

They comment on the severity of the chest pain complained of by the patients, and in this connection it is of interest that D. R. Smith (1964) in describing the mononucleosis-like syndrome in patients who had undergone open-heart surgery, does not mention chest pain of any sort in his listed symptomatology. Dunnett (1963) reviewed a large series of hospital cases in this country and no cardiac presentations were noted.

Colonna and Salinas (1965) reviewed the world literature when they reported their case of "acute benign pericarditis" which was found to have a mononucleotic blood picture and a heterophil antibody titre of 1 in 224, and they do not quote a case from the British literature.

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FACULTY REPORT

INFANT FEEDING IN EAST SCOTLAND

The East Scotland Faculty of the Royal College of General Practitioners

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(Recorder)

THIS INVESTIGATION HAD TWO OBJECTIVES. The first was to confirm the observation that breast feeding is becoming the exceptional rather than the usual method of feeding a baby. The second was to study the factors involved in this situation. Most practitioners would agree that breast feeding is the preferable method of feeding an infant and its decline contains a potential threat to the community. Our study is in the nature of a reconnaissance investigation designed to produce facts which could be used in an attempt to reverse this trend.

Material and methods

The first step was to design a form for recording the particulars of the

children, their parents and the place of confinement (figure 1).

COLLEGE OF GENERAL PRACTITIONERS

EAST SCOTLAND FACULTY

SURVEY OF INFANT FEEDING

Practitioner..... **Serial No.**.....
Please insert 'X' in appropriate square where applicable

BABY:

1. Name

2. Address

3. Date of Birth..... d. m. y.

4. Sex..... m. f.

5. Birth Weight..... lb. oz.

6. Father's Occupation.....

MOTHER:

7. Civil State..... m. s. w.

8. Age.....yrs.

9. Height ft. in.

10. Occupation.....

11. Parity
(No. of live babies including this one)

12. Previous successful breast feeding (6 weeks)..... Yes No

13. CONFINEMENT: (a) Home (b) Nursing Home

(c) Hospital (d) Spontaneous (e) Assisted

(f) Caesarean (g) Multiple

BABY UNDER SURVEY:

	Yes	No
14. Has breast feeding been attempted?.....	<input type="checkbox"/>	<input type="checkbox"/>

15. Feeding at	14 days	6 weeks	3 mths	6 mths
(a) Wholly breast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Breast with supplement.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Artificial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Reasons for adoption of artificial feeding:
(If more than one please number in order of importance)

(a) Maternal preference	<input type="checkbox"/>
(b) Previous adverse experience	<input type="checkbox"/>
(c) Maternal illness	<input type="checkbox"/>
(d) Engorged breasts.....	<input type="checkbox"/>
(e) Infection of breast	<input type="checkbox"/>
(f) Cracked nipples	<input type="checkbox"/>
(g) Milk volume unsatisfactory	<input type="checkbox"/>
(h) Normal diminution of milk volume.....	<input type="checkbox"/>
(i) Unexplained failure of lactation	<input type="checkbox"/>
(j) Housing (including lack of privacy).....	<input type="checkbox"/>
(k) Mother working	<input type="checkbox"/>
(l) Advice or pressure from others.....	<input type="checkbox"/>
(m) Prematurity	<input type="checkbox"/>
(n) Congenital abnormality.....	<input type="checkbox"/>
(o) Illness of baby.....	<input type="checkbox"/>
(p) Refusal of breast.....	<input type="checkbox"/>
(q) Other (state which).....	<input type="checkbox"/>
(1)	<input type="checkbox"/>
(2)	<input type="checkbox"/>
(3)	<input type="checkbox"/>

Figure 1. Form used for recording data for this investigation.

Early versions of this form were sent to the Research Committee of the College and practitioners who had experience of this type of work. Their suggestions were incorporated in the final layout. After this the members of the faculty board completed a short pilot trial to eliminate errors or ambiguities. When the cards were ready for distribution an explanatory note was sent with the first issue.

There were two sources of error despite these precautions. The first was that question 10 refers to the mother's occupation before marriage. This was frequently misinterpreted and the record completed as 'housewife'. Question 13 would have been better divided into two parts. With these exceptions the card worked well.

The investigation was designed to last a year. At the end of this time we had 518 completed records. These records are the raw material for the analysis which follows.

Results

Figure 2 shows the method of breast feeding up to six months following the birth.

Breast feeding is unsuccessful in this region. Out of 518 mothers 222 never attempted to breast-feed and a further 157 abandoned the attempt by the sixth week. There were too few continuing to breast-feed after six weeks to allow analysis beyond this point. However we felt that if a mother was still suckling at the sixth week she was making a genuine attempt to succeed even if she had to use an artificial supplement. Because of this we compared the background of those mothers with the others. There were four items for study: social class, the community from which the mother came, the place of confinement and parity.

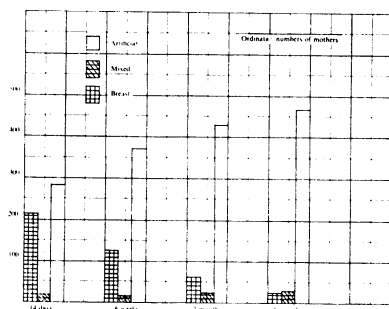


Figure 2
Feeding at intervals after birth

There were three distinct communities; an industrial city, country towns and wholly rural.

The first association was with social class. Women in the higher social classes are more likely to make a serious attempt to breast-feed (table I).

Further study showed that a serious attempt was commoner in the city and following a confinement at home or in a nursing home but since more people in the higher social classes lived in the city or were confined at home or in a nursing home, the two observations were interpreted as reflections of the association with social class.

We found that taller women were more likely to attempt breast feeding than shorter women (table II).

TABLE I
RELATIONSHIP BETWEEN ATTEMPTED BREAST-FEEDING AND SOCIAL CLASS*

<i>Social class</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>Others</i>	<i>Total</i>
Wholly or partly breast fed at six weeks ..	16	23	62	14	9	15	139
Artificial feeding at six weeks	9	44	141	67	57	59	377
TOTAL	25	67	203	81	66	74	516

$$\chi^2 = 32.11 \quad \text{degrees of freedom} = 5 \quad P < 0.01$$

TABLE II
ASSOCIATION OF ATTEMPTED BREAST-FEEDING WITH MATERNAL HEIGHT

<i>Maternal height</i>	<i>Under 4ft. 11in.</i>	<i>5ft. 0in.—5ft. 2in.</i>	<i>5ft. 3in.—5ft. 5in.</i>	<i>Over 5ft. 6in.</i>	<i>Total</i>
Wholly or partly breast-fed at six weeks	4	42	66	27	139
Artificial feeding ..	20	164	131	62	377
TOTAL	24	206	197	89	516

$$\chi^2 = 9.53 \quad \text{degrees of freedom} = 3 \quad P < 0.01$$

*The totals in the first two tables are 516 because the method of feeding was not recorded for two mothers. The heights of all mothers were recorded hence the total in the third table is 518.

This association has been observed before (Hyttén and Thomson 1955). They found a similar trend within each age, parity and social class group. However, other workers, including Baird, have found an association between maternal height and social class (Baird 1945, 1947, 1948). Because of this we looked for an association between maternal height and social class in our population and failed to find one (table III).

The implications of this will be considered presently.

Each participant recorded the reasons why the mothers who failed to breast-feed were unable to do so. This procedure may be criticized because it is not sufficiently objective, but short of test weighing there is, at

present, no other way of making this assessment, and test weighing was not a practical possibility. In many cases the failure was due to factors which could be observed visually.

TABLE III
SOCIAL CLASS AND MATERNAL HEIGHT

<i>Social class</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>Other</i>	<i>Total</i>
Height less than 4ft. 11in.	1	1	9	2	7	4	24
5ft. 0in.—5ft. 2in. ..	6	22	75	40	30	32	205
5ft. 3in.—5ft. 5in. ..	9	29	86	26	19	30	199
Over 5ft. 6in.	9	16	34	12	11	8	90
TOTAL	25	68	204	80	67	74	518

$$\chi^2 = 24.91 \quad \text{degrees of freedom} = 15 \quad 0.10 > P > 0.05$$

The reasons for failure can be placed in five groups. In some cases two or three reasons were recorded but only the reasons of first importance are detailed here. These results are summarized in table IV.

Test weighing indicates that about one in three women cannot breast-feed because of inadequate milk (Hyttén 1954). These correspond to our physiological group which is about one in four.

Discussion

Most general practitioners accept that breast feeding is the best way to feed an infant. Mother's milk is tailor-made for the infant's digestive tract. It is also a source of immune bodies (Nutrition reviews 1958). The most notable antibodies are against poliomyelitis, *Escherichia coli*, and *Staphylococcus aureus* but others have been recorded (Athreya 1964, Gyorgy *et al.* 1962, Sussman 1961, Kunin 1962).

Breast-feeding is the method which will establish the most satisfactory mother-child relationship. The situation in our region is unsatisfactory but this study indicates two lines along which it could be improved.

The maternal attitude is an important factor in more than half the mothers who fail to breast feed. This suggests that efficient re-education might result in improvement. This attitude against breast-feeding could be socially determined since we have shown that mothers from higher social classes are more likely to make an attempt at suckling.

Although, superficially, re-education is a simple solution, it should be remembered that it is not easy to alter social attitudes. Education may have to be directed at many people besides the mother because in many cases she is in an environment which is hostile to breast-feeding. The grandmothers and perhaps even the father and grandfathers should be

under pressure to encourage breast feeding.

The second interesting point is the number of mothers who fail to breast-feed for physiological reasons. Recent veterinary work shows that adrenocortical hormone, as well as prolactin, is important in milk production (Meites and Tucker 1967). Both these hormones are under the control of the anterior pituitary. In our study we have shown that taller mothers are more likely to breast feed than shorter mothers. Others have shown that maternal height is associated with social class but we did not confirm this. Hytten and Thomson, who were quoted above, noted that the tendency of taller mothers to suckle was maintained within each social class.

It may be that 20 years of welfare-food and welfare-care of children has produced a generation of mothers in whom class differences in physical characteristics have been removed or at least blurred. If this is so and taller women do, in fact, make better breast feeders, it is possible that the anterior pituitary plays an important part in producing a mother who is

TABLE IV
REASONS FOR FAILURE TO BREAST FEED

<i>Grouped reason</i>	<i>Detailed reason</i>	<i>Number of mothers</i>
'Anti-maternal' attitude	Preference	173
	Previous adverse experience	58
TOTAL		231
Anatomical	Maternal illness or ill baby	22
	Engorged breast	4
	Breast infection	10
	Cracked nipple	18
	Nipple retraction	6
	Prematurity congenital abnormality	5
TOTAL		65
Physiological	Unsatisfactory milk volume	84
	Normal diminution in milk supply	25
	Unexplained	10
	Refusal by baby	8
TOTAL		127
Social	Lack of privacy—bad housing	4
	Working mother	6
	Third party advice	4
	Anxiety	11
	Removal of home	6
	Adoption	10
TOTAL		41

constitutionally adapted for breast-feeding, and since the pituitary and hypothalamus are closely linked anatomically and physiologically, there may be a relationship between the mother's physiological state and emotional attitude towards breast-feeding. The anterior pituitary controls growth as well as adrenocortical and prolactin secretion.

Deliberate alteration of pituitary metabolism is a long way off but the mothers who fail for physiological reasons may well be helped by supplemental feeding with 'artificial' milk in an emotional atmosphere more favourable to natural feeding than is presently the custom.

Summary

The frequency of breast-feeding and attempted breast-feeding in this region has been described.

There is an association between attempted breast-feeding and social class and maternal height.

The implications of these findings have been discussed and it is suggested that education could alter the situation for the better.

It is also suggested that the association with maternal height points to anterior pituitary activity.

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