A STUDY OF INFANT FEEDING PRACTICES IN ACCRA

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Summary

The influence of the extent of parent education, economic factors and the role of restrictive practices in child feeding in Accra are studied. Data presented indicate little difference between mothers in the pattern of child feeding, although there was a general tendency for educated mothers to feed their children on imported proprietary baby foods and on special foodstuffs such as eggs. Also noted was a general tendency to withhold important protein-source foods—meat and fish from children for the reason that these foods caused various "illnesses". However, there was no indication that taboos constituted a serious threat to child nutrition in the city.

Introduction

IN GHANA, as in most parts of West Africa, malnutrition is extremely common in children, especially between the ages of one and three years—more than in other sections of the population. *Kwashiorkor* occurs chiefly in this group and other signs of ill health attributable to malnutrition are frequently seen. It has also been found that the growth of children in most parts of the country slows down markedly over this period of life.

The origin of Kwashiorkor and other forms of malnutrition in children is sometimes attributed to poverty and to the parents' ignorance of proper foods for child feeding, as well as to various taboos, false beliefs and customs relating to these.

Much has been written about these factors as contributing to high infant and child death rates. However, studies comparing the importance of economic factors with cultural ones in determining the pattern of child feeding are needed in each country or region in order to attain an understanding and plan for the solution of the problem of malnutrition as it occurs locally.

With this in view, a pilot study was made in Accra with the hope of promoting understanding of the problem in that city, and also to test out methods which might later be used for similar studies in other parts of Ghana. Such studies are essential when planning educational and other programmes for the eradication of malnutrition in infancy.

Investigation procedure

Personal interviews were conducted (using specially-prepared questionnaire forms) at the Princess Marie-Louise Children's Hospital, the Jamestown Clinic, and the Osu Clinic, all in Accra. A copy of the questionnaire form used for the survey is attached as Appendix IV. The enumerators were technical assistants from the Food Research Institute; they included four women and eight men. The subjects were mothers who had brought small children to the clinics or to the out-patients' department of the hospital. In all 399 questionnaires were completed. In addition ten highly-educated women were invited to fill in the same questionnaire as related to their own cases.

The chief points selected for enquiry were:

(*a*) the number of children born to a family and the number surviving;

(*b*) the duration of breast-feeding;

(*c*) the age at which the child was first introduced to foods other than breast-milk or proprietary infant milk. (The latter were not counted as supplementary foods for purposes of tabulation);

(*d*) whether food was prepared separately for the child during the breast-feeding period and also after the child had been taken from the breast;

(*e*) the foods given to the child at the time of the survey;

(*f*) whether the mother considered that certain foods—meat, fish, eggs and fruits should be excluded from the child's diet, and if so why. Certain ideas known to be commonly held—as for example that if meat is given to young children it may cause diarrhoea, tooth decay, or worms and that some fruits are particularly liable to cause diarrhoea—were investigated a little further. Mothers were asked if they knew of any cases where these foods had actually produced such effects;

(*g*) the amount of money spent weekly on feeding the child.

Points noted about the mothers themselves included age, tribe, whether or not they had had some formal education, and the length of time they had been living in Accra. The data were not analysed with respect to age or tribe (the numbers for most of the tribes were too small to worth separate tabulation); but it is interesting to note that in this cosmopolitan city twenty-five different tribes were represented among the 399 mothers. Their ages ranged from 20 to 45 years.

Since malnutrition in children is often attributed to ignorance on the part of the parents, it was particularly interesting to see whether educated parents differed from those who had no formal education, in the way they fed their children. Accordingly the information was tabulated in three groups:

(*a*) families in which both father and mother had attended school;

(*b*) families in which the father but not the mother had been to school (the converse situation, a woman of some education married to a man without, did not occur in this sample);

(*c*) families in which neither parent had been to school.

It was felt that detailed enquires into the parents' educational background would be difficult to make and might cause annoyance. Therefore, the distinction drawn was simply between those who had attended school—at whatever level and for whatever period; and those who had never done so. In order to shed further light on the effect of education, information was collected from an additional group of ten women who had had high educational attainments. All of them had attended a university in Ghana or overseas, and had obtained either a degree or other professional qualification. Their husbands were all of comparable standard of education. These women were not interviewed but were made to fill in the questionnaires themselves. The information obtained from them appears in Tables 1 to 3 under the heading "Highly-Educated Mothers and Fathers."

Since Accra is cosmopolitan and a city in which many foods can be bought which are not readily available elsewhere, and in which mothers come into contact with many influences ranging from deliberate attempts of nutrition education to commercial food promotion and advertisements, it was thought that child-feeding practices might be influenced by the length of time the mother had lived there. This information also was recorded and re-tabulated under four headings:

(*a*) mothers who had lived in Accra all their lives;
(*b*) those who had come to live there at least ten years or more;
(*c*) those who had stayed in the city from five to ten years;
(*d*) those who had come to live there less than five years from the time of the survey.

The ten highly-educated women were not included in this second tabulation.

It will be noted that no attempt was made to divide the families up according to their economic status. This is because previous experience had shown that an accurate assessment of family income is extremely difficult. Questions on the point are apt to be resented and the answers are seldom reliable. The only feasible approach yet found has been to select a group for which the information is already on record, as for salaried workers. It is hoped that such a group may be found for surveys later on.

Results

Breast feeding

Nearly all babies are breast-fed at first. Only one woman in this survey stated that she had not breast-fed her baby at all. The traditional first supplementary food is *akasa* a pap or gruel made from fermented maize dough. This is introduced usually when the child is two or three months old or even earlier.

In the survey, the mother was asked at what age the child had been taken from the breast completely. The results showed a marked tendency for the children of educated parents to be taken from the breast earlier than those of uneducated parents. The results are shown in detail in Table A of Appendix I. It will be noted that 6 out of 137 educated mothers had taken the child from the breast by three months or earlier, one out of 156 uneducated mothers married to educated men had done so, while the shortest period of breast-feeding recorded among 106 families in which both parents were uneducated was 8 months; this in one case only.

The percentage of children in the three groups, and also in the small group born to highly-educated mothers who had been taken from the breast by six months, nine months, twelve months, eighteen months, or even later, is shown below:

Table 1

NUMBERS AND PERCENTAGES OF CHILDREN TAKEN FROM THE BREAST AT VARIOUS AGES

	6 months or earlier		*7 to 9 months*		*10 to 12 months*		*13 to 18 months*		*Over 18 months*		*Mean age*	*No. in group*
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*Months*	
Mother and father highly educated	7	70	2	20	1	10	—	—	—	—	5.8	10
Both parents educated ..	13	10	30	21	58	42	31	23	5	4	12.0	137
Father only educated ..	3	2	21	13	59	38	58	37	15	10	14.1	156
Neither parents educated ..	—	—	1	1	24	23	55	52	26	24	17.8	106

The longest period recorded was three years. Four mothers stated they had fed their children at the breast for this period—two in the group where both parents were uneducated, and one in each of the other groups. Among the highly-educated group, one woman stated she had fed her child at the breast for 12 months. Three highly-educated women had breast-fed their children for three months only; none for less.

Examination of Table A, Appendix I shows that there is a marked tendency for the data to cluster round certain points; nine months, twelve months, eighteen months. This probably reflects a tendency to "round-off" the figure when stating it to the investigator, rather than any real choice of these ages as the time of weaning. Anything over eighteen months was almost certainly "rounded off"; one mother gave the time as 19 months, one as 23 months, but these were tabulated as 18 and 24 for convenience; otherwise they evidently stated it to the nearest half-year.

The data were also tabulated according to the period of the mother's stay in Accra. There was no consistent or significant difference between the groups. The results are also shown in Table A.

Introduction of supplementary foods

Mothers were asked at what age the child had been introduced to *Ghanaian* foods (as distinct from such imported baby-foods as powdered milk and specially prepared cereals).

There was some evidence that certain mothers misunderstood the question. In some cases the ages given for the introduction of supplementary foods were the same as those given for the cessation of breast-feeding: e.g. 21 mothers answered "18 months" to both questions, two answered "2 years" to both, and one answered "3 years" to both.

Taken literally, the figures suggest a weaning process so late and so abrupt that it seems unlikely the child would survive. It seems probable that the mothers thought the interviewer was asking for the age at which the child was put on the normal family diet, and answered accordingly.

In all there were 43 instances in which the age given for the start of supplementary feeding was the same as that given for the end of breast-feeding. These were omitted when tabulating the age at which supplementary feeding started—a procedure which eliminated most, but not all, of the instances in which this was reported as being very late.

Detailed results of the tabulation are given in Table B of the Appendix. They are summarised in the table below:

Table 2

PERCENTAGE OF CHILDREN GIVEN SUPPLEMENTARY FOODS FOR THE FIRST TIME AT VARIOUS AGES

	3 ms. or less	4 ms.	5–6 ms.	7–8 ms.	9–10 ms.	11–12 ms.	over 12 ms.	Mean age ms.	No. in group
Highly-educated mothers	40	20	20	10	10	1	3.4	3.4	10
Both parents educated ..	36	16	19	16	10	3	—	5.4	134
Father only educated ..	25	18	28	11	6	11	1	6.8	140
Neither parent educated	23	23	26	10	6	11	1	6.0	—
All families	27	18	23	12	7	9	4	5.4	—

One uneducated mother stated that she had taken her child from the breast at three years and started supplementary feeding at two years. Another, also uneducated but married to a husband with some education, stated she had started supplementary feeding at eighteen months and taken the child from the breast at two years. A third in the same group gave sixteen months for the cessation of breast and the start of supplementary feeding—all somewhat high figures.

It will be noted that supplementary feeding does tend to start earlier among educated women but that this tendency is not so marked as the trend towards early removal from the breast. Seventy-one per cent of educated women, or women with educated husbands had started the child on supplementary foods by the age of six months, but so had 65 per cent of wholly uneducated parents. On the other hand, the percentage starting late (10 months or over) is definitely higher among uneducated mothers.

Again tabulation according to length of stay in Accra showed no consistent differences between the groups.

Separate preparation of child's food

Even at the start of supplementary feeding, many Ghanaian children are not always given food specially prepared for them. They may be given simply a little of the rice or *kenkey* or boiled root crop and plantain prepared for the family's meals. This custom is often suggested as a contributory cause of infant malnutrition. Accordingly mothers were asked whether or not they prepared any food separately for the child during breast-feeding and after the child had been completely weaned. The percentage of mothers in the various educational groups who said they did so are shown in Table 3.

Table 3

INCIDENCE OF SEPARATE PREPARATION OF CHILD'S FOOD

Percentage mothers cooking food separately for the child

	During breast-feeding	*After breast-feeding stopped*
Highly educated mothers	100	50
Both parents educated	95	28
Father only educated	98	27
Neither parent educated	80	20

It will be seen that nearly all mothers prepared some of the child's food specially for him while he was still being breast-fed. Since the great majority of infants are given *akasa* (maize pap or gruel) among their first supplementary foods, and since this is not very often consumed by other members of the family, this was to be expected. (A positive answer did not imply that *all* of the child's food was separately prepared; only that some of it was). Only in families where both parents were uneducated was there an appreciable number of mothers who did not prepare some food specially for the child at this stage.

On the other hand, the majority of mothers said they did not prepare any food specially for the child after he was taken from the breast. Surprisingly, only 50 per cent of the highly-educated mothers answered in the affirmative, although as a group they tended to take their children from the breast early. However, all of them stated they gave their children various imported baby-foods, such as custard, oat-meal, strained baby-foods and special infant cereal foods. It is possible that some of them thought the query referred only to Ghanaian foods.

General pattern of children's diet

The mothers were asked to list separately the Ghanaian and the imported foods they gave to their children. The answers were somewhat obscured by the fact that they were not asked to specify the ages at which the children received the various foods, or how often they were fed. Therefore, it was not possible to compare the sequence in which foods are introduced to the diets of young children in Accra with that found by Davey (1961) in other parts of Ghana. However, certain points emerge quite clearly.

Detailed figures of the number of mothers in each group recorded as giving each type of food to their children are shown in *Appendix II Table C*. The chief points of interest are:

About 55 per cent of mothers said they gave their children preparations of maize other than akasa. For the most part these consisted of *kenkey* and *banku*, two forms of stiff porridge made from fermented maize dough. Maize is one of the chief staples in the Accra district and these are the two commonest forms in which it is prepared. Another food mentioned was *aprapransa* (toasted maize meal cooked with palm-oil) but there were only a few records of this. Upon analysing the figures with respect to the length of the mother's stay in Accra it was found that among mothers who had lived in the city all their lives over 60 per cent mentioned giving maize preparations (other than akasa) to their children, whereas only 50 per cent of other mothers actually did so. This may be significant since kenkey and banku are particularly typical of the area around Accra and less so in other parts of the country.

Table 4 shows the percentages of mothers in the various groups recorded as giving foods that are of particular interest either because of their nutritional importance or because there was a clear difference between the educational groups.

In considering this and the preceding tables it is important to remember that although the parents were classified according to educational status this does not mean a difference between the groups can necessarily be attributed directly to the effects of education. An educated person is likely to have a better job and therefore, to be in a better economic position than one without. The fact that a larger proportion of educated women gave their infants eggs, rice, bread, yam and imported baby foods may well be due to the fact that they are more likely to have the means to spend on these comparatively expensive foods.

A point worth noting is the small proportion of mothers in all groups who said they gave their children meat or fish.

Beliefs, customs and taboos

It is commonly said that children in Ghana and many other parts of Africa are not allowed to eat the various animal protein foods—meat, fish and eggs—because of taboos, or because of certain beliefs that these foods cause diarrhoea, tooth decay, worms, etc.

Table 4

PERCENTAGES OF MOTHERS RECORDED AS GIVING CERTAIN FOODS TO THEIR CHILDREN

	Educated parents %	*Father only educated* %	*Neither parent educated* %	*Highly-educated mother* %
Ghanaian foods				
Rice	82	59	60	20
Bread	42	20	25	10
Dry cassava (*gari* and *kokonte*)	9	—	—	—
Yam	66	60	49	50
Fufu	42	40	44	—
Legumes	18	12	6	40
Fruits	23	18	15	10
Eggs	20	12	1	30
Meat and fish	9	6	8	10
Imported foods				
Baby milk	47	31	16	60
Other milk	44	60	41	20
Flavoured milk drinks	31	16	9	20
Cereal baby foods	12	4	4	30
Custard powder	31	20	11	10
Oats	23	15	5	30
Strained baby foods	—	—	—	40

To test this belief two questions were asked. First, the mothers were asked if they knew of any reason why children should not be given those foods (commonly considered to be the subject of taboos, customs and beliefs) or why they would forbid the use of particular foods—meat, fish, eggs, beans and fruits in children's diets. Secondly, they were asked whether they knew of any actual instances of illness—diarrhoea, tooth decay, worms following the consumption of meat. (It was known that these are sometimes said to be caused by giving meat, in particular, to small children).

It did not appear this question was so phrased as to get the most desirable answer from the enquiry. The great majority of mothers, asked whether they knew of any reason for not giving the foods to children, simply said "No". A number added that they did, in fact give most or all of these foods to their children. This statement did not always tally with the list of foods obtained in answer to Question 2 (What Ghanaian foods do you give to your children?) Also a number of mothers, having stated that they knew of no reason why meat should not be given to children went on to say that they knew personally of instances in which meat given to young children had caused diarrhoea, tooth decay or worms. The subject of beliefs and taboos is well known to be a difficult one to investigate in any quantitative way.

The results obtained are given in Table 5. Because the number of positive answers was small no attempt has been made to divide them up according to the educational classes of the parents.

Table 5

REASONS GIVEN FOR WITHHOLDING CERTAIN FOODS FROM CHILDREN AND NUMBER OF MOTHERS GIVING EACH TYPE OF REASON

	Number of mothers who said the food should be withheld for the reason below				
Reason	*Meat*	*Fish*	*Eggs*	*Fruits*	*Beans*
Taboo, religion or custom	3	2	3	—	—
Causes worms	1	—	—	—	—
Causes stomach trouble or indigestion	11	6	1	—	—
Causes diarrhoea	4	6	1	4*	3
Causes rash or fever	—	—	—	—	4
Causes constipation	1	—	—	—	1
Children dislike it	3	4	3	—	1
Expensive	—	—	2	—	—
Child will get a taste for it	3	1	—	—	—

*Mangoes

The idea that children who are given meat or fish at an early age may develop a taste for it and either steal it from the soup reserved for their parents or make embarrassing demands for it, is quite widespread and has been recorded from Nigeria as well.

In so far as any reliance can be placed on these figures, they seem to indicate that taboos are not of great importance in preventing the use of protein-rich foods for the feeding of children in Accra. Even where taboo or religion was given as a reason for withholding meat or fish, this did not apply to all foodstuffs in this class. Only pork among meat was forbidden, and the taboo applied only to particular kinds of fish (usually mudfish, *Clarias* sp.). One child was said to be under a taboo applying to only hens' eggs, another under a taboo that applied to guinea-fowl eggs.

More important, is the notion that such foods cause various illnesses. The number of mothers mentioning this spontaneously was quite small, though seven or eight times as great as the number mentioning taboos or religious reasons. However, when they were asked specifically whether they had known cases where one of the foods—meat—produced illness in children, a considerably larger number said they had. (*See* Table 6). With regard to worms another group of women remarked that they had known children to have worms but did not know whether meat was the cause—an objective statement which for some reason was not made in connection with either tooth-decay or diarrhoea.

Table 6

NUMBER OF MOTHERS WHO CLAIMED ACTUAL EXPERIENCE OF ILLNESS FOLLOWING THE GIVING OF MEAT TO CHILDREN

Illness	*Number of mothers claiming to have observed it*
Diarrhoea	31
Tooth decay	24
Worms	36

Child mortality

It was obviously desirable to have some means of comparing the health of children in the three groups of families. Since no doctor was available at the hospitals, and the clinics being extremely busy it was not possible to do a clinical survey on the children. The only measure readily available was the proportion of children born to the mothers who had survived to the date of the enquiry.

This is not a very accurate statistical measure, since the ages at which the children died are not known. However, the results are quite interesting. They are shown in Table 7.

Table 7

NUMBER OF CHILDREN BORN AND PROPORTION SURVIVING TO MOTHERS IN THE VARIOUS EDUCATIONAL GROUPS

	Number mothers	*Mean age of mothers (years)*	*Total Number born*	*Children surviving*	*Number children dead*	*Percentage children dead*
Highly-educated mothers ..	10	34.0	32	29	3	9
Educated parents	137	26.5	445	405	45	10
Father only educated ..	156	28.8	602	530	72	12
Neither parent educated ..	107	30.6	419	348	71	17

The proportion of children dying shows a decrease with the degree of education of the parents; but not, perhaps, to the extent that might be hoped, since nine per cent of the children of even highly-educated mothers died. Since this group was a very small one, it is possible that the figure was not representative of such women as a class.

It must be remembered, again, that degrees of education tend to be strongly correlated with economic status. The ten highly-educated women were all well-to-do. Nothing was recorded concerning the economic status of the other women, but the majority were certainly less well-off. This differential death-rate, therefore, cannot be taken as evidence of a beneficial effect of education as such.

Discussion

This was a pilot survey and it is not time yet to draw firm conclusions regarding the relative importance of economic factors, education, and traditional beliefs in determing the pattern of child feeding or the incidence of malnutrition among children. However certain points are clear.

1. The way in which little children are fed varies to some extent—according to the degree of education which the parents have received. The survey shows that educated mothers are more likely to give their children imported baby foods, such as baby milk and cereal preparations. They are also more likely to give their children eggs, a significant point, since eggs are particularly a subject of taboos and superstition, and also because Health Visitors and other groups doing child health work always stress the value of eggs for feeding infants. It is noteworthy that families in which only the father had been to school also gave eggs to their children rather more often than those in which neither parent had been to school.

While it must be remembered that educated people tend also to have more money than the totally uneducated and are therefore better able to afford such items as eggs, at the same time, this suggests strongly that formal education does influence the thinking of future parents on the way in which children should be fed.

Not all the differences having a bearing on education are desirable. Custard powder, for instance, is a poor food for infants and the fact that 31 per cent of educated mothers, as compared with 20 per cent and 11 per cent of the other groups gave it to their children, represents an unfortunate trend. The shorter period of breast-feeding found on average, among educated women may also be a disadvantage. Those women who took the child from the breast early usually provided a special baby milk as a substitute. But as Jelliffee (1954) pointed out, there is a strong tendency for these substitutes to be fed in mixtures which are too weak, so that a bottle-fed child is often half-starved. Also, since the mixtures are often prepared with little attention to hygiene, bottle-feeding leads to a greater frequency of gastric and intestinal infections.

In some respects, there is little if any difference between the feeding-patterns followed by educated and uneducated mothers. In particular, the percentage of mothers who said they gave fish or meat to their children was not appreciably larger in the educated group. Shortage of protein is the most important single factor causing malnutrition in Ghanaian infants, and the value of protein-rich foods for infants should therefore be one of the cardinal points of nutrition education. The fact that educated mothers do not claim to give the child more protein-rich foods suggests that at the time these mothers went to school, they did not receive effective instruction on this point. On the other hand, educated mothers included beans (legumes) in the list of foods they gave to their children, much oftener than the uneducated group. As beans are the best source of vegetable protein available in the country this is hopeful so far as it goes. The proportion of educated women who said they gave beans, however, is still less than one in five. There is, therefore, room for improvement in this also.

This survey suggests, then, that education does have an important influence on infant feeding practices. But that in some respects, this influence is not very well directed. There should be a clearly-defined programme of nutrition education in schools, concentrating on those points which are of practical importance in Ghana; and the need for protein-rich foods during infancy should be stressed. Teaching should include information regarding the various protein-rich foods and the ways in which they can be prepared for infants. Research into ways of preparing protein-rich vegetable foods such as beans and groundnuts, and the quantities that can be fed to infants at various ages without causing indigestion, is also needed.

2. This survey confirms an oft-made observation that there is a tendency to withhold such important protein foods as meat and fish from children. In accounting for this, few of the mothers mentioned taboos. A number gave what may be described as "health reasons"—the belief that such foods would cause various illnesses. Most gave no reasons. These foods have one thing in common—apart from their nutritional value; they are all expensive. Cost was only occasionally mentioned during this survey as a reason for not giving such foods, but it is often raised as an objection when nutrition educators suggest to a mother that her child should have more of such foods. Surveys outside Accra (e.g. Davey, 1961) have shown that when fish is freely or cheaply available, as in coastal villages during the fishing season, it is given to children relatively often.

There was no evidence from this survey that taboos are a serious threat to the nutrition of infants in Accra. This is in line with the fact noted during surveys elsewhere in Ghana that taboos are not often concerned with foods that are readily and frequently available. (The flesh of water-tortoises and monkeys is tabooed more frequently than beef or mutton.) The exceptions to this rule are the avoidance of pork, not only by Moslems but by followers of some other sects; and the various taboos associated with eggs, which, though not greatly in evidence during this particular survey are certainly very widespread. There

is some reason to believe that this latter taboo is slowly yielding to the pressure of education, and if in the future eggs should become so readily and cheaply available that it was practicable for mothers in the lower-groups to buy them, the disappearance of the taboo would probably be greatly speeded up.

A more worthwhile target for nutrition education at present is the belief that meat given to children causes diarrhoea, worms, or tooth decay; together with similar beliefs sometimes expressed with regard to fish. However, even if these beliefs are dispelled, it does not necessarily follow that mothers will feed their children on these high-protein foods. Their cost remains an important barrier to their use for child-feeding. It seems likely that if plenty of meat, fish and eggs were available at reasonable prices the other arguments would die a natural death, as has already happened among well-to-do Ghanaians, and children would get a better share of such foods. The improvement of infant nutrition depends not only on education of the public in the importance of these foods, but also upon increased food supply and reduction of cost.

Further work

It became evident during the tabulation of results that the questionnaire needs to be redesigned before further work is done along these lines. The questions about the foods actually given to children were not sufficiently specific and need to be narrowed down and clearly related to the stage of the child's development. The beliefs need further thought. It is difficult to phrase satisfactory questions without "leading the witness" towards a desired answer, but unless it can be done this line of enquiry will not yield reliable results.

It is hoped for the next stage of the work to find a group of women for whom it is possible to make an estimate of economic as well as educational status, in order to shed some light on the question of whether unsatisfactory child-feeding practices are chiefly due to ignorance and/or erroneous notions, or to lack of money to purchase suitable foods. Since much of the work of nutrition educators is directed towards rural communities it is also desirable to repeat this survey in such areas.

References

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APPENDIX I

DURATION OF BREAST FEEDING

A. Number Taken from the Breast at various Ages in Months

Age in months	3 *or less*	4–5	6	7–8	9	10–11	12	13–14	15–17	18	24	30	36	*Total*
Both parents educated ..	6	1	6	5	25	13	45	5	5	21	4	—	1	137
Father only educated	1	—	2	6	15	3	56	4	5	49	12	2	1	156
Neither parent educated ..	—	—	—	1	—	2	22	9	7	39	20	4	2	106
Mother highly educated ..	3	2	2	1	1	—	1	—	—	—	—	—	—	10
All families	10	3	10	13	41	18	124	18	17	109	36	6	4	409

B. Duration of Mother's stay in Accra

Lived in Accra all her life ..	2	1	3	5	10	9	47	7	7	50	15	—	1	157
10 years or more	1	—	2	—	12	2	23	4	—	20	8	3	2	77
5–9 years	3	—	2	3	10	3	22	1	4	6	5	1	—	60
Less than 5 years	1	—	1	4	8	4	31	6	6	33	8	2	1	105
All families	7	1	8	12	40	18	123	18	17	109	36	6	4	399

Note: Highly-educated mothers were omitted from B.

APPENDIX II

NUMBER OF CHILDREN FIRST GIVEN SUPPLEMENTARY FOODS AT CERTAIN AGES

AGE IN MONTHS

	1	2	3	4	5	6	7	8	9	10	11	12	*Over* 12	*Total*
A. *Educated and non-educated parents*														
Both parents educated ..	1	4	43	22	6	19	8	14	12	1	1	3	—	134
Father only educated ..	—	4	32	26	13	28	6	10	5	3	1	10	2	140
Neither parent educated ..	1	4	14	19	6	15	5	3	2	3	—	9	1	82
Highly-educated mothers	—	—	4	2	1	1	1	—	1	—	—	—	—	10
All families	2	12	93	69	26	63	20	27	20	7	2	22	3	366
B. *Duration of mother's stay in Accra*														
All her life	1	3	38	31	11	19	7	8	6	4	—	7	1	136
10 years and over	—	2	20	11	6	13	4	5	4	—	1	4	1	71
5–9 years	1	4	11	13	3	13	2	6	3	—	—	3	—	59
Less than 5 years	—	3	20	13	5	17	6	8	6	3	1	8	1	91
All families	2	12	89	67	25	62	19	27	19	7	2	22	3	356

Note:

(1) Data from 43 forms were discarded as inaccurate

(2) Highly educated mothers omitted in B

C. NUMBERS OF CHILDREN SAID TO BE RECEIVING VARIOUS FOODSTUFFS—CLASSIFIED ACCORDING TO PARENTS' EDUCATIONAL STATUS AND TO LENGTH OF MOTHER'S STAY IN ACCRA

	Both parents educated	*Father only educated*	*Neither educated*	*Mother lived in Accra: all her life*	*10 years or more*	*5–9 years*	*under 5 years*	*All Families*
No. in group	137	156	106	157	77	60	105	399
NUMBER RECORDED AS GIVING THE FOOD TO YOUNG CHILDREN								
Ghanaian foodstuffs								
Maize pap (akasa, koko)	117	134	89	132	65	53	90	340
Other maize preparations (kenkey, banku, abolo, etc).	76	82	62	99	37	30	54	220
Tuwonsafey (cereal porridge as prepared in N. Ghana).	2	2	13	9	6	2	—	17
Rice	112	92	60	101	59	43	61	264
Bread	57	31	23	42	47	18	4	111
Plantain	57	64	26	45	44	29	29	147
Yam	91	81	49	85	49	44	33	221
Other fresh roots	9	—	2	3	2	4	2	11
Fufu	58	62	47	70	26	29	42	167
Dry cassava	12	9	10	11	2	11	7	51
Legumes	25	19	6	12	15	6	7	40
Fruits	32	28	15	35	10	16	14	75
Eggs	27	18	1	20	11	7	8	46
Meat and fish	12	9	8	18	3	4	4	29
Imported foodstuffs milk preparations								
Baby milk	65	48	16	41	30	26	32	129
Other milk	61	82	43	70	34	27	55	186
Flavoured milk drinks	42	25	9	27	22	11	16	76
Cereal baby foods	16	7	4	12	4	5	6	27
Custard powder	43	32	12	39	19	11	18	87
Oatmeal	31	23	5	27	7	13	12	59

APPENDIX III

QUESTIONNAIRE FOR INFANT FEEDING/PILOT SURVEY

Date..... Interviewer .....

Town..... Tribe.....

Place of Birth..... Age.....

How long living in Accra?.....

Education: Mother: Yes..... No..... Father: Yes..... No.....

Occupation of mother.....

Occupation of father.....

Number of children born..... Number alive.....

1. How long do you breast-feed your children?.....
2. What Ghanaian foods do you give to your children?.....
3. How early do you introduce them to these foods?.....
4. Do you prepare the child's food separately?

   (*a*) while breast-feeding.....

   (*b*) after breast-feeding.....
5. What imported foods do you give to your children?.....

   .....e.g. evaporated milk and tinned baby foods.
6. How much do you spend each week in feeding your child.....
7. Do you have any reasons why children 1–3 years should not eat the following?

Food Item	*Reasons*
Meat	.....
Eggs	.....
Fish	.....
Beans	.....
Fruits	.....

APPENDIX III—contd.

8. Do you have any experience of

(*a*) Meat causing diarrhoea to children.....

(*b*) Meat causing tooth decay.....

(*c*) Meat causing worms.....

(*d*) Fruits causing diarrhoea.....

Any other bad experience with food in feeding your child?.....

.....

.....

9. Which foods do your children like? (1–3 years)

Bread Rice Yam Plantain

Any other.....

.....

.....