

Factors influence Iraqi complementary feeding practices in Hillah City

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ABSTRACT

Introduction: Complementary feeding starts when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore, other foods and liquids are needed, along with breast milk. Evidence for the optimal timing for introducing specific individual foods and the type of food is generally lacking, and recommendations thus vary between countries, reflecting cultural factors and food availability.

Objective: to measure the time of introducing complementary feeding for children and to study factors associated with inappropriate CF practices among women visiting primary healthcare centres in Al-Hilla city.

Methods: A descriptive cross-sectional study was conducted on 1174 mothers with children between 6-24 months attending 26 primary healthcare centres from 2 selected districts in Babil from 1 August 2020 to 31 January 2021. Data was collected using a structured questionnaire through direct in-terviews.

Results: Out of 1,174 participant children, 935 (79.6%) initiated complementary feeding at 4-6 months of age, 208 (17.7%) started complementary feeding after six months of age, while only 31 (2.6%) started their first food before four months of age. About one-third of the mothers completed secondary school, 93.4% were housewives, and 63.5 lived in urban areas. The mother was the main person who fed the baby at home in 77.9%. More than half of the babies (55.4%) stopped breastfeeding before six months of age. The primary reason for introducing complementary feeding was the child's need for extra food (60.9%).

Conclusion: Most children receive complementary feedings, mainly vegetable soup and rice water, at an appropriate time. The gap in suboptimal complementary feeding practices is attributed to poor maternal nutritional knowledge rather than food availability.

Key words: knowledge, complementary feeding, Iraq.

INTRODUCTION

The World Health Organisation defines complementary feeding (CF) as the process initiated when breast milk is no longer sufficient to meet infants' nutritional needs; therefore, other foods and liquids are required along with breast milk.^[1]

The period of complementary feeding (CF) is one of children's rapid growth and development in which children are more prone to nutrient deficiencies and excesses. This period witnesses

many changes in diet and exposure to new food items and tastes. While extensive research exists on breast milk and breast milk substitutes (BMS), the crucial CF period has been largely overlooked. This gap in knowledge includes the types of foods introduced and the long-term impact on children's health, development, and behaviour.^[2]

Literature reviews generally lack the optimal timing for introducing specific individual foods, so the recommendations differ between countries, reflecting factors related to food

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culture. The majority of countries recommend against using whole cow's milk for children in their first year of life. Most health authorities advised introducing iron via CF, although specific recommendations differ according to the population and risk of iron deficiency.^[3,4] Infants' metabolism of non-milk food needs functional maturation of gas-trointestinal and renal systems. Neuro-developmental changes are necessary for safe and effective progression to a mixed diet.^[5]

Malnutrition of children is still the most intractable public health trouble in most developing countries.^[6] Ideal CF practices by caregivers remain challenging for most households, mainly in low-income families.^[7] CF can play an important role in preventing malnutrition. It has been stated that introducing CF can reduce under-nutrition-related deaths among children less than five years by 100,000 cases.^[8]

The European Society for Pediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) recommends starting CF between 17 and 26 weeks of the infant's life. However, 39 % of physicians do not follow this recommendation.^[9]

The child's family environment plays a crucial role in shaping his lifelong eating habits, and early exposure to diverse tastes and flavours during childhood influences their future dietary choices.^[10]

In Iraq, many studies have addressed this issue. In Erbil, a study found that 49.5 % of children used CF, 88.5 % had adequate frequency, and 59% had adequate quality.^[11] In Karbala, 65.9% of the surveyed mothers thought that CF should be started at the age of 6 months, 54 % began CF for their children before six months, and college-graduated mothers started CF before the age of 6 months more frequently than illiterate mothers.^[12] Similarly, in Babil, 71.9 % of babies received their first CF at six months, and 27.9% received it between 3-5 months.^[13] In Basrah in 2005, the vast majority of children in the survey received complementary food at around the age of 6 months.^[14] An online study conducted among

medical staff mothers who lived in and outside Iraq has shown that 73 % of them started CF at around the age of 4-6 months.^[15] The mother's age and education level play a role in good practice regarding CF.^[16]

In 2017, a descriptive study conducted in Turkey showed that 76.1% of women followed the WHO's recommendations of giving solid and semi-solid food at 6th month of age, and 88.3 % followed WHO's recommendations for minimal meal frequency (MMF).^[17] In Iran, a study showed that the minimal diet diversity (MDD) was adequate in 42.3% of children, MMF in 42.7%, and the minimal acceptable diet (MAD) in 30.9%.^[18]

In the Eastern Mediterranean region (EMR), malnutrition is affected by the country's development. The introduction of solid-semi, solid, or soft food (ISSS) was higher in Palestine (89.6%) and lower in Afghanistan (61%). Adequate MAD was 39% in Palestine compared to 9%, 15.4%, and 15.5 % in Somalia, Yemen, and Afghanistan, respectively. MDD was highest in Oman, 67.2 %, and lowest in Yemen, 21.3%. Similarly, MMF is highest in Palestine, 78.8, and lowest in Sudan, 42.1%.^[19] In rural Egyptian communities, CF is introduced in 63.6 % of children aged 6-9 months.^[20]

After searching the literature, I found that studies addressing the time, type, and factors associated with introducing complementary feeding in Hilla City are scarce. Such studies are helpful for health authorities to improve the nutritional status of Iraqi children by enhancing CF practices. This study aims to measure the time of introducing complementary feeding for children and to study factors associated with inappropriate CF practices among women visiting primary health care centres in Al-Hillah City.

METHODS

Setting and study design: A descriptive cross-sectional study was conducted on 1174 mothers with children aged between 6 and 24 months who attended 26 primary healthcare centres from two selected districts in Babil

from 1 August 2020 to 31 January 2021. Data was collected through direct interviews using a structured questionnaire.

Ethical consideration: The research protocol was approved by the Community Council of the Arab Board for Health Specialization in Iraq and the Ethical Research Committee of the Babil Health Directorate. Verbal informed consent was obtained from each participating mother after explaining the objectives of this study. The participation was voluntary, and all the collected data were kept confidential.

Definition of cases; inclusion and exclusion criteria: We included all mothers of children aged 6 to 24 months who attended the selected PHCCs for reasons related to their children, including vaccination. Mothers who refused to participate were excluded from the study.

Sampling: Hilla City comprises two health districts: the first and the second. These districts collectively encompassed 48 Primary Health Care Centers (PHCCs), comprising 22 main centers and 26 subcenters. For our study, we selected 26 centres—12 main centres and 14 subcentres—from both districts using a simple random sampling method. Due to the restrictions on movement imposed during the COVID-19 pandemic, we could not include all centres. To enrol participants, the authors conducted regular visits to each PHCC four days a week, from 09:00 am to 12:00 pm, over six months. Researchers visited each centre at least twice to collect the required samples.

Data collection and the questionnaire: The researchers adopted a structured questionnaire from previous research conducted in Babil.^[13] The questionnaire was written in Arabic. It had many sections; the family socio-demographic included the mother's age, employment status, residence, parity, spacing between the last two children, type and structure of the family, maternal education level, husband's education level, and socioeconomic status. The child's demographic section included the child's sex, age, weight, daycare centre attendance, who feeds the baby at home, and the feeding type. The third section was about the complementary feeding included the age of starting

CF, the time of ceasing breastfeeding if the child was weaned, the child's medical problems, the reason for introducing CF, health education of mothers about CF, sources of advice to initiate CF, types of CF, and the frequency of giving CF per day.

Pilot study: We applied the questionnaire on a pilot of 20 mothers to ensure the questions' validity, reliability, and understandability, and to estimate the time needed for each participant to answer the questionnaire. The questionnaire was modified accordingly. Data from this pilot were not included in the final analysis of the study.

The authors collected data through private, direct interviews with the mothers. To avoid any misdirection of the answers, the researchers asked similar questions in similar ways to all participants. The time spent for each interview ranged between 10 to 20 minutes for each mother. Children's Age determination and anthropometric measurements: In most cases, children's ages were obtained from the child health cards. For those without written evidence, we depended on the direct recall of the date of birth by the mother or respondent. The children's weight was taken and plotted on the chart (weight for age) using a Z-score chart (WHO chart).

For the sake of this study, family types are classified into nuclear where the two parents and their children living apart from their extended family.^[21] On the other hand the extended family consists of several generations of people and can include biological parents and their children as well as in-laws, grandparents, aunts, uncles, and cousins.^[22]

Data management and analysis plan: We used the Statistical Packages for Social Sciences-version 27 (SPSS-27) to analyse the data. Data were presented using simple measures of frequency, percentage, mean, median, standard deviation, and range (minimum-maximum values). The significance of the difference in percentages (qualitative data) was tested using the Pearson Chi-square test (X^2 -test). Statistical significance was considered whenever the p-value was equal to or less than 0.05.^[23, 24]

Table 1 | The distribution by socio-demographic characteristics of the studied mothers in Hillah City 2020.

Characteristics	No	%	
Mother's age (years)	<20 years	80	6.8
	20-24	301	25.6
	25-29	383	32.6
	30-34	283	24.1
	≥35 years	127	10.8
Mean±SD (Range)	27.3±5.5 (16-45)		
Mother education	Illiterate	57	4.9
	Primary school	237	20.2
	Intermediate school	193	16.4
	Secondary school	400	34.1
	College & higher education	287	24.4
Husband education	Illiterate	16	1.4
	Primary school	137	11.7
	Intermediate school	187	15.9
	Secondary school	489	41.7
	College & higher education	345	29.4
Mother employment	Employed	78	6.6
	Housewife	1096	93.4
Socio-economic status	Low (0-4)	48	4.1
	Middle (5-8)	523	44.5
	High (9-12)	603	51.4
Family structure	Single parent	31	2.6
	Two parents	1143	97.4
Family type	Nuclear	486	41.4
	Extended	688	58.6
Address	Urban	745	63.5
	Rural	429	36.5
Parity	Primipara	320	27.3
	Para 2	335	28.5
	Para 3	260	22.1
	Para 4	164	14.0
	Grand multipara (5& more)	95	8.1
Spacing between children*	Yes	434	50.8
	No	420	49.2

*The last two children (2-3)

RESULTS

In the current study, 1174 mothers were recruited, and their socio-demographic data are shown in **Table 1**. Their mean age was 27.3 ± 5.5 years, ranging from 16 to 45 years.

Table 2 demonstrates the children's characteristics; their mean age is 14.3 ± 6.0

Table 2 | The distribution of the studied sample by demographic characteristics of children, Hillah City 2020

Characteristics	No.	%	
Child age (months)	6-11	452	38.5
	12-17	265	22.6
	18-24	457	38.9
	Mean±SD (Range)	14.3±6.0 (6-24)	
	Child sex		
Male	642	54.7	
Female	532	45.3	
Weight for age	Normal	847	72.1
	Underweight	166	14.1
	Severe underweight	26	2.2
	Overweight	128	10.9
	Obese	7	0.6
Attending daycare centre	Yes	33	2.8
	No	1141	97.2
Who feeds the baby at home	Mother	915	77.9
	Father	12	1.0
	Grandmother	145	12.4
	Sister	35	3.0
	Aunt	67	5.7
	Caregiver	-	-
	Others	-	-
Feeding type	Breast	378	32.2
	Bottle	447	38.1
	Mixed	349	29.7

months, ranging from 6 to 24 months. Most babies, 915(77.9%), were fed by their mothers and 145(12.4%) by their grandmothers. At the same time, 12.1%, are fed by their fathers, (35, 3%) by their sisters and (67, 5.7%) by their aunts. The number of children who take exclusive breastfeeding was 378 (32.2%), bottle feeding 447(38.1%), and mixed feeding 349 (29.7%).

Table 3 shows the child and maternal variables regarding complementary feeding. Concerning the time of initiation of complementary feeding, where most of the babies (935, 79.6%) received their first CF at 4-6 months of age, most of the babies (405, 55.4%) stopped breastfeeding

Table 3 | The child and maternal variables regarding complementary feeding

Variable	No	%
Age of initiation of complementary feeding (months)		
<4months	31	2.6
4---6	935	79.6
>6months	208	17.7
Mean±SD (Range)	5.5±1.2 (2-10)	
Median	6.0	
Time to stop breastfeeding (if weaned)		
<6months	405	55.4
6---12	114	15.6
>12months	212	29.0
Child medical problem		
Yes	153	13.0
No	1021	87.0
The reasons for introducing CF		
Complicated condition	119	10.1
Inadequate breast-milk	340	29.0
Child need for extra food	715	60.9
Health education of mothers regarding CF		
Yes	206	17.5
No	968	82.5
Source of advice to initiate CF		
Family	448	38.2
Doctors & health workers	206	17.5
Motherly intuition	520	44.3

below six months of age, 114 (15.6%) babies weaned 6-12 month of age and 212(29%) of babies weaned more than 12 months of age. About the reason for introducing CF, 715 mothers (60.9%) said their children need extra food. Most mothers (968, 82.5%) have no health education about CF, and only a small number (206, 17.5%) received information about CF. The source of advice for mothers to start CF was most commonly from motherly intuition (520, 44.3%).

Table 4 demonstrates items of complementary feeding categories. Vegetable soup was starting complementary feeding in most babies, 439 (37.4%).

Regarding the association between socio-demographic characteristics of the mother and age of initiation of CF, the results in **table 5** showed that there is a statistically significant

Table 4 | The complementary feeding items categories.

Items	No.	%	
Type of CF	Vegetable soup	439	37.4
	Rice-water	235	20.0
	Rice & broth	37	3.2
	Broth	77	6.6
	Eggs	2	0.2
	Rice & yogurt	5	0.4
	Fruits	40	3.4
	Yogurt	3	0.3
	Biscuit	102	8.7
	Cerelac	147	12.5
	Mashed potato/pasta	3	0.3
	Fruit juice	56	4.8
	Porridge (Threed)	23	2.0
Meat soup	5	0.4	
Frequency/ day	Once	390	33.3
	Twice	728	62.2
	Three times	53	4.5

association ($P<0.05$) with the mother's education, husband's education, mother's employment, socioeconomic status, family structure, residence, parity, and spacing between last two children. In contrast, the association between mother age, family type, and CF initiation age were not statistically significant.

Concerning the association between socio-demographic features of the child and age of initiation of CF, the results in **table 6** showed that a statistically significant association with Z score of weight for age, attending day care centre, person feeding the baby at home, the medical problem of the child, reason for introducing, source of advice to initiate. At the same time, there were no statistically significant between child age, sex, feeding type, time to stop breastfeeding (if weaned), mother health education regarding CF and age of initiation of CF.

DISCUSSION

Inadequate nutrition during the first two years of life is a significant and preventable risk factor for pediatric morbidity and mortality.

Table 5 | Maternal variables in relation with age of initiating CF

Variables		Age of CF initiation (months)						P value
		<4months		4-6		>6months		
		No	%	No	%	No	%	
Mother age (years)	< 20 years	3	3.8	63	78.8	14	17.5	0.121
	20-24	10	3.3	252	83.7	39	13.0	
	25-29	7	1.8	312	81.5	64	16.7	
	30-34	8	2.8	214	75.6	61	21.6	
	≥ 35 years	3	2.4	94	74.0	30	23.6	
Mother education	Illiterate	5	8.8	39	68.4	13	22.8	0.001*
	Primary school	13	5.5	189	79.7	35	14.8	
	Intermediate school	2	1.0	159	82.4	32	16.6	
	Secondary school	10	2.5	317	79.3	73	18.3	
	College & Higher educate	1	.3	231	80.5	55	19.2	
Husband education	Illiterate	-	-	13	81.3	3	18.8	0.040*
	Primary school	10	7.3	100	73.0	27	19.7	
	Intermediate school	3	1.6	155	82.9	29	15.5	
	Secondary school	13	2.7	389	79.6	87	17.8	
	College & Higher educate	5	1.4	278	80.6	62	18.0	
Mother employment	Employed	1	1.3	49	62.8	28	35.9	0.0001*
	Housewife	30	2.7	886	80.8	180	16.4	
Socio-economic status	Low (0-4)	1	2.1	36	75.0	11	22.9	0.014*
	Middle (5-8)	23	4.4	412	78.8	88	16.8	
	High (9 -12)	7	1.2	487	80.8	109	18.1	
Family structure	Single parent	2	6.5	19	61.3	10	32.3	0.032*
	Two parents	29	2.5	916	80.1	198	17.3	
Family type	Nuclear	12	2.5	376	77.4	98	20.2	0.179
	Extended	19	2.8	559	81.3	110	16.0	
Residence	Urban	10	1.3	591	79.3	144	19.3	0.0001*
	Rural	21	4.9	344	80.2	64	14.9	
Parity	Primipara	6	1.9	273	85.3	41	12.8	0.044*
	Para 2	10	3.0	268	80.0	57	17.0	
	Para 3	5	1.9	205	78.8	50	19.2	
	Para 4	5	3.0	121	73.8	38	23.2	
	Multipara (5 & more)	5	5.3	68	71.6	22	23.2	
Spacing of last 2 children	Yes (2-3years)	4	.9	341	78.6	89	20.5	0.002*
	No	21	5.0	321	76.4	78	18.6	

*Significant difference between percentages using Pearson Chi-square test at 0.05 level.

While food availability is not the primary cause of malnutrition, community feeding habits, lack of awareness about age-appropriate food, and improper feeding practices contribute to a child's poor nutritional status.^[25]

In our study, most participants (79.6%) initiated complementary feeding (CF) between 4-6 months of age. A previous study in Babil

showed that 71% of participants started CF at six months.^[13] Similarly, most children in Basrah^[14] and Karbala^[12] began CF at the age of 6 months. Our results align with studies from four Arabic countries –KSA, Kuwait, Lebanon and UAE– where CF typically starts at 4-6 months; however, in Egypt and Bahrain, it begins between 6-9 months.^[26]

Table 6 | Child variables in relation with age of initiating CF

Variables		Age of CF initiation (months)						P value
		<4months		4-6		>6months		
		No	%	No	%	No	%	
Child sex	Male	12	1.9	521	81.2	109	17.0	0.133
	Female	19	3.6	414	77.8	99	18.6	
Child age (months)	6 -11	8	1.8	378	83.6	66	14.6	0.120
	12 -17	10	3.8	214	80.8	41	15.5	
	18 -24	13	2.8	343	75.1	101	22.1	
Weight for age	Normal	23	2.7	705	83.2	119	14.0	0.0001*
	Underweight	3	1.8	108	65.1	55	33.1	
	Severe underweight	-	-	9	34.6	17	65.4	
	Overweight	5	3.9	106	82.8	17	13.3	
Attending day care center	Yes	-	-	16	48.5	17	51.5	0.0001*
	No	31	2.7	919	80.5	191	16.7	
Who feed the baby at home	Mother	22	2.4	722	78.9	171	18.7	0.026*
	Father	-	-	7	58.3	5	41.7	
	Grandmother	8	5.5	123	84.8	14	9.7	
	Sister	-	-	28	80.0	7	20.0	
	Aunt	1	1.5	55	82.1	11	16.4	
Feeding type	Breast	13	3.4	310	82.0	55	14.6	0.095
	Bottle	9	2.0	343	76.7	95	21.3	
	Mixed	9	2.6	282	80.8	58	16.6	
Time to stop breastfeeding (if weaned)	< 6 months	8	2.0	309	76.3	88	21.7	0.408
	6-12	2	1.8	96	84.2	16	14.0	
	> 12 months	6	2.8	165	77.8	41	19.3	
Child medical problem	Yes	4	2.6	81	52.9	68	44.4	0.0001*
	No	27	2.6	854	83.6	140	13.7	
Reasons to introducing CF	Complicated condition	3	2.5	56	47.1	60	50.4	0.0001*
	Inadequate breast milk	13	3.8	289	85.0	38	11.2	
	Child need for extra food	15	2.1	590	82.5	110	15.4	
Mother health education regarding CF	Yes	5	2.5	170	82.5	31	15	0.32
	No	26	2.7	765	79.0	177	18.3	
Source of advice to initiate CF	Family	25	5.6	339	75.7	84	18.7	0.0001*
	Doctor & health worker	-	-	171	83.0	35	17.0	
	Motherly intuition	6	1.2	424	81.5	90	17.3	

*Significant difference between percentages using Pearson Chi-square test 0.05 level.

In neighbouring countries, CF usually starts at around 5.8 months in Turkey^[17] and six months in Iran.^[27] We found no significant association between the mother's age and the CF initiation time, which is consistent with a previous study in Babil.^[13] However, a study in five European countries found a strong correlation between early CF and young

maternal age.^[28]

Regarding maternal education, our study found that mothers with lower education levels tend to start CF earlier, which is consistent with findings from Karbala.^[12] However, in Malaysia, educated mothers were 3.5 times more likely to introduce solid food early than illiterate mothers.^[29] A study in Kuwait found

no significant association between maternal education level and the timing of beginning CF.^[30] Our study also observed a significant association between the early introduction of solid food and lower paternal education, as evidenced in Bangladesh.^[31]

Maternal employment status has a significant effect on a child's life. Our study found a significant association between maternal employment and delayed CF introduction, with working mothers typically introducing solid foods after six months of age. In Australia, mothers who returned to work within 6-12 months after delivery were less likely to introduce CF early.^[32] In contrast, other studies concluded that mothers working outside the home depend more on early CF.^[29,33] A study done in the Kingdom of Bahrain revealed that the working status of mothers did not affect CF's introduction time.^[34] In our study, most mothers were employed and did not take maternity leave, only birth leave, so they had no time to give CF at the appropriate time, causing a delay in the introduction of CF.

We observed that mothers from higher socioeconomic backgrounds tended to start CF at four months or later, while those from middle and low socioeconomic backgrounds had poorer CF practices, less than four months and more than six months, respectively. This result aligns with findings from Iran^[27] and India^[35] but contradicts a study from five European countries, which found that higher parental socioeconomic status correlated with later CF introduction.^[28] It is worth mentioning that a study from China found no significant association between the time of initiating CF and being a low-income family.^[36]

Family structure also influenced CF timing, with single mothers more likely to introduce CF earlier than four months; in contrast, the child of two parents received CF at an appropriate time. Studies from Rotterdam in the Netherlands^[37] and Australia^[32] reported similar results. Increased stress from lack of paternal support might explain this behaviour.

Our results showed that children from rural

areas started CF earlier than those from urban areas, which is consistent with findings from Egypt.^[38] However, a Lebanese study has shown that mothers living in urban areas start to give CF earlier than those in rural areas.^[39]

Mother's parity also played a role, with primiparous and para 2 mothers more likely to introduce CF at the recommended age compared to those with higher parity who either introduced CF before the age of 4 months or later than six months. Similar results were reported in a study from the Netherlands.^[37] In contrast, an Indian study has found that mothers who had 2 to 5 children or more tend to introduce CF at the recommended time compared with mothers of first-born children.^[40] A cohort study done in Western Australia shows no association between the timing of CF and parity.^[41]

In our study, child weight was significantly associated with CF-initiating time, with normal weight for age babies typically receiving CF between 4-6 months, underweight babies receiving it after six months, and overweight babies receiving it before four months, in line with findings from Brazil^[42] and the USA.^[43] Studies enrolled in a systemic review have also found a clear association between CF-initiating time and childhood BMI.^[44]

In our study, attending daycare centres was associated with later CF introduction, later than six months, contrary to findings of a population-cohort study from the Netherlands, where children attending daycare centres were more likely to start CF very early, less than three months.^[37]

Most children (77.9%) in our study received their initial CF between 4-6 months from their mothers, while grandmothers tended to introduce CF before the age of four months, consistent with findings from Bahrain.^[34] There was no significant relationship between feeding type (formula feeding vs. breastfeeding) and CF-initiating time. However, other studies have found that formula-fed infants receive CF earlier and that exclusive breastfeeding delays CF introduction.^[28, 32]

We found a high statistical significance between child medical problems and delayed CF introduction, where children with chronic medical illnesses were more prone to start CF after six months of age. This result was consistent with that reported from Rotterdam,^[37] which found that mothers of infants at high risk of allergic diseases were more likely to delay CF introduction beyond six months, aligning with WHO recommendations to delay initiation of complementary food beyond the age of 6 months to prevent asthma and allergic disease.^[45]

Three main reasons for introducing CF were identified in our study: the child's need for extra food between 4-6 months, inadequate breastfeeding so mothers initiating CF before the age of four months, and concerns about complicated conditions forcing mothers to start CF after the age of six months. These findings align with studies from Australia,^[41] where mothers started CF before 17 weeks because they thought that breast milk was not sufficient to feed infants and the Rotterdam study, which stated that mothers delayed CF beyond six months of age for infants with chronic medical illness.^[37]

The mother's health education about CF showed no significant association with CF-introducing time in our study, consistent with a study in rural Bangladesh. However, a study in Georgia found a direct relation between maternal knowledge and CF-initiating time.^[46, 47]

In our study, the main CF advice source was often maternal intuition, with doctors and health workers advising CF between 4-6 months. A study in Bahrain found no significant association between the source of information and CF timing.^[34]

CONCLUSIONS

- More than half of participant mothers ceased breastfeeding their children before they reached six months of age and began CF at the proper time, 4 to 6 months.

- Mothers who were single, had low education levels, middle socioeconomic status, lived in rural areas, and exclusively breastfed their babies were more likely to initiate CF early, before four months. On the other hand, maternal employment, low socio-economic status, a child attending a daycare centre or having chronic illness were the factors associated with delaying CF introduction to beyond six months of age.
- Parental education, high socioeconomic status, living in urban areas, and primiparity were all associated with appropriate time to initiate CF (at 4-6 months of age).
- The risk of underweight and severe underweight was associated with the late introduction of CF, while early initiation was linked to overweight and obesity.
- Poor maternal knowledge regarding nutritional attitudes was identified as the main issue in our society, rather than food availability.

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Abbreviations list: Breast milk substitutes (BMS), Complementary feeding (CF), Coronavirus disease 2019 (COVID-19), Eastern Mediterranean Region (EMR), European Society for Pediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN), Kingdom of Saudi Arabia (KSA), Minimal acceptable diet (MAD), Minimal diet diversity (MDD), Minimal meal frequency (MMF), Primary Health Care Centres (PHCCs), Solid-semi, solid, or soft food (ISSS), Statistical Packages for Social Sciences- version 27 (SPSS-27), United Arab Emirates (UAE), World Health Organization (WHO).

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