AN EXPERIMENT IN COMMUNITY APPROACH IN DELIVERY OF HEALTH SERVICES IN RURAL AREAS

PART II

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Introduction :

In the first paper (1) the objectives and method of work were discussed.

The activities went on regularly in the Karaiba Village. Treatment of acute diseases, health and nutrition education, cooking of home made weaning foods, vaccination, antinatal care and family spacing went on weekly. Weighing of children and other anthopometrical measurements were done at specified intervals. Bilharzia and malaria control and other sanitary measures went on periodically.

This paper is a one year follow up after all the above activities were going on regularly.

RESULTS

1. **Questionare** :

As expected there was not much change in the population structure and related results.

Birth rate was significantly reduced (Table I)

Table II shows the incidence of certain diseases, among children, there was a significant drop.

Table I also shows the infant mortality and the 1-5 yearly mortality, illustrating a definate drop.

.Anthropometrical measurements :

Table III shows the mean and standard deviation of weight, height, head, chest and midarm circumferences and midarm thickness of children five years and under, sexes combined. Fig I shows the weight of children, sexes combined, compared to that of children before the experiment and to the Boston Standard.

3. **Endemic diseases** :

The results of re-examination of stools for Bilharzia 3 months and 1 year after treatment are shown in Table IV.

4. **Nutritional Status** :

Table V, shows the nutritional status using Gomez Classification. Table VI, VII show those with frank signs of malnutrition.

5. **Vaccination** :

Tables VIII, IX show the number of children who have received the different vaccines.

6. **Family Spacing** :

Fig 2 shows the number of women attending the family spacing clinic.

Discussion :

Assessment of the impact of community medical care would need continuous periodic evaluation. This paper compares the results of eighteen months after the beginning of the experiment to those before. It took about six months to include all the mentioned services and regulate them, so this is really a one year follow up.

It is too early to expect any change in the population structure and related results. Again as the number of new births was relatively small, it was too early to look for changes in maternal attitudes in breast feeding, supplementation and weaning pratices.

There was a definite decrease in birth rate. This was a definate impact of family spacing.

Child morbidity and mortality dropped. This, of course is due to multiple factors. But control of infectious diseases and improvement of nutritional status are the two most important factors. The successful vaccination against whooping cough, B. diphtheria, Tetanus, Tubercolosis and specially against measles (Table VI, VII) contributed alot. Control measures against bilharzia and malaria also payed.

Third degree malnutrition (Gomez Classification 2) droped from 11.3% to 7.4%. More significant was the drop of frank cases of protein energy mal nutrition (Welcome Classification 3) from 16, to 4 cases. Average gain in weight was remarkable (Table III) especially at the age of 24 months where it reached about 2 kg. The improvement of sanitary conditions-both personal and environmental-through health education, and family spacing also contributed to reduce child morbidity and mortality.

The improvement of nutritional status was primarily due to nutrition education and cooking of home-made weaning foods (4). These cheap nutritious foods, made from ingredients practically available at all homes, and cooked in the traditional manner are well accepted and easily cooked at home. These, we hope will make a change in the Sudanese food habits, at present, there is no special food for children in the Sudanese Culture.

The control of bilharzia was better at 3 months after treatment than at 1 year. This was due to reinfection. Although cleaning of the canals and application of copper sulphate were good at the beginning, but this could not be maintained and snails are continuously carried over from main canals. Till a more radical means of killing snails is found the local efforts should be continuous and not spasmodic. The same should apply to control of malaria where it is easier and more gratifying.

Family spacing, which was started a bit late in the experiment succeeded because people already had faith in the experiment and the team. So whatever was said to them, they knew it must be for their own good. Another reason was that people realised that chances of survival of their children were better, so that even the weak argument of having many children so that when some die others would remain did not apply. People also were assured that religion is not against family spacing.

Involvement of local people and organisations made the people feel that this work is theirs, so that it must succeed. This also reduced the expenses remarkably. The people realised the limits of what they could do and what they could ask for. Grants are always welcome. It provides more fascilities and service. The $10,000 grant by the International Planned Parenthood Federation (IPPF) was successfully utilised in paying the expensive, but really needed measles vaccine. Measles accounts for nearly 20% of child mortality, it is also a common cause of morbidity and an important aetiological factor in malnutrition. The grant was also utilized for buying some drugs. Treatment of ill cases was a good motivation and a tangible advantage to the village people.

Community medicine provides a practical blend of curative and preventive medicine without sensitivities. The work is done by a team and each person knows his part in the team. Medical Officers in the districts are well equipped to lead such teams. The team could include whoever is helpful, but the doctor, health visitor, health inspector, chairmen of local village organizations and village midwife should always be part of the team. A doctor can lead more than one team in different villages arround his hospital. In future the plan is to make medical assistants and/or health visitors leaders of such teams. This would mean spreading resources more widely and insure better coverage. This might lower the level but will not reduce the effectiveness to meet common conditions (5, 6).

Other disciplines whose cooperation would lead to promotion of health could be included in the team. For example in the Karaiba experiment we are asking the advice of the agriculturists and veterinarians to make a dairy and poultry farm. This would insure good and cheap suply of milk, eggs and meat it would also be a source of income to the project.

This experiment follows the changing concept on delivery of health services in the past decade. New terms like comprehensive care, primary health care and community medicine have emerged (7). This would have implications for doctors and their work. Curricula of medical schools have to change to prepare future doctors to meet the challenge.

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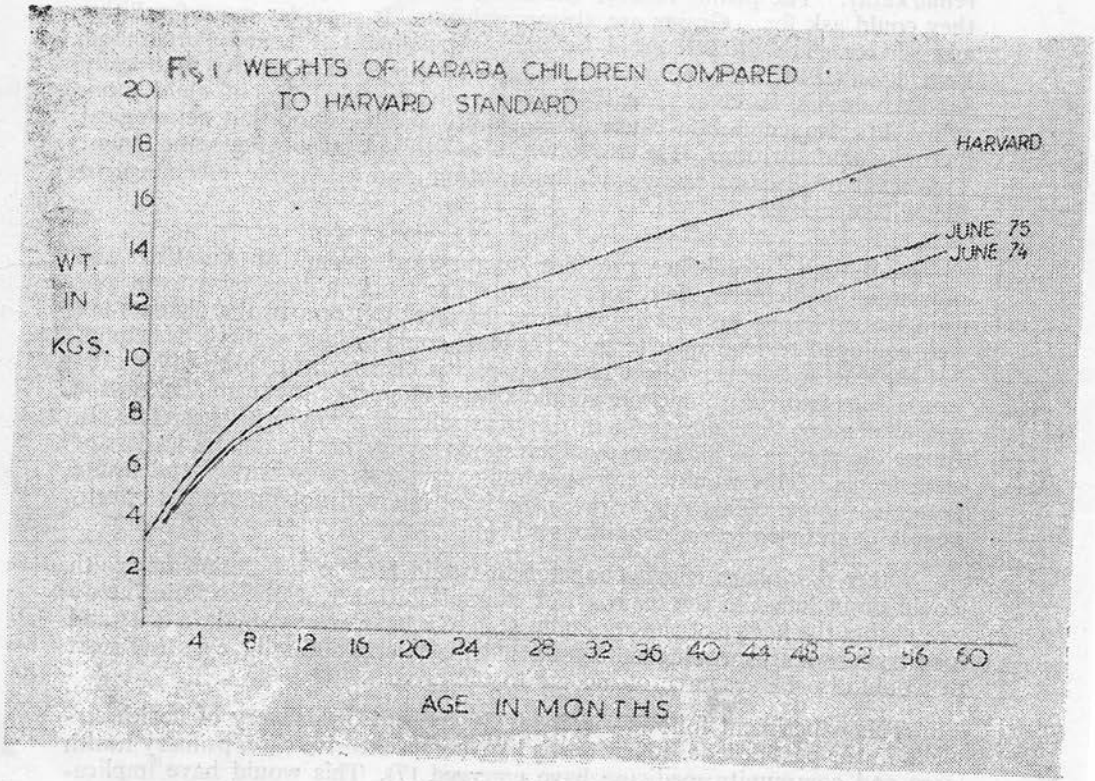
FIG. 1 WEIGHTS OF KARABA CHILDREN COMPARED TO HARVARD STANDARD
HARVARD
JUNE 75
JUNE 74
WT. IN KGS.
20
18
16
14
12
10
8
6
4
2
4 8 12 16 20 24 28 32 36 40 44 48 52 56 60
AGE IN MONTHS

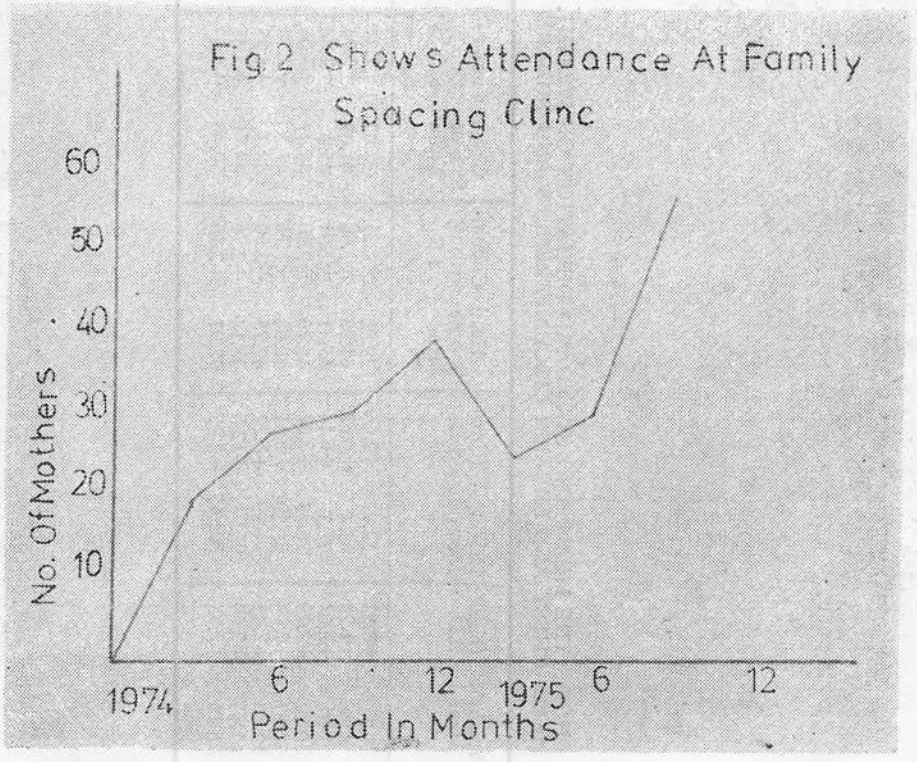
Fig 2 Shows Attendance At Family Spacing Clinc
60
50
40
30
20
10
No. Of Mothers
1974
6
12
1975
6
12
Period In Months

TABLE 111 SHOWS THE MEAN AND STANDARD DEVIATION OF WEIGHT. HEIGHT. HEAD; CHEST AND MIDARM CIRCUMFERENCES AND MIDARM THICKNESS.

Age Group	Number of Children	Weight Mean	(Kgs.) S.D.	Height Mean	(Cms) S.D.	Head ference Mean	Circum- (Cms) S.D.	Chest ference Mean	Circum- (Cms) S.D.	Midarm ference Mean	Cir- (Cms) S.D.	Mean	Midarm Thickn essmms S.D.
0—3	16	5.2	±0.83	54.97	±2.66	39.82	±2.31	38.02	±2.31	11.4	±1.72	7.0	±0.84
4—5	18	6.86	±1.28	65.4	±6.62	41.98	±3.60	41.07	±3.74	12.29	±2.63	7.97	±1.78
6—11	22	9.10	±2.04	71.3	±6.14	45.41	±2.01	45.0	±2.84	12.60	±1.17	8.7	±2.07
12—17	23	10.22	±2.29	76.45	±8.04	46.40	±2.20	46.47	±3.04	13.06	±1.02	9.41	±1.91
18—23	22	10.87	±2.04	81.50	±6.61	47.04	±1.78	47.2	±3.16	13.27	±1.27	9.45	±2.56
24—35	27	12.40	±2.42	91.89	±8.22	47.75	±2.50	48.3	±4.23	13.50	±1.61	9.50	±2.11
36—47	24	13.45	±2.60	96.93	±12.8	48.14	±2.76	49.81	±3.45	14.02	±1.28	9.6	±2.13
48—60	38	15.15	±2.85	104.47	±2.95	48.97	±2.16	50.40	±4.09	14.46	±1.34	9.8	±1.91

TABLE I SHOWS THE BIRTH RATE AND YEAR MORTALITY AMONG CHILDREN UNDER FIVE IN THE YEAR 1974

Year	Birth	MORTALITY/1000 of children in the same age				
	Rate/1000	Ist.year	2nd.year	3rd.year	4th.year	5thyear.
1974	.... 31.7	70.5	36.2	21.6	0.0	12.1
P = 0.05 — .001						

TABLE II SHOWS THE OCCURANCE OF CERTAIN DISEASES AMONG CHILDREN IN 1974/75

Diarr-hoea	Chest Infect-tion	Measles	Who-ping Cough	Paralytic Poliomy-elitis	Mala-ria	Bilh-ar-zia	Diph-ther-ia	Tetan-us
83	57	3 (not vaccin-ated	—	1	52	10	—	1
	P = 0.05							

TABLE IV SHOWS NUMBER TREATED AND RESULTS AFTER THREE MONTHS AND ONE YEAR

	No. Treated	After 3 Months		After one year	
		No. Attending	Positive Bilharzia	No. Attending	Positive Bilharzia
		B.M. 165	22(13.3%)	138	45(33.5%)
Men	238	B.H. 21	1(4.9%)	16	3(18.8%)
Women	134	B.M. 80	13(16.2%)	71	17(24.0%)
		B.H. 14	2(14.3%)	11	1(9.0%)
Children	496	B.M. 358	28(7.8%)	366	78(21.3%)
		B.H. 112	7(6.3%)	89	16(18.0%)
	868	750	73(9.7%)	691	160(23.2%)

TABLE V SHOWS THE NUTRITIONAL STATUS USING GOMERZ (1955) CLASSIFICATION

Order	Number	Percentage
Normal	55	29.1%
First degree	79	41.8%
Second degree	41	21.7%
Third degree	14	7.4%
Total	189	100%

TABLE VI SHOWS CLINICAL SIGNS OF MALNUTRION

Pale conjunctiva	13
Atrophic Pappilae	4
Koilonychia	2
Angularstomatitis	6
Chelosis	4
Bitot's Spots	2
Conjunctival Xerosis	2
Keratomalyacia	1
Spongy Gums	—
Epiphysial Enlargement	1

TABLE VII CASES OF P.C.M. WELCOME CLASSIFICATION, JUNE 1975, 189 CHILDREN

P.C.M.	Number	Percentage
Marasmus	2	1.05
Marasmo-kwashiorkor	2	1.05
Kwashiorkor	—	—

TABLE VIII SHOWS NUMBER OF CHILDREN FIVE YEARS AND UNDER WHO HAD POLIOMYELITIS AND TRIPLE VACCINE UP TO JUNE 1975.

VACCINE	Poliomye-litis	Triple
First dose	13	13
Second dose	23	23
Third dose	140	136
First Booster	78	75
Percentage	81.8	80.2

TABLE IX SHOWS NUMBER OF CHILDREN FIVE YEARS AND UNDER WHO HAD B.C.G. AND MEASLES VACCINE UP TO JUNE 1975

		MEASLES	B.C.G.
Number	95	(143 had already had measles)	273
Percentage		77.3%	88.6%

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