

PAPERS AND ORIGINALS

Infant-feeding practices among immigrants in Glasgow

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Summary and conclusions

Two hundred and six Asian, 99 African, 99 Chinese, and 102 Scottish children from 172 families were studied to ascertain infant-feeding practices. After arriving in the United Kingdom most of the immigrant mothers had not wished to breast-feed their babies because of wrong information or misconceptions about British infant-feeding practices. The Asians had largely adopted British habits of introducing solid foods to their babies' diets, but the habits of the African and Chinese mothers in this respect had changed little. Furthermore, many of the African and Chinese children had received no vitamin preparation.

The survey showed that all mothers resident in Britain urgently need advice on some aspects of infant feeding.

Introduction

The study was set up to assess the health and nutritional state of Asian, African, and Chinese children in Glasgow and compare them with those of Scottish children from the same district. The study included many specialist investigations, and some of the results have already been reported.¹⁻³ We report here our findings on the infant-feeding practices of immigrant families in Glasgow surveyed during 1974-6. The Asians came from the Indian subcontinent, the Africans mainly from Nigeria, and the Chinese from Hong Kong. The term "immigrant" describes the children of these three ethnic groups whether or not they were born in the UK; "Scottish" means local white children.

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Subjects and methods

The population of Glasgow includes about 12 000 Asians, 1100 Africans, and 3000 Chinese. The immigrant community is dispersed throughout the city but is particularly concentrated within two major areas on either side of the River Clyde. Most Asian immigrants in Glasgow are from the Punjab (north India and west Pakistan). The children included in the survey come from two schools north of the river. Preschool siblings in the same families were also asked to attend. A form explaining the purpose of the survey was given to the parents of each family, with translations into Urdu, Hindi, and Chinese. The children of all parents who agreed to participate were seen at a special clinic held by one of us (KMG) at the hospital. We studied 506 children (206 Asian, 99 African, 99 Chinese, and 102 Scottish) from 172 families (53 Asian, 40 African, 42 Chinese, and 37 Scottish). Of the immigrant children, 292 were born in the UK and 112 abroad. Each child and mother was seen by a dietitian to assess diet, and information on infant-feeding practices was obtained. Mothers who had not breast-fed were asked to give one reason for not doing so.

Results

The social-class distribution of the families has been reported elsewhere, but the figures for each class, as for each religion, were too small for individual analysis.² There were, however, no obvious differences in dietary habits between Muslims, Hindus, and Sikhs or between classes within each ethnic group.

Type of feeding method used—One hundred and one Scottish (99%), 136 Asian (66%), 57 Chinese (58%), and 44 African children (44%) were exclusively bottle-fed (see table I). All the others were breast-fed except for three Chinese children, for whom the method of feeding was unknown. The extremely low number of breast-fed Scottish children was recorded before the widespread publicity in the national and medical press promoting breast-feeding in the UK.

TABLE I—Relation between country of birth and method of feeding used. Figures are numbers (%) of children

Country of birth	Method of feeding	Asians (n = 206)	African (n = 99)	Chinese* (n = 99)	Scots (n = 102)
United Kingdom	Breast	34 (20.9)	36 (48.0)	1 (2.0)	1 (1.0)
	Bottle	129 (79.1)	39 (52.0)	48 (98.0)	101 (99.0)
Country of origin	Breast	36 (83.7)	19 (79.2)	38 (80.9)	
	Bottle	7 (16.3)	5 (20.8)	9 (19.1)	

*Feeding method not known for three Chinese children.

Relation of country of birth to feeding method used—Table I indicates how the immigrants were strongly influenced by infant-feeding practices in the UK. The Africans appeared to have been less affected than the Chinese and Asians, but this may have been because their average social class was higher. The Chinese appeared to have given up breast-feeding almost completely after arriving in this country, 48 out of 49 (98%) Chinese children born in this country having been bottle-fed as opposed to nine out of 47 (19%) born abroad. When the mothers from all four groups were asked why they had chosen not to breast-feed they gave the reasons summarised in table II. The commonest reasons were embarrassment, inconvenience, and insufficient breast-milk. Many Scottish mothers completely rejected the idea of breast-feeding.

TABLE II—Percentages of mothers giving various reasons for not breast-feeding their children, according to nationality

Reasons	%
<i>Asian</i>	
Embarrassed and did not want to	24
Not enough milk	15
Custom in UK to bottle-feed	12
Not well enough	11
Father said not to	10
Inconvenient, "bottles better"	8
Baby a poor feeder	6
Misunderstood hospital and thought had to bottle-feed	6
Cracked nipples	4
Law in UK to bottle-feed	2
Too cold in UK—would pass on colds to baby	2
<i>African</i>	
Inconvenient	70
Milk cheaper in UK	30
<i>Chinese</i>	
Inconvenient	70
Insufficient milk	20
Why not when so many types of artificial milks to choose from?	5
Unfashionable—not living in a village like Hong Kong now	5
<i>Scottish</i>	
Did not like idea of breast-feeding	25
Embarrassed	14
Don't know why	12
Inconvenient	10
Never thought of anything else	10
No patience	10
Bottle-fed first baby so decided to bottle-feed second	10
Did not have enough milk	6
Flat or small or cracked nipples	3

Duration of breast-feeding—Of the 70 (34%) Asian children who were breast-fed, about two-thirds were fed for at least six months, and some of these for as long as three years. Of the African babies, 55 (56%) were breast-fed, only 3 of these (5%) for more than a year. Chinese mothers who had given birth in China or Hong Kong and who breast-fed appeared to do so on average for at least a year and often for up to three years. Only one Scottish child was breast-fed for more than six months. Interestingly, in all the ethnic groups the child's position in the family affected the decision about whether to breast- or bottle-feed. The third child had considerably less chance of being breast-fed than the first, and the sixth child almost none.

Age at which solids introduced—Solids were not added to the diets of 32 Asian children (15.5%) until the age of 1 year or over. The Africans followed the Scottish trend, which was to introduce solids largely by 6 months, but they did not appear to start adding them as

early as the Scots. The most alarming finding was that solid foods were not given to 41 Chinese children until they were aged 1 year or over.

Age at which solids introduced related to country of birth—Table III shows that solid foods were not introduced into the diet of 29 (67.4%) of the Asian children born abroad until 1 year or later. After coming to the UK, however, the Asians largely adopted British habits of adding solids, and 143 (88%) Asian children born in the UK had had solids added to their diet by 6 months. The African and Chinese mothers did not appear to have changed their feeding practices much on coming to Britain. Solid foods were introduced to the diets of 66 (88%) of the Africans born in the UK by 6 months; they were not introduced till 1 year or later in 20 (43%) of the Chinese children born abroad and in 21 (43%) of those born in the UK.

Type of solid foods given—Asian and African mothers generally used the same foods as Scottish mothers, but the Chinese mainly used porridge made with rice to which they usually added liquidised pork, chicken, beef, or fish. All mothers also used baby cereals, tinned savoury baby food, egg yolk, puréed fruit, and fruit-flavoured yoghurt.

Vitamin supplements—Forty-six African and 50 Chinese children had never received a vitamin preparation. The high number of Asian children (179; 87%) receiving vitamin preparations was probably due to the recent drive through schools, clinics, and GPs to improve the health of Asian children since many had only recently started taking vitamins. A similar initiative is needed for African and Chinese groups. Only 19 (18.6%) Scottish children had never received a vitamin preparation. Furthermore, the use of vitamins generally decreased as the children grew older. This is particularly worrying in the case of the Asians, who may develop rickets as preadolescents. The Scottish mothers tended to start or restart giving vitamins when the child reached school age. Their most common explanation for this was that "vitamins prevent colds." They appeared to feel that the children were more at risk when at school and away from their care and that vitamins helped to protect them.

Discussion

It is clear from this survey that many immigrants successfully adopt artificial feeding practices shortly after arriving in the UK even though they have an adequate knowledge of breast-feeding. If the Asian and Chinese mothers had remained in their own countries more than 80% would have breast-fed their babies. Similar findings for Asians have been reported.⁴ The reasons given by immigrant mothers for not breast-feeding their babies in the UK were serious misconceptions, which should be corrected by medical and paramedical personnel at antenatal, parentcraft, and child health clinics. If possible the fathers should be included in this discussion, as they often decide how the child is to be fed. Chinese mothers often do not attend child welfare clinics, and the language problem may be more of a barrier for them than it is for Asians, there being fewer Chinese-speaking than Hindi- or Punjabi-speaking doctors and nurses.

Recently there has been widespread publicity in the medical and national press to promote breast-feeding. This has mainly been in English, and owing to the language barrier the message probably will not reach immigrant mothers. It might do so if it were translated into Urdu, Punjabi, Hindi, Gujrati, and Chinese. The slogan "breast is best" should be emphasised to all mothers

TABLE III—Age at which solids introduced related to country of birth. Figures are numbers (%) of children

	Age in months											No solids given*	Unknown
	1	2	3	4	5	6	7-8	9-12	12-24	24-36	>36		
<i>Children born in United Kingdom</i>													
Asian	8 (4.9)	8 (4.9)	76 (46.7)	15 (9.2)	5 (3.1)	31 (19.0)	4 (2.5)	2 (1.2)	3 (1.8)			7 (4.3)	4 (2.5)
African	3 (4.0)	10 (13.4)	17 (22.7)	19 (25.3)	3 (4.0)	14 (18.6)	5 (6.7)	1 (1.3)					3 (4.0)
Chinese†	1 (2.0)	3 (6.1)	4 (8.2)		5 (4.9)	7 (14.3)	9 (18.4)	1 (2.0)	20 (40.9)	1 (2.0)			3 (6.1)
Scottish	4 (3.9)	28 (27.5)	29 (28.4)	14 (13.7)		9 (8.8)	3 (3.0)	9 (8.8)	1 (1.0)				
<i>Children born in country of origin</i>													
Asian			2 (4.7)		5 (11.6)	3 (7.0)	3 (7.0)	1 (2.3)	28 (65.1)	1 (2.3)			4 (16.6)
African	1 (4.2)	1 (4.2)	11 (45.8)	5 (20.8)	1 (4.2)		1 (4.2)						13 (28.0)
Chinese†	1 (2.0)	3 (6.0)	4 (8.0)			3 (6.0)		3 (6.0)	10 (22.0)	8 (18.0)	2 (4.0)		

*Children had not received solids at time of study. †No details known about three Chinese children.

irrespective of ethnic origin. They should be encouraged to breast-feed their babies for at least two weeks and preferably for the first four to six months.

After arriving in the UK most Asians adopted British habits of introducing solids into the infant's diet; the Chinese, however, did not make a similar adjustment. The Africans did not appear to be much affected by standard feeding practices in Britain and, like the Scots, added solids to most of the infants' diets by 6 months. The tendency of the Scottish mothers to bottle-feed and to introduce cereals or other solid foods to the diet at an early stage followed the current trend in the country.

In view of the many African and Chinese children in the survey who had never received vitamin supplements we recommend that all parents be encouraged to give vitamins to their children up to school age. The finding of rickets in 12.5% of Asian children in this survey suggests a serious problem that warrants immediate action¹; the disease does not seem to be a problem with African, Chinese, and Scottish children. To prevent rickets all Asian children should be encouraged to take vitamin D supplement. A preparation providing 7.5 µg cholecalciferol (300 IU) daily would probably be adequate and

should be recommended for use between the ages of 3 months and 16 years.

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References

- ¹ Goel, K M, *et al*, *Lancet*, 1976, **1**, 1141.
- ² Goel, K M, *et al*, *British Medical Journal*, 1977, **1**, 665.
- ³ Goel, K M, *et al*, *Health Bulletin (Edinburgh)*, 1978, **36**, 176.
- ⁴ Evans, E, *et al*, *Archives of Disease in Childhood*, 1976, **51**, 608.

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Outcome of pregnancy after amniocentesis for chromosome analysis

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Summary and conclusions

A consecutive series of 1177 pregnant women examined by amniocentesis for chromosomal abnormalities delivered 1039 live-born babies weighing over 2500 g and 79 live-born babies weighing under 2500 g. Twenty-six abortions were induced (2.2%)—13 (1.1%) because of chromosomal abnormalities—and 28 women (2.4%) aborted spontaneously; in these cases chromosomes were normal.

Analysis of all spontaneous abortions in the series suggested that 0.3-0.7% might have resulted from amniocentesis.

Introduction

In a consecutive series of 1086 pregnancies the overall incidence of chromosomal abnormalities was 1.4%, there being no appreciable difference between low-risk and high-risk groups. This appeared to be an important argument for offering amniocentesis for chromosome analysis to all pregnant women.¹

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Justification for such a policy, however, must depend on complications of the procedure. We have therefore reviewed the outcome of 1177 pregnancies examined by amniocentesis and report the results.

Subjects and methods

During 1 March 1973 to 1 May 1977, 1179 samples of amniotic fluid from 1177 women were received for analysis by the chromosome laboratory, Rigshospitalet. Most were obtained in the ultrasound laboratory at St Joseph's Hospital. Of the 1177 women, six had twin pregnancies but only two of these were detected by ultrasound before amniocentesis. Amniocentesis was carried out as described for singleton² and twin³ pregnancies.

The following data were obtained by questionnaire completed at the time of delivery in the department where delivery took place. Other information in the questionnaire is not included here.

Results

Table I gives the outcome of the 1177 pregnancies. Of all 1183 infants in the series, 1118 (94.5%) were born alive: 1039 (87.8%) weighed over 2500 g, and 79 (6.7%) under 2500 g. Twenty-six terminations were performed, 13 because of chromosomal abnormalities, and the rest because of raised α -fetoprotein concentrations, rubella infections, male fetuses in families with X-linked disease, maternal diabetes, and adrenogenital syndrome. In one of the four cases of twins not detected by ultrasound before amniocentesis a liveborn infant with Down's syndrome was delivered.

SPONTANEOUS ABORTIONS

Twenty-eight pregnancies (2.4%) ended in spontaneous abortion (table II). Although amniocentesis was usually performed during or after the 16th week of gestation, in about a quarter of these cases it was