient and unsafe foods.[4] CF, as defined by WHO, is the addition of energy and non-energy-containing fluids, non-human milk, and semi-solids or solids to children's nutrition. The target range for CF is 6-23 months.[5] WHO recommends sufficient intake of iron-rich foods and a balanced diet with the least recommended frequency.[6] In the developing world, stunting at one year of age could be reduced by 20% if children receive balanced nutrition.[7] After two years of life, interventions aimed at improving nutrition do not significantly impact health parameters.[8] Caregivers' knowledge, attitude, and practices regarding young child feeding are crucial for child health and growth.[9] The quantity and quality of food, frequency and timeliness of feeding, food hygiene, and feeding during or after illness are all critical components of an optimal CF program.[10] In Iran, Iraq, Palestine, and Libya there has been a decrease in the prevalence of EBF over time. Conversely, Saudi Arabia, Egypt, Kuwait, and Lebanon have reported early introduction of infant formula. Additionally, Saudi Arabia United Arab Emirates, Pakistan, and Lebanon have been observed to introduce solid foods to children between 4–6 months of age. The estimated weighted regional averages for stunting, wasting, and underweight were 20.3%, 8.9%, and 13.1%, respectively.[11] There is a need for more data from Iraq on nutrition practices and their associations. This will aid healthcare professionals in providing effective counseling to mothers. The objective of this study was to assess the feeding practices of Infants and young children's among mothers attending primary health care centers in Basrah.

MATERIALS AND METHODS

This cross-sectional study was conducted over three months, from January 2023 to April 2023. Consent from the Basrah Directorate of Health to implement the study was obtained prior to commencement. A total of 250 mothers (with children aged below two years) attending five primary health care centers in Basrah were included in the study. The list of primary health care centers (PHCCs) in Basrah was obtained from the Department of PHC (a total of 134 PHCCs). The health centers were divided into urban and rural categories, and five centers were selected conveniently: Al-Asmai, Abi-Alkhaseeb, Shat-el-Arab, Al-Hota, and Al-Shaheed Izz-al-Deen Saleem. These centers operate primary health care services five days week (Sunday, Monday, Tuesday, Wednesday, Thursday), from 8:30 AM to 2:00 PM. The first 15-20 mothers meeting the inclusion criteria were included. Accordingly, 45-55 mothers participated from each of the five centers. A designed questionnaire was used to gather data, with items selected and modified from published studies. The data were collected through direct meetings with the mothers by the investigators. The questionnaire included two sections: (1) Child and maternal socioeconomic characteristics (child's age, gender, place of delivery, type of delivery, birth order, family type, income, mother's age, mother's education, mother's occupation, and number of antenatal care (ANC) visits) and (2) Infant and young child feeding practices. The data were analyzed using the statistical package for Social Sciences (SPSS) version 22. Descriptive statistics, including socioeconomic characteristics and feeding practices, were presented as frequencies and percentages.

RESULTS

Table 1 presents child and maternal socioeconomic characteristics. The study included 250 children under the age of two years, with 76% of the children being less than one year old, while 24% were between one and two years old .The sample included 132 (52.8%) males and 118 (47.2%) females. The majority of children (92.4%) were born in hospitals, while the remaining 7.6% were born at home. More than half of the mothers (62%) had a normal delivery, while 38% underwent a cesarean section. The distribution of children according to birth order was as follows: 26.0% were first-born, 22.4% were second-born, and 51.6% were third-born or more. About two-thirds of the children's families (60.8%) were extended families, while the remaining 39.2% were nuclear families. Less than half of the families (48.0%) had a family income between 500,000-1 million Iraqi dinars, and 45.6% had an income of less than 500,000 Iraqi dinars. More than half of the mothers (57.2%) were between 20-29 years old, while 34.9% were aged 30-39 years. About 40.8% of the mothers had 7-12 years of education, while 32.4% had

less than 6 years of education .The majority of mothers (76.0%) were housewives, while only 14.0% were government employees. More than 85% of the mothers visited the health center; in total (54.8%) they had fewer than four visits, while 29.6% had >4 visits and 15.6% of the mothers did not visit the health center during their last pregnancy.

Only 100 (40%) of the mothers breastfed their last child at the time of the study. Among the 250 respondents, 196 (78.4%) initiated breast feeding within one hour after birth, while 54(21.6%) started breastfeeding after one hour. Only 17 (6.8%) of the mothers did not give colostrum. About 78 (31.2%) of the mothers provided pre-lacteal feeds to their children. More than half of the mothers (127 or 62.6%) breastfed their children on demand, while only 19 (9.4%) breastfed more than eight times a day. Among the 250 mother-child pairs who participated in the study, 101 (63.9%) mothers exclusively breastfed. Among 86 mothers with children aged 12-24 months, 63 (73.3%) continued breastfeeding.

About 44.6% of children were initiated on complementary feeds before six months, while 54 (32.5%) were initiated at six months. In contrast, 38 (22.9%) were initiated on complementary feeds after six months. The complementary feedstuffs provided included fortified pap (53.7%), pap only (30.7%), formula milk (8.4%), and adult diet (7.2%). More than half of the children (108 or 65%) were fed complementary feeds twice a day. Table 2.

Child's age, mother's education, and number of ANC visits were found to be significant factors associated with weaning practices ($p < 0.05$). Other variables, such as child's gender, place of delivery, birth order, family type, family income, mother's age, and mother's occupation, showed no significant association with weaning practices ($p > 0.05$). Table 3.

Table 1: Child and Maternal Socioeconomic Characteristics

Variable	Frequency	%
Child's Age (Months)		
< 6	95	38.0
6-12	95	38.0
13-18	47	18.8
19-24	13	5.2
Child's Gender		
Male	132	52.8
Female	118	47.2
Place of Delivery		
Home	19	7.6
Hospital	231	92.4
Type of Delivery		
Vaginal	155	62.0
C/S	95	38.0
Birth Order		
First	56	22.4
Second	65	26.0
Third or More	129	51.6
Family Type		
Nuclear	98	39.2
Extended	152	60.8
Family Income (IQD)		
Less than 500,000	114	45.6
500,000-1 Million500,000-1 Million	120	48.0
1-2 Million1-2 Million	16	6.4
Mother's Age		
< 20	8	4.8
20-29	95	57.2
30-39	58	34.9
≥ 40	5	3
Mother's Education (Years)		
≤ 6	81	32.4
7-12	102	40.8
≥ 13	67	26.8
Mother's Occupation		
Housewife	190	76.0
Governmental Employee	35	14.0
Self-Employed	18	7.2
Student	17	2.8
Number of ANC Visits		
< 4	137	54.8
≥ 4	74	29.6
No ANC	39	15.6

Table 2: Participants' feeding practices

Variable	Frequency	%
Current Feeding Type		
Breastfeeding	100	40%
Bottle Feeding	53	21.2%
Mixed	87	38.8%
Breastfeeding Start After Delivery		
During 1 Hour	196	78.4%
After 1 Hour	54	21.6%
Gave Colostrum		
Yes	233	93.2%
No	17	6.8%
Gave Pre-Lacteal Food		
Yes	78	31.2%
No	172	68.8%
Exclusive Breastfeeding Among Children Less Than 6 Months (n=158)		
Yes	101	63.9%
No	57	36.1%
Frequency of Breastfeeding/Day (n=203)		
On Demand	127	62.6%
≤ 8	57	28%
≥ 8	19	9.4%
Continued Breastfeeding Among Children 12-23 months (n=86)		
Yes	63	73.3%
No	23	26.7%
Age at Commencement of complementary feeds(months) (n=166)		
< 6 months	74	44.6%
6 Months	54	32.5%
> 6 Months	38	22.9%
Complementary feeds given (n=166)		
Fortified Pap	89	53.7%
Pap Only	51	30.7%
Formula Milk	14	8.4%
Adult Diet	12	7.2%
Frequency of Giving Complementary Feeds (n=166)		
Once a Day	31	18.7%
Twice a Day	108	65.0%
Thrice a Day	25	15.1%
> 3 Times a Day	2	1.2%

Table 3: Relationship between some variables and Weaning Practices

Variable	Weaning Practice			X^2 (Chi-Square)	p-value
	Early n (%)	Early n (%)	Early n (%)		
Child's Age (Months)					
< 6 6-12 13-18 19-24	12 (16.2) 38 (51.4) 19 (25.7) 5 (6.8)	0 (0.0) 37 (68.5) 13 (24.1) 4 (7.4)	0 (0.0) 19 (50.0) 15 (39.5) 4 (10.5)	18.85	0.003
Child's Gender					
Male Female	38 (51.4) 36 (48.6)	31 (57.4) 23 (42.6)	17 (44.7) 21 (55.3)	1.45	0.49
Place of Delivery					
Home Hospital	6 (8.1) 68 (91.9)	1 (1.9) 53 (98.1)	3 (7.9) 35 (92.1)	2.59	0.30
Birth Order					
First Second Third or More	8 (10.8) 18 (24.3) 48 (64.9)	15 (27.8) 14 (25.9) 25 (46.3)	9 (23.7) 7 (18.4) 22 (57.9)	7.617	0.107
Family Type					
Nuclear Extended	35 (47.3) 39 (52.7)	22 (40.7) 32 (59.3)	13 (34.2) 25 (65.8)	1.83	0.407
Family Income (IQD)					
Less than 500,000 500.000-1million 1-2million	31 (41.9) 36 (48.6) 7 (9.5)	18 (33.3) 35 (64.8) 1 (1.9)	19 (50.0) 16 (42.1) 3 (7.9)	6.978	0.129
Mother's Age					
< 20 20-29 30-39 ≥ 40	3 (4.1) 43 (58.1) 24 (32.4) 4 (5.4)	3 (5.6) 31 (57.4) 19 (35.2) 1 (1.9)	2 (5.3) 21 (55.3) 15 (39.5) 0 (0.0)	2.856	0.857
Mother's Education (Years)					
≤ 6 7-12 ≥ 13	27 (36.5) 27 (36.5) 20 (27.0)	18 (33.3) 25 (46.3) 11 (20.4)	4 (10.5) 19 (50.0) 15 (39.5)	10.39	0.034
Mother's Occupation					
House wife Governmental Employee Self- employed Student	61 (82.4) 8 (10.8) 5 (6.8) 0 (0.0)	43 (79.6) 7 (13.0) 2 (3.7) 2 (3.7)	24 (63.2) 7 (18.4) 6 (15.8) 1 (2.6)	9.096	0.122
Number of ANC Visits					
< 4 ≥ 4 No ANC	36 (48.6) 19 (25.7) 19 (25.7)	30 (55.6) 21 (38.9) 3 (5.6)	22 (57.9) 10 (26.3) 6 (15.8)	10.075	0.039

DISCUSSION

In this cross-sectional study, 78.4% of mothers initiated breastfeeding within the first hour after delivery. This is higher than the results reported in Ethiopia and India.[12,13] The discrepancy may be due to the time elapsed between studies, as the number of mothers delivering their babies in hospitals has significantly increased due to the promotion of free delivery services in Iraq, which provides healthcare providers with a good opportunity to promote starting breastfeeding initiation within the first hour after birth. About 63.9% of mothers with children aged less than six months exclusively breastfed their index infant. This practice is lower than findings from previous studies in Ethiopia, Tanzania, and Zambia.[14-16] About 21.2 % of mothers used a bottle to feed their index child, which is not recommended by WHO. A similar finding was reported in previous studies conducted in Ethiopia and India.[17,18] This might be due to a significant number of mothers having poor socioeconomic status and low educational levels. Sixty-three (73.3%) of mothers continued breastfeeding when their children were aged 12 to 24 months, which is lower than the results obtained in Ethiopia.[17] This may correlate with percentage of the mothers who were housewives in Basrah. Contrary to WHO recommendations for the commencement of complementary feeding at six months, (44.6%) of mothers in this study introduced complementary feeds early (before six months), consistent with findings from previous studies conducted in Nepal and Bangladesh, where complementary foods were initiated too early.[19,20] Furthermore, in this study, 32.5% of children were introduced to complementary feeds at six months, which differs from a study in Nigeria (6.2%) and Nepal (55.6%).[5,19] It was also found that 22.9% of mothers delayed the initiation of complementary feeding beyond six months, which is higher than the percentage reported in Nepal (9.6%).[19] This may be due to differences in perceptions and cultural practices regarding appropriate infant feeding practices among different populations. In this study, child's age mother's education, and attending ANC services were significant factors associated with the timely introduction of CF. This finding aligns with studies conducted in Nigeria, Ethiopia, Kenya, Tanzania, Pakistan, and Nepal. [5,17, 21 – 24] This may be because women who attended ANC visits received guidance on infant feeding during their appointments. Additionally, educated mothers may have a better understanding of feeding education than less educated mothers or those without formal education. Educated mothers are also more likely to read books and magazines and have greater exposure to feeding education through mass media than others. Other variables as child's gender, place of delivery, birth order, family type, family income, mother's age, and mother's occupation, showed no significant association with weaning practices, which is consistent with study findings in Nigeria.[5] but contrasts with findings in Ethiopia, where place of delivery, age of the mother, and maternal occupation were statistically associated with complementary feeding practices.[21]

CONCLUSIONS

It is essential to provide proper knowledge and education to mothers and caregivers during postnatal care and to utilize mass media to emphasize the importance of exclusive breastfeeding for the first six months of infants' lives, the advantages of breastfeeding, the potential hazards of feeding infants with formula, the appropriate timing for initiating complementary feeding, and the preparation and practices to prevent malnutrition and improve the health status of children.

REFERENCES

1. World Health Organization. Infant and young child feeding practices: collecting and using data, a step-by-step guide. Geneva: Cooperative for Assistance and Relief Everywhere (CARE); 2010.
2. World Health Organization. Malnutrition. Geneva: WHO; 2020 [cited 2023 Feb 26]. Available from: https://www.who.int/news-room/fact-sheets/detail/malnutrition
3. Victora CG, Bahl R, Barros AJD, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effects. Lancet. 2016;387(10017):475–490.
4. Abera L, Dejene T, Laelago T. Prevalence of malnutrition and associated factors among children aged 6–59 months among rural dwellers of Damot Gale District, South Ethiopia. Community-based cross-sectional study. 2017.
5. Okafoagu NC, Oche OM, Raji MO, et al. Factors influencing complementary and weaning practices among women in rural communities of Sokoto State, Nigeria. Pan Afr Med J. 2017;28:254.
6. World Health Organization. Essential nutrition actions: improving maternal, newborn, infant, and young child health and nutrition. Geneva: WHO; 2013 [cited 2023 Feb 26]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK258729/
7. United Nations Children's Fund. The state of the world's children 2012. New York: UNICEF; 2012.
8. Roberts JL, Stein AD. The impact of nutritional interventions beyond the first 2 years of life on linear growth: a systematic review and meta-analysis. Adv Nutr. 2017;8(2):323–336.
9. Hackett KM, Mukta US, Jalal CS, Sellen DW. Knowledge, attitudes and perceptions on infant and young child nutrition and feeding among adolescent girls and young mothers in rural Bangladesh. Matern Child Nutr. 2015;11(2):173–189.

10. Jones AD, Ickes SB, Smith LE, et al. World Health Organization infant and young child feeding indicators and their associations with child anthropometry: a synthesis of recent findings. Matern Child Nutr. 2014;10(1):1–17.
11. Ibrahim C, Bookari K, Sacre Y, Hanna-Wakim L, Hoteit M. Breastfeeding practices, infant formula use, complementary feeding, and childhood malnutrition: an updated overview of the Eastern Mediterranean landscape. Nutrients. 2022;14:4201.
12. Yonas F, Asnakew M, Wondafrash M, Abdulahi M. Infant and young child feeding practice status and associated factors among mothers of under 24-month-old children in Shashemene Woreda, Oromia Region, Ethiopia. Open Access Libr J. 2015;2:e1635.
13. Ashwinee AR, Deepak BP, Vaishali DP. A study of breastfeeding and complementary feeding practices with emphasis on misconceptions among women with children under two years in rural areas. Int J Med Res Health Sci. 2014;3(4):851–855.
14. Sefene A, Birhanu D, Awoke W, Taye T. Determinants of exclusive breastfeeding practice among mothers of children aged less than 6 months in Bahir Dar City Administration, Northwest Ethiopia. Sci J Clin Med. 2013;2(6):153–159.
15. Maonga AR, Mahande MJ, Damian DJ, Msuya SE. Factors affecting exclusive breastfeeding among women in Muheza District, Tanga, northeastern Tanzania: a mixed-method community-based study. Matern Child Health J. 2016;20:77–87.
16. Katepa-Bwalya M, Mukonka V, Kankasa C, Masaninga F, Babaniyi O, Siziya S. Infant and young child feeding practices and nutritional status in two districts of Zambia. Int Breastfeed J. 2015;10:5.
17. Demilew YM, Tafere TE, Abitew DB. Infant and young child feeding practice among mothers with 0–24-month-old children in slum areas of Bahir Dar City, Ethiopia. Int Breastfeed J. 2017;12:26.
18. Khan AM, Kayina P, Agrawal P, Gupta A, Kannan AT. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi. Indian J Public Health. 2012;56(4):301–304.
19. Shrestha S, Pokhrel M, Mathema S. Knowledge, attitude, and practices among mothers of children aged 6 to 24 months regarding complementary feeding. J Nepal Med Assoc. 2020;58(230):758–763.
20. Paul SK, Islam QR, Roy S, Rudra PK. Complementary feeding practices in under-2 children. Chattagram Maa-O-Shishu Hosp Med Coll J. 2014;13(3):35–41.
21. Gewa CA, Leslie TF. Distribution and determinants of young child feeding practices in the East African region: demographic health survey data analysis from 2008–2011. J Health Popul Nutr. 2015;34:6.
22. Victor R, Baines SK, Agho KE, Dibley MJ. Factors associated with inappropriate complementary feeding practices among children aged 6–23 months in Tanzania. Matern Child Nutr. 2014;10(4):545–561.
23. Hasnain S, Majrooh MA, Anjum R. Knowledge and practices of mothers for complementary feeding in babies visiting the pediatrics outpatient department of Jinnah Hospital, Lahore. Biomedica. 2013;29:221–230.
24. Chapagain RH. Factors affecting complementary feeding practices of Nepali mothers for children aged 6 to 24 months. J Nepal Health Res Counc. 2013;11(24):205–207.