

Breast-feeding and weaning patterns in Benghazi, Libyan Arab Jamahiriya

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أنماط الإرضاع من الثدي والقطام في بنغازي بالجمهورية العربية الليبية
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خلاصة : أجري استقصاء عن طريق المقابلات بين 200 من الأمهات المترددات على عيادة الحالات الطارئة بمستشفى الفاتح للأطفال في بنغازي . ولقد تبين أن 18.5% من الأمهات أرضعن أطفالهن سوائل أخرى غير اللبن مباشرة بعد الولادة ، وأن الإرضاع من الثدي قد بُدئ به بصفة عامة في 90.5% من الحالات . وبعد ثلاثة أشهر وجد أن الإرضاع من الثدي بمفرده قد تواصل في أقل من 30% من الحالات . بينما كانت التغذية المختلطة تعطى في 44 - 71% من الحالات . أما التغذية الإضافية (مع الإرضاع من الثدي أو بدونه) فكانت تعطى في 65 - 97% من الحالات . وكانت الأغذية الإضافية تشمل الأغذية المستعملة محليا مثل عصير الفواكه والخضراوات والرز والبقول المطبوخة والبيض المسلوق في شكل مهروس . ولم يظهر أي ارتباط بين نوع الطعام وبين النوبات المرضية التي تحدث أثناء الطفولة ، بما في ذلك الإسهال والعدوى السفسية الحادة . وفي المقالة تدابير مقترحة لإطالة مدة الإرضاع من الثدي ، وللتغذية الصناعية البديلة (عند اللزوم) ولضمان كفاية التغذية التكميلية .

ABSTRACT An interview survey of 200 mothers attending the emergency service of Al-Fateh Paediatric Hospital. Benghazi. showed that prelacteal feed was given to 18.5% of babies and breast-feeding was ever initiated in 90.5%. After three months exclusive breast-feeding was continued in less than 30%, mixed feeding in 44%-71% and supplementary feeding (with and without breast-feeding) in 65%-97%. Locally consumed food like fruit juice, vegetables, cooked rice and cereals and boiled eggs in mashed form were used as supplementary foods. No association was revealed between the type of feeding and childhood episodes of any illness, including diarrhoea or acute respiratory infection. Measures for prolonged breast-feeding, substitute artificial feeding (when indicated) and supplementary feeding are suggested.

Les pratiques en matière d'allaitement maternel et de sevrage à Benghazi, Jamahiriya arabe libyenne

RESUME Une enquête par interrogations réalisée auprès de 200 mères qui se rendent au service des urgences de l'Hôpital pédiatrique Fateh de Benghazi a montré que le lait colostré était donné aux nourrissons dans 18,5% des cas et que l'allaitement maternel était mis en route dans tous les cas pour 90,5% d'entre eux. Après une période de trois mois, l'allaitement maternel exclusif était poursuivi dans moins de 30% des cas, l'alimentation mixte dans 44-71% des cas et l'alimentation d'appoint (avec ou sans allaitement maternel) dans 65-97% des cas. Les aliments consommés au niveau local tels que les jus de fruit, les légumes, le riz et les céréales cuites ainsi que les oeufs réduits en purée étaient utilisés comme aliments d'appoint. Aucun lien n'a pu être établi entre le mode d'alimentation et les épisodes de maladie, notamment de diarrhée ou d'infection respiratoire aiguë pendant la petite enfance. Des mesures en faveur de l'allaitement maternel prolongé, de l'allaitement artificiel de substitution (si indiqué) et de l'alimentation d'appoint sont suggérées.

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Introduction

Breast-feeding is one of the oldest practices, recommended in the Holy Quran, Biblical records and ancient Hindu scriptures [1,2]. However, there has been increasing concern in recent years about the changing pattern of breast-feeding, particularly in societies in rapid transition [3-7]. Data from 86 countries revealed that there are very large differences in breast-feeding practice between countries, between population groups within countries and within different groups over a period of time [4]. A downward trend in breast-feeding has been noted in widely differing countries of the Middle East, especially in urban areas where mothers with raised socioeconomic status resort to bottle-feeding quite early [6-8]. Over the past three decades, the Libyan Arab Jamahiriya has undergone such a rapid socioeconomic transformation that the practice of breast-feeding was likely to be influenced. An earlier study in Benghazi in 1981 showed that only 54.8% of mothers breast-fed for more than 6 months [9]. Re-assessment was considered essential to have the factual knowledge of the current situation, and to recommend measures for prolonged breast-feeding to substitute artificial and supplementary feeding.

Subjects and methods

Benghazi is the second largest city and its population has grown more than 10 times, from 60 000 in 1984 to 632 466 in January 1992. During 1991 there were 15 928 live births of which 50.7% were males. More than 95% of births took place at Al-Jamahiriya Maternity Hospital, Benghazi. The infant mortality rate in 1991 was 57.6 per 1000 live births.

Al-Fateh Paediatric Hospital in Benghazi is a teaching hospital for Al-Arab Medical University, and has been serving Benghazi and surrounding areas since 1968 for outdoor and indoor medical care services. During 1992, a total of 7048 children were admitted, of whom 58% were males and 42% females.

The present study was conducted during the period from 1st June to 31st August 1992, and included 200 consecutive babies attending outdoor emergency services for the first time with mild to moderate illness. A senior house surgeon interviewed the mothers using a pretested questionnaire regarding prelacteal, breast, artificial and supplementary feeding at various periods for babies ranging in age from 1 month to 24 months. Of the 200 babies, 128 (64%) were males. By age, 124 (62%) were under six months, 64 (32%) were between 6 and 12 months and 12 (6%) were more than 12 months. The variables under investigation included prelacteal feeds, breast-feeding, artificial feeding and supplementary foods.

Results

Observations have been presented in tabular form. Table 1 shows introduction of prelacteal feeds, breast-feeding, artificial feeding and supplementary food along with age and sex of the babies. Table 2 shows mode of feeding according to baby's age in months. Table 3 shows the type of supplementary foods used and Table 4 depicts childhood illness in relation to type of feeding.

Table 1 Biological and feeding characteristics of children at Al-Fateh Paediatric Hospital, Benghazi, 1992

| Variable | No. | % |
|---|----------------------|-------|
| <i>Sex</i> | | |
| Total | 200 | 100.0 |
| Male | 128 | 64.0 |
| Female | 72 | 36.0 |
| <i>Present age (in months)</i> | | |
| <3 | 28 | 14.0 |
| 3-5 | 49 | 24.5 |
| 6-9 | 40 | 20.0 |
| 10-12 | 40 | 20.0 |
| 13-24 | 43 | 21.5 |
| <i>Use of prelacteal feed</i> | | |
| Glucose water | 27 | 13.5 |
| Honey/gammela | 10 | 5.0 |
| None | 163 | 81.5 |
| <i>Time of introducing breast-feeding after birth</i> | | |
| <12 hours | 130 | 65.0 |
| 12-23 hours | 11 | 5.5 |
| 24-47 hours | 12 | 6.0 |
| 48-71 hours | 11 | 5.5 |
| 72-95 hours | 4 | 2.0 |
| 96-120 hours | 13 | 6.5 |
| None (feeding artificial) | 19 | 9.5 |
| <i>Age of starting artificial feeding</i> | | |
| Birth | 19 | 9.5 |
| < 1 month | 49 | 24.5 |
| 1-3 months | 68 | 34.0 |
| 4-6 months | 18 | 4.0 |
| 7-9 months | 6 | 3.0 |
| 10-12 months | 1 | 0.5 |
| Not yet | 39 | 19.5 |
| <i>Age of introduction of supplementary solid foods</i> | | |
| < 3 months | 5 (20) ^a | 17.9 |
| 3-5 months | 32 (49) ^a | 65.3 |
| 6-9 months | 33 (40) | 82.5 |
| 10-12 months | 39 (40) | 97.5 |
| 13-24 months | 40 (43) | 93.0 |

Note. Brackets include total number of children in each age group

Discussion

Of 200 consecutive children included in the study 128 (64%) were males and 72 (36%) were females. These proportions were similar to those of admissions. It is noted that the proportion of male children being admitted to the hospital (58%) was significantly higher than observed among live births (51%) in Benghazi during 1992. No definite causes for this are known, but further investigation of factors such as higher male susceptibility or male sex preference, is needed on a prospective basis.

Prelacteal feeds (Table 1)

In the study group 37 (18.5%) infants were given prelacteal feeds in the form of glucose water, honey or *gammela* (extract of the leaves of an indigenous plant mixed with sugar and water). It was encouraging to note that the proportion of prelacteal feeds had dramatically fallen from 94% in 1979 (9) to its current level.

Time of initiation of breast-feeding (Table 1)

Although a large number of babies (65.0%) were put to the breast within 12 hours of birth, for 25.5% it was delayed by 12 to 120 hours. Another 9.5% of children were bottle-fed from birth. There was a definite change towards earlier starting of breast-feeding compared to only 2.8% within 12 hours in 1979 [9]. However, it is highly desirable that breast-feeding should be initiated as soon after birth as possible, preferably within the first half an hour. In order to facilitate this, the practice of rooming-in should be adopted in maternity hospitals.

Duration of breast-feeding

Although 90.5% of mothers started with exclusive breast feeding (Table 1), yet at

Table 2 Mode of feeding by baby's age, Benghazi, 1992

| Baby's age (months) | Breast-feeding | | Artificial feeding | | Mixed feeding | | Total | |
|---------------------|----------------|------|--------------------|------|---------------|------|-------|-----|
| | No. | % | No. | % | No. | % | No. | % |
| <3 | 7 | 25.9 | 8 | 29.0 | 12 | 44.4 | 27 | 100 |
| 3-6 | 5 | 10.4 | 5 | 10.4 | 38 | 79.2 | 48 | 100 |
| 7-9 | 7 | 17.9 | 8 | 20.5 | 24 | 61.5 | 39 | 100 |
| 10-12 | 9 | 21.9 | 3 | 7.3 | 29 | 70.7 | 41 | 100 |
| 13-24 | 11 | 24.4 | 3 | 6.7 | 31 | 68.9 | 45 | 100 |
| All ages | 39 | 19.5 | 27 | 13.5 | 134 | 67.0 | 200 | 100 |

Note. Percentages are out of total children in each age group

Table 3 Type of food material used as supplementary food by 149 mothers in Benghazi, 1992

| Food | Mothers | |
|-----------------------------|---------|------|
| | No. | % |
| Fresh fruits and vegetables | 108 | 72.5 |
| Rice | 97 | 65.1 |
| Eggs | 84 | 56.4 |
| Cereals | 83 | 55.7 |
| Meat | 36 | 24.2 |
| Almond | 11 | 7.4 |
| Commercial foods | 27 | 18.1 |

Note. Total responses were 446 because more than one type of food was used by most mothers

any subsequent age the proportion was only one-quarter or less. Mixed feeding (breast plus artificial) was practised by most mothers (61.5% to 79.2%) starting from 4 months to 24 months after birth.

Exclusive artificial feeding remained the mode for between 6.7% and 20.5% after 3 months of age. The majority of mothers fed their babies on demand without regard for interval or frequency. In the present study artificial feeding, with or

without breast-feeding, was introduced by 34.0% of mothers within 1 month, and also by 34.0% within 3 months (Table 1). The source of milk supply for artificial feeding was stated as market by 84% of mothers, dairy farm by 13% and free gift from maternal and child health centre by 3%. In 1979 a higher proportion of younger and low parity mothers had often fed their babies artificially than had older and high parity women [9]. The two age-groups of younger and older mothers probably represented two different cohorts, and in future the rate of artificial feeding if not checked was likely to increase along with the entry of more younger women to the motherhood pool.

Our results are similar to those reported earlier from Benghazi, Sudan, Saudi Arabia and other developing countries [3,8,9,10,11]. In Saudi Arabia, the duration of breast-feeding was associated with maternal characteristics, family income, type of delivery and use of contraceptives [3]. Similar changes were anticipated among Libyan women in the near future.

Supplementary foods

In the study supplementary food included all meals given to the child besides breast-

Table 4 Childhood illness: experience and type of feeding in Benghazi, 1992.

| Childhood illness | Breast-feeding | Mixed feeding | Artificial feeding | No. | All % |
|-----------------------------------|----------------|---------------|--------------------|-----|-------|
| All cases | 39 | 134 | 27 | 200 | 100 |
| Any illness (episodes) | | | | | |
| 0 | 13 | 21 | 5 | 39 | 19.5 |
| 1 | 12 | 56 | 7 | | |
| 2 | 7 | 29 | 10 | | |
| 3 | 2 | 8 | 1 | | |
| 4-6 | 5 | 20 | 4 | | |
| 1 or more | 26 | 113 | 22 | 161 | 80.5 |
| Mean per child | 1.46 | 1.78 | 1.85 | | |
| Diarrhoea episodes | | | | | |
| 0 | 16 | 58 | 14 | 88 | 44.0 |
| 1 | 11 | 40 | 7 | | |
| 2 | 7 | 18 | 2 | | |
| 3 | 4 | 8 | 2 | | |
| 4-6 | 1 | 10 | 2 | | |
| 1 or more | 23 | 76 | 13 | 112 | 56.0 |
| Mean diarrhoea episodes per child | 1.10 | 1.12 | 1.00 | | |
| Acute respiratory infection | | | | | |
| Yes | 10 | 40 | 8 | 58 | 29.0 |
| No | 29 | 94 | 19 | 142 | 71.0 |
| Mean attack per child | 0.26 | 0.30 | 0.30 | | |

milk, cow's milk powder and fresh mammalian milk. Babies who were being given supplementary foods amounted to 17.9% for those who were below 3 months of age, 65.4% were from 3 months to 5 months, 82.5% from 6 months to 9 months and 97.5% between 10 and 12 months (Table 1). In the Benghazi study, 38.4% of infants were given supplementary foods before 6 months of age [9]. In Khartoum, Sudan, supplementary food was introduced by 76% to 91% of mothers before 6 months of age [3]. The timing of supplementary foods is of critical importance for the health and well-being of the child. On the one hand, before 6 months, breast-feeding offers general protection to children from diarrhoeal

disease and other infections. In addition, delay in introduction of other foods offers some protection. On the other hand, after 4-6 months, growth cannot be sustained on breast milk alone. According to WHO, the International Paediatric Association and other bodies, introduction of supplementary foods should commence at 4-6 months of age.

The supplementary foods commonly used by mothers in the study (Table 3) included fresh fruits and vegetables, rice, eggs, cereals, meat, almond and commercial foods [12]. The purpose of supplementary food is to transfer the child from breast milk to family diet. Cultural influence plays a major role in the decision about which

foods are to be introduced and at what age. The supplementary food practices have been surveyed in most of the Arab countries [5,11,12]. The general pattern in the present study is largely the same as in corresponding socioeconomic strata.

Childhood illness

Children who had any illness in general, diarrhoea or acute respiratory tract infections accounted for 80.5%, 56.0% and 71.0% respectively (Table 4). However, no statistically significant difference was observed between the type of feeding and childhood illness experience. No reason is known, yet recall bias and small sample size wide coverage by safe water supply, better personal and community hygiene and other conditions could be possible factors for such results.

Further investigations are needed to confirm the association, if any, between the type of feeding and occurrence of illness, diarrhoea and acute respiratory infections.

Comments and recommendations

In this study of mothers of 200 babies attending Al-Fateh paediatric hospital emergency services were interviewed regarding child feeding practices. The data showed that although 90% of mothers started with breast-feeding, artificial feeding with or without breast-feeding was introduced early by a large number of women. Most babies commenced with fruits and vegetables, rice, eggs, cereals, almonds and commercial foods.

Taking the factors in the present study and the Libyan situation into consideration, implementation of the following recommendations is suggested:

1. Medical personnel, from consultants to primary health care workers, need specific training in the management of breast-feeding, overcoming lactational problems and in weaning techniques.
2. Hospital practice must be changed so that babies are roomed-in and put on the breast within half an hour of birth.
3. Health education about breast-feeding should be strengthened through health institutions, voluntary organizations and mass media.
4. Promotion of breast-feeding should be a major goal of all health personnel. At the same time, the importance of fresh mammalian milk and commercial formulas as valuable nutritional supplements, and in certain circumstances as effective replacements of human milk when essentially needed, should not be ignored.
5. Establishment of breast-feeders associations at the community level, where mothers can teach each other the techniques of successful breast-feeding, is required.
6. Creation of favourable attitudes and conditions is suggested for working women to breast-feed in the place of work.
7. Infant-milk companies should direct their promotional activities at physicians and not at the public. Advertisement of breast-milk substitutes must be banned.
8. In addition to the breast or artificial feeding, supplementary foods rich in proteins and other nutrients consisting of mainly locally produced/consumed foods should be introduced twice a day starting from 4 months of age and 2-4 times a day from 6 months of age.
9. Weaning should normally be started by 12 months, using all foods consumed

by the family 4 to 6 times a day, and should be completed between 18 and 24 months.

10. Infant and child feeding practices need to be monitored to initiate intensified education campaigns at an early sign of deterioration of breast-feeding prevalence and duration.

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