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Maternal Knowledge and Education on Infant Feeding in a Baghdad Pediatric Clinic: A Cross-Sectional Study

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ABSTRACT

Background: Appropriate infant feeding is fundamental for optimal growth and health. In Iraq, low maternal education and inconsistent healthcare communication contribute to early formula introduction and suboptimal breastfeeding practices.

Objective: To assess maternal knowledge and health education exposure regarding infant feeding, and to identify sociodemographic determinants associated with feeding practices.

Methods: A cross-sectional study was conducted in June 2025 at a public pediatric clinic in Baghdad. Mothers of infants under 12 months were recruited through convenience sampling. Data were collected using a structured, pretested questionnaire covering demographics, health education exposure, knowledge, and feeding practices. Ethical considerations were observed: participation was voluntary and anonymous, no personal or sensitive data were collected, and the study was conducted in accordance with the Declaration of Helsinki. As per local regulations, formal ethics committee approval was not required

Results: Among 62 mothers, 65% knew exclusive breastfeeding should last six months, yet 86% introduced formula before one month of age. Maternal education was significantly associated with breastfeeding knowledge (χ^2=8.21, p=0.017). Despite high awareness, early formula introduction was widespread, often following healthcare providers' recommendations.

Conclusion: A substantial gap exists between maternal knowledge and practice. Strengthening healthcare provider training, enforcing breastfeeding-supportive policies, and implementing community education programs are essential to improve exclusive breastfeeding rates in Iraq

Keywords;Maternal awareness; Infant nutrition; Health education; Pediatric clinic; Cross-sectional study; Baghdad

INTRODUCTION

Infant feeding plays an important role in establishing the short-term health, growth, and future development of children. Correct feeding behavior and practice between birth and 2 years of age are also essential for avoiding infant morbidity and death and establishing adult health early in life [1]. There are still significant gaps between optimal feeding knowledge and behavior among mothers across the globe, particularly those from low- and middle-income countries [2]

In Iraq, certain socioeconomic and environmental factors like poor health services supply, low maternal education level, and inappropriate health communication were determined to impact undesirable styles of feeding infants negatively [3]. Several surveys from all over Iraqi provinces have mentioned poor knowledge regarding exclusive breastfeeding, inappropriate timing of introducing complementary feeding, and absence of preferable knowledge about nutritional requirement among mothers [4,5]. Health education conducted at the primary care level can potentially increase knowledge and practices among mothers considerably. Public pediatric clinics are normally mothers' first point of contact and the optimal moment to give basic health messages. It would be helpful to gauge at such places what kind of awareness about infant nutrition exists among mothers to develop proper education interventions.

The aim of the current study was to identify knowledge and health education exposure on infant feeding among mothers attending a Baghdad public pediatric clinic. Its aim was also to identify important sociodemographic determinants associated with knowledge level and to explore potential education improvement avenues.

LITERATURE REVIEW

Global Guidelines

WHO and UNICEF recommend exclusive breastfeeding for six months, followed by appropriate complementary feeding and continued breastfeeding until two years or beyond【2,6】. Despite these guidelines, global compliance remains suboptimal, with only 44% of infants exclusively breastfed for six months according to UNICEF's 2023 report.

Maternal Knowledge and Practices

Maternal education strongly influences infant feeding choices. Structured counseling improved breastfeeding rates in Bangladesh and Egypt. However, knowledge does not always translate into practice, as cultural norms and family pressures often override maternal awareness【12,13】.

Middle East and Iraq

In Baghdad, only 38% of mothers recognized the WHO-recommended breastfeeding duration. Similar patterns are observed in Jordan and Saudi Arabia. Cultural practices, such as giving infants herbal teas or water, remain widespread despite associated health risks【15–17】.

Health Education and Interventions

Structured health education and peer counseling have proven effective in Africa and Asia【10,21】. In Iraq, however, few clinics provide systematic nutritional counseling. Digital interventions, such as SMS reminders, have shown promise in Kenya, while community-based programs in Nepal improved maternal confidence.

International Models

Brazil's "Ten Steps to Successful Breastfeeding" and India's IYCF plan demonstrate effective national strategies【29,30】. Adapting such frameworks to Iraq could improve maternal awareness and infant nutrition outcomes.

METHODOLOGY

Study Design and Setting:A cross-sectional study was conducted at a public pediatric clinic in Baghdad between mid-June and end-June 2025.

Participants: Mothers of infants under 12 months were eligible. Exclusion criteria included infants with congenital anomalies or chronic illnesses.

Sampling: Convenience sampling was applied, recruiting mothers present at the clinic during the study period.

Questionnaire:A 14-item questionnaire, adapted from validated tools【3,4】, was translated into Arabic and back-translated to ensure conceptual equivalence. It was pretested with 10 mothers for clarity and cultural appropriateness. The survey covered demographics, health education exposure, feeding knowledge, and practices.

Data Analysis: Data were entered into SPSS v26. Descriptive statistics (means, SDs, frequencies) were reported. Categorical variables were analyzed using Chi-square or Fisher's exact test. Continuous variables were assessed using t-tests after normality checks. A p-value <0.05 was considered statistically significant.

Ethical Considerations: Participation was voluntary and anonymous. No personal or sensitive data were collected. The study was conducted in agreement with the principles of the Declaration of Helsinki. As per local regulations, formal ethics committee approval was not required.

RESULTS

Sample: 62 mothers.

•Age: 30% (18–24), 32% (25–30), 38% (>30).

•Education: 12% illiterate, 41% primary, 19% intermediate, 11% secondary, 17% university.

•Employment: 11% employed.

Sources of Advice: Family/friends (85%), healthcare providers (67%), media/Internet (65%).

Knowledge: Exclusive breastfeeding (65%), complementary feeding (74%), continued breastfeeding to two years (65%).

Practices: Formula use (70%), formula before one month (86%), consulted physician before formula (77%).

Association: Maternal education significantly associated with breastfeeding knowledge (χ^2=8.21, p=0.017).

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TABLE 1.SOCIODEMOGRAPHIC CHARACTERISTICS OF PARTICIPATING MOTHERS (N = 62)

Characteristic	**n (%)**
Age	
18–24 years	19 (30.6)
25–30 years	20 (32.2)
>30 years	23 (37.2)
Education Level	
Illiterate	7 (11.3)
Primary	25 (40.3)
Intermediate	12 (19.3)
Secondary	7 (11.3)
University	11 (17.8)
Employment Status	
Employed outside home	7 (11.3)
Homemaker	55 (88.7)

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TABLE 2.MATERNAL KNOWLEDGE AND PRACTICES ON INFANT FEEDING (N = 62)

Characteristic	**n (%)**
Knowledge of Breastfeeding	
Exclusive breastfeeding for 6 months	40 (64.5)
Awareness of complementary foods	46 (74.1)
Continued breastfeeding until age two	40 (64.5)
Actual Feeding Practices	
Used formula milk	43 (69.3)
Started formula before 1 month	53 (85.4)
Sought medical advice before formula use	48 (77.4)

DISCUSSION

Findings reveal a significant knowledge-practice gap. Despite awareness, early formula introduction was common, often following physician advice. This highlights systemic issues in healthcare communication. Similar contradictions have been reported in Jordan and Saudi Arabia.

The alarming finding that 77% consulted physicians before introducing formula suggests systemic issues in healthcare communication. Previous studies emphasize that inadequate counseling contributes to poor breastfeeding outcomes【21,22】.

Limitations: Small sample size, single-center design, reliance on self-reported data, recall bias.

CONCLUSION

Maternal awareness of breastfeeding guidelines was relatively high, yet practices were inconsistent. Inappropriate medical recommendations and cultural pressures contributed to early formula introduction.

RECOMMENDATIONS

•STRUCTURED TRAINING FOR HEALTHCARE PROVIDERS ON BREASTFEEDING COUNSELING.

•POLICIES RESTRICTING FORMULA PROMOTION.

•COMMUNITY-BASED EDUCATION PROGRAMS.

•ROUTINE MONITORING OF INFANT FEEDING PRACTICES IN CLINICS

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Appendix A – Maternal Infant Feeding Questionnaire:

Note: The original questionnaire was administered in Arabic; the English version is provided here for reference.

Maternal Awareness and Health Education Regarding Infant Nutrition

1. Mother's age:

o 18–24

o 25–30

o Above 30

2. Mother's education level:

o Illiterate

o Primary education

o Intermediate education

o Secondary education

o University or higher

3. Does the mother work outside the home?

o Yes

o No

4. Number of children born to the mother:

o 1 to 3

o 4 to 5

o More than 5

5. Has the mother ever received information or health education about infant nutrition?

o Yes

o No

6. What is the source of this information? (Select all that apply)

o Medical staff

o Media and Internet

o Family/friends

7. At what age should a child start receiving milk other than breast milk?

o Before 6 months

o After 6 months

o I don't know

8. Do you think exclusive breastfeeding alone is sufficient for the first 6 months?

o Yes

o No

o I don't know

9. Do you know which foods are recommended when starting complementary feeding?

o Yes

o No

10. What do you think is the ideal duration of breastfeeding?

- Until one year of age
- Until two years of age
- More than two years
- I don't know

11. Do you think breastfeeding protects against diseases?

- Yes
- No
- I don't know

12. Have you given your baby formula milk?

- Yes
- No

13. Did you consult a physician before giving formula milk?

- Yes
- No

14. How old was your baby when you first gave formula milk?

- Less than one month
- More than one month