CHAPTER 11

A PROFILE OF CHILDREN ATTENDING CHILD-WELFARE CLINICS IN ACCRA 1971

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Introduction

As part of a city wide cross-sectional study of children in Accra. a sample of children attending five clinics in different parts of the city was studied. Children of nursery and primary school age were selected by random sampling in the schools they attended. It was not possible, obviously, to get at children below the school age except at the Child Welfare Clinics. Advantage was taken therefore of these clinics. The clinics chosen were five in number stretching from Southwest Accra (Chorkor) to the North-east (Kotobaabi).

Like children attending school, children who attend child welfare clinics are a select group. Their mothers are health-conscious enough to take the trouble of utilizing services even when their children are not ill. It is the assumption that these mothers are in some sense more anxious about their children's health than those mothers who do not attend such clinics, and quite possibly their health indices would be above the average for the population as a whole.

Methods of Study

The team comprising a paediatrician and five nutrition assistants went to each clinic on two occasions at least. Three work stages were established to carry out the study at the clinic for the day, and a pre-coded questionnaire used at each stage:

Stage I   :   Interview of mother
Stage II   :   Physical Examination
Stage III :   Anthropometry

The areas studied were as follows:

1. **Parental Characteristics**
   a. Ethnic origin, social circumstances especially housing conditions, education, occupation of parents, and household expenditure.
   b. Mother's performance in terms of pregnancies, child welfare and use of services when pregnant.

2. **Characteristics of the Child**
   Birth history, feeding, illness patterns, clinical states, immunizations, developmental history and physical growth.

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The measurements taken to establish physical growth were:

 a. Weight
 b. Circumferences—head, chest, mid-arm, maximum calf circumference using a Rathbone —Chesterman steel tape
 c. Length—recumbent and crown-rump using the Harpenden Infant Measuring Table
 d. Subcutaneous Skinfold Fat—bicept, triceps, subscapulae and suprailiac using the Harpenden Skinfold Caliper
 e. Maximum Pelvic Width—using the Harpenden anthropometer

Social Classification of the Parents was based on an arbitrary system of scores for parental education and housing conditions as follows.

SCORE FOR EDUCATION

	Mothers	*Fathers*
Nil	1	0
Elementary	2	1
Secondary	3	2
University	4	3

SCORE FOR HOME CONDITIONS

	Score	*No Sleeping with Child in Same Room*	*Score*
Running water	1	less than 4 persons	3
Toilet	1	4-7 ,,	2
Electricity	1	more than 7 ,,	1

Using the above system the maximum social score is 13 and the minimum score, 2. A score of two denotes a child whose parents have never been to school and who live in a house with no running water, toilet facilities or electricity, and who sleep in the same room with more than seven other persons. The children in the study were then grouped into the categories shown below:

Social Group	*Social Score*
I (high)	11–13
II	8–10
III	5–7
IV (low)	2–4

Results

The study sample comprised 742 children of which 380 were male and 362 were female. Of these 135 (18.2%) attended the Chorkor Clinic, 44 (5.9%) the Princess Marie Louise or P.M.L. Clinic, 176 (12.8%) Kaneshie Clinic, 169 (10.9%) Kotobaabi and 218 (13.2%) the Ushertown Child Welfare Clinic.

Table 1

Number of Children at Each Child Welfare Clinic Visited

						Male	Female	Total	%
1. Chorkor	...	...	...	...	...	65	170	135	18.2
2. P.M.L.	...	...	...	...	...	26	18	44	5.9
3. Kaneshie	...	...	...	...	...	81	95	176	23.7
4. Kotobaabi	...	...	...	...	...	88	81	169	22.8
5. Ushertown	...	...	...	...	...	120	98	218	29.4
						380	362	742	100.0

One can note in Table 2 that 11.46 per cent of the children were between 1–4 weeks of age; about half were 5–24 weeks; 22.51 per cent, 25–52 weeks; 11.73 per cent, 53-104 weeks, and very few were aged 105 to 156 weeks.

Table 2

Children's Age by Attendance at Child Welfare Clinics in Accra

Children in the Sample			*Children in All Clinics* ('71 *Estimates*)		
Age	Total				
(Weeks)	No.	%	Age	No.	%
1– 4	85	11.5	Birth —1 month	3,766	11.3
5–24	383	51.6	1 month—6 months	17,363	51.9
25–52	167	22.5	6 months —1 yr.	8,381	25.0
53–104	87	11.7	1 yr. —2 yrs.	1,975	5.9
105+	20	2.7	2 yrs.+	1,976	5.9
				33,461	100.0

The percentage age distribution all for the Accra Clinics for the same year is also given in Table 2. The detailed age and sex distribution are shown in Table 3.

Table 3

Age and Sex Distribution of Children Attending Selected Child Welfare Clinics

Age (Weeks)	Study Sample	Age/Sex Distribution	
	Male	Female	Total
1– 4	35	50	85
5– 8	53	53	106
9– 12	55	44	99
13– 16	37	38	75
17– 20	33	23	56
21– 24	25	22	47
25– 28	21	23	44
29– 32	11	16	27
33– 36	18	15	33
37– 40	10	9	19
41– 44	10	10	20
45– 52	15	9	24
53–104	44	43	87
105–156	13	7	20
	380	362	742

Ethnic Origin of the parents is given in Table 4. The majority are Ga-Adangbe and Akan.

Table 4

Ethnic Groups Represented at the Clinics

	No.	%
Ga-Adangbe …	322	43.4
Akan … …	228	30.7
Ewe … …	103	13.9
Northerner …	89	12.0
	742	100.0

SOCIAL GROUPS

The children fell into the four social groups already described above. Thirty-seven children or five per cent were in the highest social group, 31.5 per cent in Group II; 46.2 per cent in Group III and 17.3 per cent in the lowest group—Group IV.

114

Home Conditions

All the children in the sample lived with their mothers: 36.4 per cent with their mothers only, and 63.6 per cent with both parents. Tables 5 shows that just over half the sample had no running water and about two-thirds had no toilet, 62 children slept in a room with only one other person, over half slept in rooms with one to two other persons. There was one child who slept with 13 others in the same room.

Table 5

Home Conditions of Children and their Families

Amenity	No. With	%	No. Without	%
Running water	322	43.4	420	56.6
Toilet	477	64.3	265	35.7
Electricity	453	61.0	289	39.0

Number Sleeping in a Room

No. per Room	Male	Female	Total	Percentage
2–4	217	223	440	59.3
5–8	153	129	282	38.0
9–	10	10	20	2.7
	380	362	752	100.0

Pregnancy and Delivery

Almost all of the children in the sample were born after a normal course of pregnancy, and only one girl in the sample was born prematurely. Most of the children were delivered normally, only 1 per cent needed other manoeuvres such as use of forceps and vacuum extraction (Table 6).

TABLE 6

Method of Delivery

	Male	Female	Total	Percentage
Normal	361	353	714	96.2
Caesarean Section	14	7	21	2.8
Others (Forceps, Vacuum) ...	5	2	7	1.0
	380	362	742	100.0

Of all the deliveries, about one-third of the sample were delivered in hospital, over half by a private midwife and very few at home.

TABLE 7

Place of Delivery

	Male	Female	Total	Percentage
Hospital	134	126	260	35.0
Private Midwife	225	214	439	59.2
Home and Other	21	22	43	5.8
	380	362	742	100.0

Multiple Births

There were 21 sets of twins and one set of triplets — all boys — in the study. But the mothers in the group had had 41 sets of twins all told: 9 boys, 16 girls and 16 boy-girl sets of twins.

Neo-natal Period

About 90 per cent of the children in the sample population had a normal neo-natal period. Neo-natal jaundice occurred in 9.5 per cent of the sample who were aged 4 weeks or under. Jaundice was more common in boys than in girls (Table 8).

TABLE 8

Neo-natal Illness

Condition	Study Children Aged 1–4 Weeks				Study Children Aged 5 Weeks or More			
	Male	Female	Total	%	Male	Female	Total	%
Normal	29	44	73	85.7	313	294	607	92.4
Jaundice	6	2	8	9.5	8	3	11	1.7
Diarrhoea	0	0	0	0.0	3	4	7	1.0
U.R.I.	0	2	2	2.4	17	9	26	4.0
Others	0	2	2	2.4	4	2	6	0.9
	35	50	85	100.0	345	312	657	100.0

Breast Feeding

Every child was breast-fed from birth except two who were never breast fed. About two-thirds of the sample were breast fed and also given other milk (Table **9**).

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Table 9

Breast Feeding

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	Male	Female	Total	%
Fully Breast fed	144	143	287	38.7
Breast and Artificial Feed	235	218	453	61.1
Artificial Feed Only	1	1	2	0.3
	380	362	742	100.0

Only 10 per cent of children over two years of age were still on the breast. By 63 weeks half were off the breast completely (Table 10). Supplementary weaning diets were introduced before one month in only 2.4 per cent of the sample. By nine months more than half of the children were on a supplementary diet. (Table 11).

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Table 10

Period of Breast Feeding

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Age	Total No.	On the Breast	Not on Breast	% on Breast
1– 4 wk	85	83	2	97.7
5– 24	383	371	12	96.9
25– 36	104	99	5	95.2
37– 52	63	52	11	82.5
53–104	87	47	40	54.0
105–156	20	2	18	10.0
	742	654	88	

Table 11

Introduction of Supplementary Diet by Age

Age (Wks.)				Total No.	On Weaning Diet	Not on Diet	% on Diet
1– 4	...	...	...	85	2	83	2.4
5– 24	...	...	...	383	12	371	3.1
25– 36	...	...	...	104	30	74	58.3
37– 52	...	...	...	63	43	20	68.3
53–104	...	...	...	87	87	0	100.0
105–156	...	...	...	20	20	0	100.0
				742	194	548	

Illnesses

Of the six illnesses specifically asked about, coughs and colds were the most frequent (33.7 per cent of the children). They were most common after the 24th week of life; 32.1 per cent of the children had had fever at least once; 70 per cent or more of the children over one year of age had had fever. Diarrhoea had occurred in 19.7 per cent of the children. It was most frequent from 25 weeks onwards. Thirty-one per cent of the children between one and two years had had measles but only 15 per cent over two years reportedly had measles. Convulsions were reported in 2.8 per cent of the children. None had occurred under 1 month. Worm infestation was the least frequently noticed. 11.7 per cent of all the children had been hospitalized before (Table 12 in the appendix).

Malaria Prophylaxis

After the 8th week of life, 37.5 per cent of the mothers gave anti-malaria regularly, 14.7 per cent occasionally and 47.9 per cent never. Thirty-two per cent of all the children were on anti-malaria regularly (Table 13).

Other Medicines

Many of the children were being given vitamin drops (30.3 per cent) and over a third of these children were between five and 24 weeks old. Laxatives, particularly Milk of Magnesia, were given to 10.5 per cent of the children and 11.8 per cent of these children were under four weeks of age.

Teething powders were given to 5.9 per cent of the children; and 14.2 per cent of the children got other types of medicaments (Table 14).

Table 13

Malaria Prophylaxis by Age of Receiving Child

Age (Weeks)	Regular		Occasional		Never		Total
	No.	%	No.	%	No.	%	
1–8	32	16.7	1	0.5	158	82.7	191
9+	206	37.3	81	14.7	264	47.9	551
	238	54.0	82	15.2	422	130.6	742

Table 14

Other Medicines Given by Age

Age	Vitamins			Laxatives		Teething Medicine		Others	
	Total No.	No.	%	No.	%	No.	%	No.	%
1– 4 ...	85	19	22.4	10	11.8	7	8.2	7	8.2
5– 24 ...	383	143	37.3	38	26.6	20	5.2	59	15.4
25– 52 ...	167	36	21.6	17	10.2	16	9.6	27	16.2
53–104 ...	87	20	23.0	13	14.9	1	1.2	10	11.5
105–156 ...	20	7	35.0	0	0.0	1	5.0	2	10.0
	742	225	30.3	78	10.5	45	5.9	105	41.2

Immunisations (See Table 15 in the appendix for a record of immunisations)

71.4 per cent of all the children had been given B.C.G., 44.6 per cent small-pox vaccination, 40.4 per cent vaccine against Diphtheria, Whooping Cough and Tetanus, 6.3 per cent Measles and 3 per cent polio vaccines. 20.8 per cent of all the children had had the triple combination of B.C.G. .++, D.P.T. +. and small pox, and 2.0 per cent the double combination of measles and polio vaccines. Thirty-seven out of 107 children over one year of age (i.e. 34.5 per cent of this group) had been given the combination of B.C.G., D.P.T. and small pox vaccines. Only 7.5 per cent had had both measles and polio vaccines.

+ D.P.T. Vaccine against Diphtheria, Whooping Cough and Tetanus also called Triple Vaccine.

++ B.C.G. Tuberculosis Vaccine (Bacille Calmette—Guerin.)

119

Physical Examination

Very few serious pathological conditions were found. Upper respiratory infections were the most common. Twenty-five children had septic skin or scalp infections. One child had a congenital heart lesion? (A.S.D.) but was free of symptoms. Very few children had any enlarged spleens or livers. Umbilical hernias were the most noticeable condition, found in 384 children (about half of the children). A few children looked mal-nourished but there were not many signs apart from low weights and skinfold fat measurements, particularly in children over one year of age.

Physical Development (Tables 16, 17)

The first approximation of the method of probils was used to estimate the mean age of achieving a developmental milestone. The mean ages for these milestones were:

1. Head Control — 18 weeks
2. Sits alone — 23 „
3. Stands alone — 53 „
4. Walks alone — 64 „
5. Closure of anterior fontacelle — 63 weeks
6. First Deciduous tooth — 35 weeks

TABLE 16

Age by Development as indicated by Anterior Fontacelle Closure and Teeth Present

Age (Weeks)				Total No.	Anterior Pontanelle		Deciduous Teeth Present	
					No.	Percent	No.	Per cent
1 — 12	...	...	...	...	290	0	0.0	0	0.0
13 — 20	...	...	...	...	131	0	0.0	4	2.8
21 — 28	...	...	...	...	91	4	4.3	12	13.1
29 — 36	...	...	...	...	60	8	13.3	15	25.0
37 — 44	...	...	...	...	39	16	41.0	34	87.1
45 — 52	...	...	...	...	24	7	29.1	20	83.3
53—104	...	...	...	...	87	65	74.7	86	98.8
105—156	...	...	...	...	20	18	90.0	20	100.0

TABLE 17

Age by Neuromuscular Development

Age (Weeks)	Total	Head Control		Sits Alone		Stands		Walks	
		No.	%	No.	%	No.	%	No.	%
1 — 12 ...	290	12	4.1	7	2.4	0	0.0	0	0.0
13 — 20 ...	131	68	51.9	19	14.5	0	0.0	0	0.0
21 — 28 ...	91	88	96.7	57	62.6	0	0.0	0	0.0
29 — 36 ...	60	57	95.0	55	91.6	9	16.3	0	0.0
37 — 44 ...	39	39	100.0	39	100.0	11	28.2	1	2.6
45 — 52 ...	24					8	33.3	4	16.7
53 — 104 ...	87					79	90.8	74	85.0
105 — 156 ...	20					18	90.0	18	90.0

Physical Growth Performance

These children at one month were within five per cent below Harvard Norms, rising above those by the third month. After the seventh month of life there comes a decline in growth performance from which the children never recover until about the age of three years. This decline is most evident in skinfold fat (Triceps) measure, and least noticeable with Recumbent length and Head Circumference measures. (See appendix for Table 18 and growth chart).

The Parents

Education.— Over half of the mothers in the sample did not go to school at all. Few fathers fell in this category. Most of the fathers had been to Elementary School but only over a third of the mothers; 121 fathers had either a secondary school education or had been to Teacher Training schools. Only 50 mothers had secondary schooling or teacher training. Twenty-one (2.9%) of the fathers had been to university as compared to only one mother in the sample (Table 19).

TABLE 19

Parents Education

	Fathers	%	Mothers	%
None	138	19.0	400	55.1
Elementary	446	61.4	275	37.9
Secondary	121	16.7	50	6.9
University	21	2.9	1	0.1
	726	100.0	726	100.0

Occupation.— Among mothers petty trading was the most common occupation (333 or 45.8%). Teachers, nurses and clerical workers formed only 10.4 per cent of the mothers group, and 23.7 per cent said they were housewives.

Among the fathers the most common occupations were clerical workers (28.2%), artisans (16.5%), professionals and higher executives (10.6%), and drivers (7.6%). (See Appendix for Table 20).

Expenses on Food, etc.

Families in Social Group I (the highest social group) spent 46 pesewas per head per day. The father contributed 63.1 per cent of this on the average, although 5.4 per cent of the fathers made no contribution at all and 16.2 per cent of mothers also did not contribute. There were 4.6 persons in such a household feeding from this sum. Money spent per head per day on food was 37p. and 36p. in social groups II and III, respectively, with a mean of 4.2 and 4.3 persons per household. In the lowest social group money spent per head per day was 24 pesewas. Fathers in the lower II social groups contributed 46.5 per cent and 56.6 per cent of this amount, respectively (Table 21).

TABLE 21

Food & Household Expenses per Day

Social Group	No. of Households	Persons per Household	Average Household Expenses ¢	Average Expenses per Head per Day P
I (high)	37	4.6	2.08	46
II	234	4.2	1.54	37
III	343	4.3	1.56	36
IV	128	4.7	1.13	24

Parents' Contribution: Household Expenses

Social Group	% Fathers Contributing	% Fathers Not Contributing	% Mothers Not Contributing
I	63.1	5.4	16.2
II	67.7	1.3	28.2
III	46.5	2.0	29.2
IV	56.5	3.9	21.9

Mothers' Performance

Duration of Stay in Accra — About half of the mothers were born in Accra; 19.6 per cent come to Accra in the last five years. A third of the mothers had continued to live in the houses in which they were born, but 41.5 per cent have been in their present house for five years or less (See Table 22).

TABLE 22

Length of Stay in Accra (Mothers)

	Duration in Town		Duration in Present House	
		%		%
Born here	393	54.1	245	33.7
0 – 5 years	142	19.6	301	41.5
6 – 10 ,, ...	120	16.5	134	18.5
11 – 15 ,, ...	36	5.0	30	4.1
16 + ...	35	4.8	16	2.2
	726	100.0	726	100.0

Child Bearing

Table 23 gives the age of the mothers and age at first pregnancy. The average age at the first pregnancy was 19.9 years and the mean age of the mothers at the time of the study was 25.8 years. The mean number of successful pregnancies was 3.1 (median 2.96). See Table 24 for number of successful pregnancies. The average interval between pregnancies was 2.8 years. Between them, the 726 mothers had delivered 2,270 children alive, an average of 3.10 per woman; 106 of these children had died in infancy, (i.e.

The infant death rate was lower in the two upper social groups (37.0 and 36.5 per 1,000) than in the two lower social groups (49.7 and 49.7 per 1,000). The rate of deaths of pre-school children also showed a gradation being lowest in the highest class and highest in the lowest social group. (See Appendix Table 25.)

Discussion

The children in the sample had an age distribution fairly close to that of the total child welfare clinic population in Accra in 1971. The age of the majority attending in either group was under six months (i.e., 63 %). With an estimated Accra population of 850,000 (1970) 20 per cent or 170,000 would be children under five years of age. This means that the child welfare clinic is used by about 20 per cent of the children in Accra. Since two-thirds of the children were under six months of age, it would seem that only seven per cent of the 150,000 children between six months and five years of age attended the Child Welfare Clinics.

123

TABLE 23   TABLE 24

	Number of Mothers by Age		Number of Successful Pregnancies	
Age (Years)	Frequency with a 1st Pregnancy at Given Age	Frequency in Age Group at Time of Study	Pregnancies	Frequency
14 – 16	90	15	1	195
17 – 19	274	76	2	174
20 – 22	241	168	3	113
23 – 25	74	140	4	74
26 – 28	38	116	5	65
29 – 31	7	91	6	60
32 – 34	2	46	7	17
35 – 37	1	42	8	8
38 – 40	0	21	9	10
41 – 43	0	3	10	10
44 – 46	0	7	11	0
47 – 49	0	2	12	0
			13	1

Children under six months are usually all on breast milk and are so close physically to their mothers that they can be regarded as "exterogestate fetuses."[1] It is after this period that the major problems of sickness and death in children arise in developing countries.[2, 3, 4, 5].

The mothers of the children in the sample received better care during pregnancy and at the delivery than mothers in any other large community in Ghana; 94.2 per cent had delivered either in hospital or by trained midwives. The national average is between 20–25 per cent. Most of the pregnancies were normal, and the deliveries were normal; 3.8 per cent needed Caesarean Section or other expert obstetrical intervention. Neo-natal illnesses were few. Of the youngest children seen (i.e., under five weeks) 85.7 per cent had normal neo-natal periods; 9.5 per cent had mild jaundice especially in the males, no doubt reflecting Glucose 6-phosphate dehydrogenase deficiency, which is an enzyme deficiency disease.

Breast feeding was universal from birth except for two children who were never breast fed. The mean age of complete weaning was just under one year three months. Supplementary foods became important from 25 weeks and by one year all the children were getting some supplements. The children were well nourished in the first six months as shown by their growth performance. Table 25 Things got bad after 6 months, and gradually the children's growth performance fell away from the Harvard Standards as has been demonstrated in many studies.[4, 6].

The mean age of attaining head control, sitting alone, standing without support and walking were 18 weeks, 23 weeks, 53 weeks and 64 weeks, respectively — using a first approximation of the method of probits. The mean of cutting the first tooth was 35 weeks. All these seemed more retarded than one's impression would have it.

Prophylaxes were the raison d'etre of the child welfare clinic, particularly with respect to malaria, infectious disease and nutrition. None of the children seen, had marked signs of malnutrition. If they had, they would have attended the malnutrition clinic instead, anyway. Yet after the first six months the children demonstrated poor growth.

Malaria prophylaxis was obviously not too successful. Only 52 per cent of children over eight weeks had taken any anti-malarials (Table 13). Some of the mothers did not seem aware of such measures. Children getting immunization are too few. B.C.G. had the best rate with 71.4 per cent of the children immunised. Measles and Poliomyelitis immunisation rated poorly with 6.3 per cent and 3.0 per cent respectively. The number of children who get all the prescribed regimens could not be more than seven per cent of the children aged one year or more. The failure of the immunisation programme is principally due to the irregularity of vaccine supplies and the fall off in attendance at the Child Welfare Clinic after six months of age. There is a clear need for a new strategy.

The study of the social circumstances under which these children lived formed one of the major aims of this study. Sixty-seven per cent of the sample lived with both parents. This is much higher than the figure of 35 per cent found in studying 7,000 school children in Accra.[10] Might there be better family stability or other factors such as education which would account for these families' use of the Child Welfare Clinics?

Housing conditions were however, not good. More than half the children lived in homes without running water; a third, without toilets, though 61 per cent had electric lights. On the average the child slept with three or four other persons in a room. These home conditions were probably of significance in the aetiology of infective diseases from which these children had suffered, especially after the sixth month of life (Table 12). The diarrhoea rate might also have been due to the large number of children receiving artificial feeding (61.4 per cent, Table 10).

The mothers had a mean age of 25.8 years and had had 3.1 children on the average. This is a young woman's group and they might be more susceptible to new ideas. Forty-six per cent were immigrants to Accra from other parts of Ghana. This group seemed to have stability with respect to residence. Only 25 per cent of those who had lived in Accra for more than five years had moved house in the previous five years. Fathers were better educated, but it might be assumed that maternal education was the more important to child life.

There were four categories or social groups established for purposes of comparison. Group I (highest) spent the most money per head per day on household expenses. There was a gradation by social group. Fathers contributed 65 per cent of this sum in the two higher groups and about 50 per cent in the lower. Paradoxically, fewer mothers in the highest social group did not contribute anything to the household expenses. There were also differences by social group with respect to fertility and child survival. The mean age at first pregnancy rises with social status so also the interval between pregnancies. (Table 25 in the Appendix).

Although there appeared to be a trend in increasing loss of infants (I.M.R.)* with worsening social status these differences were not statistically significant ($X^2=1.75$ d.f. p. 0.50) among groups. The I.M.R. estimate was 43.6 per cent. This was much higher than Gaisie's estimate of 23.9 per cent. (1967/68).[7] The estimated mean 1–4 year mortality was 9.7 per cent per year.

In this case, the difference by social group was statistically significant ($X^2 = 14.57$ d.f 3 0.005). The 1–4 year child mortality rate would appear to discriminate better among the formulated social groupings.

In Western countries such as the U.K., U.S.A. and France, when the I.M.R. was about 40–45 per cent (mid 1940's) the 1–4 year child mortality rate in these countries were about 10 per cent. The 1915–1925 Infant Mortality rates were about 100 per cent live births. Evidence in Table 26 suggests that the 1–4 mortality rate in Accra was three to four times higher compared to that in these Western countries. (See Appendix).

The picture in Accra, however, approaches that of nineteen developing countries such as Jamaica, Taiwan, and Sri Lanka in the sixties when they also showed an excess of pre-school child deaths. Of course, their figures are national, not a selected group such as the present sample.[8]

Compared to the Ghanaian National estimates (1960 Census) of an I.M.R. or 160 per 1,000 live births and 1–4 year mortality of 35 per cent, these Accra figures are low.

But then Accra has the best organised health care system with a quarter of all the doctors in the country, many health centres, private clinics, midwives and hospitals. The question that cannot be answered is the influence of the Child Welfare Clinics on these figures. Although the public health nursing service in Accra is vigorous with about 45 public health nurses, 60 community health nurses and many nutrition assistants it reaches not more than 20 per cent of the child population, and its performance at prophylaxis is not good. Yet most parts of Ghana will not achieve the level of staffing of Accra for a long time to come.

From the evidence here, at any rate, one can suggest taking a very hard look at the form of the child health protection services in Accra, as suggested elsewhere in the Developing World, with a view to reaching as many of the children as possible.[5, 9]. More effective ways of reaching the community will have to be devised. Community awareness of the benefits of health protection for their children should be increased. This may be through community activation by social workers and health educators, and through the use of the mass media.

In the long run one of the most fruitful areas would be in the education of children at school in ways which will improve their attitude to health for themselves and for their families.

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TABLE 12

Record of Types of Illnesses Frequently Reported at Child Welfare Clinics

Age (wks)	Total No.	Diarrhoea		Fever		Convulsions		Worms		Coughs Colds		Measles		Children in Hospitals	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1–4 ...	85	4	4.7	5	5.9	0	0.0	0	0.0	0	9.4	0	0.0	5	5.9
5–24 ...	383	44	11.5	67	17.5	4	1.0	1	0.3	80	20.9	4	1.0	43	11.2
25–52 ...	167	51	30.5	90	53.9	11	6.6	3	1.8	60	35.9	14	8.4	18	10.8
53–104 ...	87	38	43.7	62	71.3	5	5.7	4	4.6	35	40.2	27	31.0	15	17.2
105–156 ...	20	9	45.0	14	70.0	1	5.0	3	15.0	7	35.0	3	15.0	6	30.0
		146	19.7	238	32.1	21	2.8	11	1.5	120	33.7	48	6.5	87	11.7

TABLE 15

Immunization of Sample Children Attending the Clinics by Age

Age (wks.)	Total No.	B.C.G.		Smallpox		D.P.T.		Polio		Measles		B.C.G. D.P.T. Smallpox		Measles Polio	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1– 4 ...	85	63	74.1	45	52.9	4	4.7	2	2.4	0	0.0	3	3.5	0	0.0
5– 24 ...	383	277	72.3	141	36.8	121	31.6	16	4.2	5	1.3	50	13.1	1	0.3
25– 52 ...	167	126	75.4	92	55.1	110	65.9	28	16.8	19	11.4	64	38.3	6	3.6
53–104 ...	87	49	56.3	40	46.0	46	52.9	12	13.8	21	24.1	30	34.5	7	8.0
105–156 ...	20	15	75.0	13	55.0	9	45.0	1	5.0	2	10.0	7	35.0	1	5.0
	742	530	71.4	331	44.6	330	40.0	59	3.0	47	6.3	154	20.8	15	2.0

TABLE 18

Physical Growth Characteristics by Age

Age	1mo.	3mo.	6mo.	9mo.	12mo.	18mo.
Std. Wt. in Kg.	4.3	5.7	7.4	8.9	9.9	11.3
Sample Mean	4.0	6.0	7.5	8.4	9.1	9.5
% of Std.	93.0	105.2	101.3	94.3	91.9	84.0
Std. Length in cm.	54.8	60.0	65.8	70.7	74.7	81.4
Sample Mean	53.6	60.8	67.2	71.0	74.2	78.2
% of Std.	97.8	101.3	102.1	100.4	99.3	96.0
Std. Head Circ. in cm.	—	40.4	43.2	45.7	46.6	47.9
Sample Mean	36.4	39.7	42.5	44.5	45.0	45.3
% of Std.		98.2	98.3	97.3	96.5	94.5
Std. Arm Circ. Boys in cm. ...	11.5	12.7	14.5	15.8	16.0	15.7
Sample Mean (Boys) ...	10.6	12.5	13.5	13.3	13.5	13.5
% of Std.	92.1	98.4	93.1	84.1	84.3	85.9
Std. Triceps Skinfold Fat in Mm.	7.6	9.2	10.0	10.2	10.3	10.3
Sample Mean (Boys)	7.5	9.2	8.9	8.6	8.2	6.7
% of Std.	98.6	100.0	89.0	84.3	79.6	65.0

TABLE 20

OCCUPATION

Fathers					No.	%	Mothers	No.	%
Clerical Workers	...	...	...	...	205	28.2	Petty Traders	335	45.8
Artisans	...	...	...	...	120	16.5	Housewife	172	23.7
Professional/Higher Executive				...	77	10.6	Seamstresses	83	11.4
Drivers ...	...	...	...	...	55	7.6	Clerical Workers	44	6.1
Labourers	...	...	...	...	46	6.3	Fishmongers	32	4.4
Uniformed Services	...	...	...	40	5.5	Teachers	24	3.3
Fishermen/Farmers	...	...	...	29	4.0	Hairdressers	7	1.0
Technicians	...	...	...	...	32	4.4	Nurses	7	1.0
Traders	...	...	...	...	45	6.2	Others	24	3.3
Teachers	...	...	...	...	27	3.7			
Cooks ...	...	...	...	...	4	0.6			
Others ...	...	...	...	...	36	5.0		726	100.0
					726	100.0			

TABLE 25

MATERNAL PERFORMANCE BY SOCIAL GROUP

Social Group			No. of Mothers	Present Age	Age at 1st Pregnancy	Mean No. of Birth	Mean Interval Between Births	"I.M.R." per 1,000	"1-4 MR" per 1,000	Age at Menarche
I	...	...	35	28.0	22.6	2.33	4.0	37.0	3.5	14.9
II	...	...	230	26.0	20.5	2.77	3.1	36.5	5.8	15.4
II	...	...	338	25.4	19.3	3.21	2.8	49.7	9.1	15.1
IV	...	...	123	26.6	18.9	3.97	2.6	40.7	17.0	15.1
			726	X=25.8	X=19.9	X=3.10	X=2.8	X=43.6	X=9.7	

X = mean
I.M.R. = Infant Mortality Rate

Table 26

Mortality Comparisons by Country and Year

Country	Year	I.M.R.	1–4 M.R.
U.S.A.	1918	99	9.6
U.K.	1921–25	76	8.5
France	1925	95	8.6
U.S.A.	1941	45.3	2.8
U.K.	1946	42.9	2.2
France	1951	45.1	3.3
Mauritius	1956	66.0	10.0
,, ...	1965	64.1	7.1
Taiwan	1956	33.1	10.0
Jamaica	1961	48.8	6.0
St. Vincent	1966	65.0	19.6
Sri Lanka	1962	52.8	12.4
,, ...	1963	55.0	10.0
Ghana	1960	160.0	34.0
Accra	1971	43.6	9.7