A PROGRAMME FOR FAMILY PLANNING SERVICES DURING POST PARTUM IN CAIRO

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INTRODUCTION

In a broad sense, this paper is concerned with the advantage of a system in which family planning would be treated as an integral part of the health and midical organization for maternity case. Such an approach is to be contrasted with a programme stressing general, perhaps somewhat random, public education along with birth control clinics or other services for all who may, as a result of general propaganda, be inspired to attend. The two systems are, of course, not mutually exclusive, nor would they be competitive in practice. Undoubtedly elements of each must enter into every national or regional programme and ndeed, in time one system might evolve into the other.

Only a little consideration is needed to show that contraceptive advice given shortly after parturition will be more effective, in preventing conception, than advice offered at some later date.

Relative Effectiveness of Begining Contraception At Various Monts After Firist Post—Partum Period.

Months after First Post partum Menestrual Period	Pregnant at End of Month (per cent)	Pregnancy Potential at Begining of Month
0	4.8	0.321
1	18.7	.315
2	37.6	.292
3	53.0	.247
4	61.9	.190

(Cont.)

Months after Finst. Post Partum Menestrual Period	Pregnant at End of Month (per cent)	Pregnncy Potential at Begining of Month
5	67.5	.147
6	71.3	.117
7	74.2	.098
8	76.4	.086
9	78.3	.079
10	79.8	.073
11	81.2	.069
12	82.5	.066

This table[1] assumes that contraception is not being used and, further, that there is a 5% incidence of in fertility after any delivary. The table is constructedon the basis of months after the first menstual period and not after date of delivary.

All this have drawn my attention to prepare this paper begining by a programme to be tried in Cairo and to be generalised all over the country in the future.

It is hoped that the prrogramme will help in reducing the high crude birth rate, which is about 42.9 per thousands for Cairo population in 1966, which was assumed as the statrting year for the programme.

It should be noted that our analysis is primarily based on the data of 1960, and 1966, Censuses, and on some assumptions, which were partly made by us or adopted from researchs prepared at the North African Demographic Centre.

Our calculations involve a period of ten years, from 1966 to 1976, which is the maximum period to which more or less realistic projections can be made.

We hope sincerely that the result of this analysis will be helpful to all those working in the field of Family Planning.

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(1) Family Planning and Population Programs (A Review of world Developments) hapter 35 by, Howard C. Taylor, N.M.D.

ESTIMATION OT THE INITIAL AGE-SPECIFIC FERTILITY RATES

It was first essential to know the present (1966) fertility level for Cairo, This is not as easy as it seems to be. The estimations were primarily based on 1960 Census data (Vol. 1, table 54), and it has been assumed that the level of fertility in 1966 is the same as in 1960, which should be more or less true.

The estimation of the fertility-function i.e. the age-specific fertility rates was crried out as follows :

(*a*) The cumulative average number of children born to married females was calculated from 1960 census data (Vol. 1), from the table giving the break-down of females by mumber of children ever born to them and age.

(*b*) Trom the average number of children, age-specific fertility rates were calculated, by means of standard methods, (subsequent differences of cumulative rates refering to five years were converted into age-specific rates, referint to one calender year) Table (1).

(*c*) If was supposed, that the shape of this fertility function will probably represent the Cairo pattern, since the proportion of non married females is very low within the reproductive age-span.

(*d*) The G.R.R. which follows from these rates was found to be 2.92 which is very near to an estimate given in one of the researchs done in the North African Demographic Center.[1]

(*e*) These age-specific rates were subject to comparative avalysis in ordet to test thier reliability, and it was found that they represent a correct fertility function and were found to be the best from among the rates againist which they were tested. They were therefore adopted as basis of calculations for 1960 and 1966. (Table 2).

All calculations and considerations were based on the 1960 and 1966 census data.

From a research by author on «Possible Effects of the National Family Planning Programme on the Future Population of U.A.R.», North African Demographic Centre April 1967.

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(1) Research on «Population Trends in Cairo» by Mrs. Ferial Abdel Kader. The analyisis carried out sofar shows that the G.R.R. for Cairo in 1960 was 2.99.

TABLE 1

Calculation of Age-Specific Fertility Rates from the 1960 Census of Population for Cairo (Married Temales only)

Age Groups	Cumulative Number of Births Per one Female	Differences	A's for one year In the age grop (Fertility Rates)	Percentage % or Rates
15—19	0.497	0.497	99.4	8.3
20—24	1.734	1.237	247.4	20.6
25—29	3.377	1.643	328.6	27.4
30—34	4.640	1.263	252.6	21.1
35—39	5.604	1.064	192.8	16.1
40—44	6.002	0.398	77.8	6.5
			1198.6	100.0

TABLE 2

Percentage Distribution of Age-Specific Fertility Rates in 1960 Under Different Conditions

Age	Rates Calculated Trom Vital Statisties	Analytical Estimation	Rates for U.A.R. Estimated from 1960 Census
15—19	3.0	8.3	7.1
20—24	16.2	20.6	18.3
25—29	29.5	27.4	25.9
30—34	27.5	21.1	22.1
35—39	18.2	16.1	17.4
40—44	5.6	6.5	9.2
Total	100.0	100.0	100.0

The age-specific firtility rates (with GRR = 2.92) Tepresent a crude birth rate of 42.9 per thousand, which is very near to the reported official rates, and also to other estimations.

CORRECTION OF THE 1960 AGE-DISTRIBUTION

The age distribution as reported in the 1960 census shows all signs of misstatements and omissions, specialy in case of females, and had therefore to be corrected. There is an inflation of females in age-group 25—29 and lack in age-group 20—24, and other age groups as can be seen from table (3). The lack in age group 20—24 in favour to subsequent age group.

The smoothing procedure was done according to the formula :

$$P = 1/16\ (-P_{-2} + 2P_{-1} + 10P_{+1} - P_{+2})$$

TABLE 3

Cairo Population of 1960 Census by Age Groups Before and After Correction

Age Groups	Females		Males	
	Before Correct.	After Correct.	Before Correct.	After Correct.
0—4	255729	255088	269986	269705
5—9	239049	238450	249106	248847
10—14	210204	209677	207336	207122
15—19	148730	148357	146267	146115
20—24	129930	133934	134079	133940
25—29	142942	132502	124889	126538
30—34	107460	107191	125426	125296
35—39	104891	104628	113923	113804
40—44	68316	68145	90668	90574
45—49	62107	61952	70696	70623
50—54	56230	56089	62594	62530
55—59	31997	37734	38281	38242
60—64	34223	34137	38253	38214
65—69	14414	18409	17761	17742
70—74	15415	15376	14003	13988
75+	12837	12805	11037	11025
Total ...	1634474	1634474	1714305	1714305

TABLE 4

Estimation of Crude Birth Rate for 1960

Age-Groups	Number of Females in 1960 Census Corrected	Age Specific Fertility Rates	Number of Births
15—19	148357	99 .4	14746
20—24	133934	247 .4	33135
25—29	132502	328 .6	43540
30—34	107191	252 .6	27076
35—39	104628	192 .8	20172
40—44	68145	77 .8	5301
Total ...	694757	1198 .6	143970

C.B.T. = 42 .9 per thousand.

Where :

P is the age group needed to be smoothed

P_{-1} and P_{+1} The age groupsb efore and after the age group to be smoothed.

P_{-2} and P_{+2} The age groups before and after P_{-1} and P_{2-}

Both female and male age distribution were smoothed according to this formula.

The corrected and original age distributions can be seen in table (3) and the former was used when calculating the crude birth rate, which gave the afore mentioned result of 42.9 per thousand.

ESTIMATION OF THE 1966 AGE DISTRIBUTION

The National Family Planning Programme has started in 1966, so the basis population which will serve as the initial population for our calculations should be that of 1966.

Since the totals of the population for 1966 are only published, it was essential for us to estimate the age distribution for Cairo population from its total in 1966. This was done by assuming the same age composition in 1960 census for 1966c census returus, and the census totals in 1966 were distributed according to that.

We belive that the age composition during this short period did not differ so much, and be considered as appropriate, assuming that fertility and migration were constant during the period 1960—1961.

The age distribution for 1966 can be seen in table (5)

ESTIMATION OT THE AGE-SPECIFIC FERTILITY RATES FOR LITERATE AND ILLITERATE FEMALES

The estimations were primarily based on 1960 census data (Vol. 1 table 55). The calculations were carried out as follows :

(*a*) The average number of children per wife was colculated for the total married females, married females, married litrates and married illiterate

(*b*) Ratios to children of total married females (ratios to the average) were then calculated for both litrates and illitrates.

(*c*) These ratios were then used to correct the general age specific frtility rates for both litrates and illitrates. (table 6).

(*d*) The GRR which follows from these rates was found to be 2.3 for litrates and 3.1 for illitrates.

TABLE 5

Cairo Population in 1966 by Age-Groups Assuming The Same Age Composition in 1960

Age-Groups	Males	Females	Total
0—4	338326	319620	657946
5—9	312103	298736	610839
10—14	259655	262698	522353
15—19	183135	185916	369051
20—24	167874	167693	335567
25—29	158630	166055	324685
30—34	157126	134318	291444
35—39	142724	131042	273766
40—44	113492	85382	198874
45—49	88558	77602	166160
50—54	78455	70230	148685
55—59	48148	47298	95446
60—64	47718	42793	90511
65—69	22354	22932	45286
70—74	17411	19247	36658
75+	13756	15971	29727
Total ...	2149465	2047533	4196998

TABLE 6

Calculation of Age-Specific Fertility Rates for Literate and Illiterate Females, Cairo, 1960.

— A —

Item	Total Married Females	Illiterate	Literate
Number if women	597970	442233	155737
Number of Children	2504532	1976007	528525
Average number of children wife	4.188	4.468	3.393
Ratios to Children of Total Married Females (Ratios to the Average)	—	1.0668	0.8101

— B —

Age-Groups	General Rates G.R.R. 29	Rates for Illit. G.R.R. 3.1	Rates for Lit. G.R.R 2.3
15—19	99.4	106.0	80.5
20—24	247.4	363.9	200.4
25—29	328.6	350.5	266.2
30—34	252.6	269.5	204.6
35—39	192.8	205.7	156.2
40—44	77.8	83.0	63.0
Total	1198.6	1278.6	970.9
Total Fertility Rate	5993.0	6393.3	4854.9
Completed Family Sizie (for Cairo)	5.9	6.4	4.8
Completed Family Size (for U.A.R.)*	6.6	6.7	5.6

* From a research by Author on «Possible Effects of the National Family Planning Programme on the Future Population of U.A.R.» North African Demographic Centre April 1967.

SOCPE OF THE PROGRAMME

At this point it is proper to pause to consider briefly the essential elements in a family planning program integrated with a maternity service. The lying—in period i.e. the days immediatly after delivery should be used to sharpen the woman's interest and to import the idea that a decision about family planning must be made before a predictable first ovulation, this time depending to a degree on her intent with respect to location. A particular advantage to this approach is that the woman will be introduced to the idea of family planningwith emphasis on the principle of «child spacing.». Whether or not she heeds the advice at this time, the seed of the idea will have been planted, and with the regular repetition of the same advice, action will probably be taken.

A small point, perhaps, but one which should be mentioned, is that the intera—uterine device canbe inserted particularly easily during the puerperium. Whether the device can be inserted, with a reasonable chance of its remaining in place, during the first post-partum hours or days, is a point still to be determined. It is clear, however, that for several weeks, the cervical canal remains readily dilatable so that passage of the inserter is particularly easy.

In fact all women, whether delivered in a hospital or at home, should have this bedside visit, but according to our situation here in Cairo as regards the place and supervision of delivery, the 1960 figures show that about 68.7 percent of all delivaries occur in hospitals or under physieian's supervision, where as 24.4 percent are supervised nurse or midwife domiciliary delivaries the remaining 6.9 percent were actualy unsupervised home delivaries. This group, of course offers the greatest problem. The long-term effort should be towards the expantion of maternity services , so that no woman will have to accept the risk of a completely unsupervised pregnancy, and this as we belive in a big city like Cairo can be covered in a ten years period. Although these women, now, may be relatively inaccessible to the health and medical authorities, the whole problem will become some-what easier if it is recognized that the women immediatly and primarily at risk are the ones towards whom the greatest educational efforts should be directed, these actualy constitute the 24.4 percent (in 1960) of the supervised nurse of midwife domiciliarydelivaries (done by M.C.H. centers) these are mostely uneducated women, and no means of education can be benificial to them as face to face bed side vesits. Delivaries occuring in hospitals or under pbysicion's supervision, does not, as we belive have a great role in the problem, as most of them are usually educated well to do women who can be convenced by other means of education i.e (audio-visual means, pamphlets etc...) and the programme to start with should concenterate on delivaries supervised by M.C.H. centers, however hospital delivaries can still be included later on according to budget.

POSSIBLE EFFECTS OF THE PROGRAMME ON THE FUTURE FERTILITY

It is very difficult to fortel about the possible effects of the programme. To start with the programme takes on its burder the responsibility of spreading the ideas of family planning and the use of family planning methods among delivaries supervised by M.C.H. centers. We expect that through this programme the fertility of illiterate women will come down to the same level as that of the fertility of litrates i.e. the gross reproduction rate will decrease from 2.9 in 1966 to about 2.3 in 1967 (the level for litrates in 1960) that is to say the fertility will decrease by about one fifth in ten years.

To show that clearly two projections were done according to the follwing assumptions :

Hypothesis 1. Is a basic one, and was only put for comparison, to show the effect of constant fertility on the crude birth rate in 1967 and the possible departure from this pattern. It assumes that fertility will remain constant during the period 1966—1976, with a gross reproduction rate of 2.9 and age specific fertility rates as shown in table (1). Mortality will dcrease gradually with the following expectation of live figures ( ) 1966 males 48.36 years, females 50.92 years, 1971 : males 50.20 year, females 53.62 years.* This hypothesis takes into consideration that migration rates* wil dcrease gradually by 10% every 5 years from 1966—1967.

Hypothesis 2. Under which the Proposed programme will be realised by the end of 1976.

It assumes that fertility will dcrease by about one fifth by 1976, to reach the fertility of litrates in 1966, i.e. the gross reproduction rate will dcrease from 2.9 to about 2.3 in 1976, which means a drop in the completed family size from 5.9 children per woman to 4.8 children per woman duing a ten years period.

The projections were done in two steps : it was assumed that fertility in 1971, will reach the mid-lefel between total and non-illitrate fertility; and will arrive at the level of non illitrates in 1960 by year 1976.

The assumption thus includes a gradual decrease from the 1966 actual level to the 1960 level of non-illitrates within ten years period.

The rates used appear in table (6), and the assumption with regard to mortality and migration is the same for our basic assumption.

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* Research on «Population Trends in Cairo» by Mrs. Frial Abdel Kader, North African Demographic Center, September 1965.

This assumption was based on the fact that non-educated women, will have at least the chance during the post-partum period to learn some thing about family planning, how and when conception takes place and how can fertility be controled. At child birth the desire to learn about family planning methods may be at its peak. Also at this time women have leisure time, and can easily pick know ledge about family planning. It is moderataly easy to contact the husband to include him in the programme, which will help to a graet deel in chosing the method later on . The topic can be coupled with infant welfare and mother's health more directly and thus made more convincing. Women who go out as acceptors go into many different neighborhoods, and hence will informally spread the word of family planning more widely in a chain like action and hence will help in reducing fertility .

POSSIBLE EFFECTS OF THE RPOGRAMME ON THE FUTURE POPULATION OF CAIRO (1966—1967).

To show the possible effects of the programme on the future population of Cairo in the comming 10 years, projection of the 1966 population was carried out according the afore mentioned assumptions seperately, by age and sex, using the standard methods of component projection. The projected population by age and sex can be seen on tables 7, 8, and som summarising figures drown from the projections appear on table 9.

If fertility, mortality and migration will follow the pattern given in hypothesis 1, which assumes constant fertility regardless of the programme, the crude birth rate would increase from 42.97 in 1966 to 45.56 in 1976, and Cairo total population would have a net increase of about 1916 thousands (about two millions). The rate of growth will be inthis case more than 3 percent per anum in 1976 and it is belived that serions economic consequences may follow this pattern of population growth, with an increasing burden of population under 15 years of age.

The projected fertility pattern of hypotheses—2 will bring the crude birth ate down to 38.00 in 1976, and the population increase will be 1739 thousands. The rate of growthwould show down to about 2.5 per anum by 1976, which is more or less reasonable in such a big city like Cairo. There is no doubt that litracy helps in choosing the method as well as its proper and contionous use, and it is belived that any family planning programme will be more effective if it is going on paralell with the increase of the educational level of women. Educatio helps people learn more about physiology of reproduction and the prvention of pregnancy; and emparts a greater sense of reponsibility for care and growing up of children.

ESSENTIALS FOR THE PROGRAMME

The success of the family planning programme mostely dpends on two factors : the number of females to be included and the intensity of the propaganda work :

As we have already said, the programme takes on its burden domiciliary delivaries supervised by M.C.H centres. These centers are already eatablished with physicians, midwives and nurses, who can be included in the programme with minor .

TABLE 7

Projected Pop. By Age Groups (1966—1976) in Thousand, Constant Fertility, Deceasing Mortality, Decreasing Migration Rates by 10% every 5 years

Age Groups	Males			Females			Total		
	1966	1971	1976	1966	1971	1976	1966	1971	1976
0—4	338	410	488	320	379	455	658	789	943
5—9	312	378	450	299	325	387	611	703	837
10—14	260	315	374	263	307	357	523	622	731
15—19	183	222	264	186	275	324	369	497	588
20—24	168	203	242	168	221	288	336	424	530
25—29	159	192	229	166	177	247	325	369	476
30—34	157	191	226	134	162	192	291	353	418
35—39	143	173	206	131	152	172	274	325	378
40—44	113	138	164	85	126	158	198	264	322
45—49	89	107	128	78	99	128	167	206	256
50—54	78	95	113	70	72	98	148	167	211
55—59	48	58	69	47	56	69	95	114	138
60—64	48	58	68	43	44	53	91	102	121
65—69	22	27	32	23	30	39	45	57	71
70—74	17	21	25	19	22	26	36	43	51
75+	14	17	20	16	18	22	30	35	42
Total ...	2149	2605	3098	2048	2465	3015	4197	5070	6113

TABLE 8

Projected Pop. By Age Groups (1966—1976) in Thousands, Decreasing Fert. By 10% every 5 years, Decreasing mortality, Decreasing Migration Rates by 10% every 5 years.

Age Groups	Males			Females			Total		
	1966	1971	1976	1966	1971	1976	1966	1971	1976
0—4	338	385	427	320	361	412	658	746	839
5—9	312	378	392	299	325	372	611	703	764
10—14	260	315	374	263	307	357	523	622	731
15—19	183	222	264	186	275	324	369	497	588
20—24	168	203	242	168	221	288	336	424	530
25—29	159	192	229	166	177	247	325	369	476
30—34	157	191	226	134	162	192	291	353	418
35—39	143	173	206	131	152	172	274	325	378
40—44	113	138	164	85	126	158	198	264	322
45—49	89	107	128	78	99	128	167	206	256
50—54	78	95	113	70	72	98	148	167	211
55—59	48	58	69	47	56	69	95	114	138
60—64	48	58	68	43	44	53	91	102	121
65—69	22	27	32	23	30	39	45	57	71
70—74	17	21	25	19	22	26	36	43	51
75+	14	17	20	16	18	22	30	35	42
Total ...	2149	2580	2979	2048	2447	2957	4197	5027	5936

TABLE 9

Vital Rates By Different Hypotheses 1966—1976

Year	Total Poplation (Thousands)	G.R.R.	Crude Birth Rate	Crude Death Rate	Rate of Growth
			Hypotheses 1		
1966	4197	2.9	42.97	15.62	27.35
1971	5070	2.9	43.48	14.25	29.23
1976	6113	2.9	45.56	13.36	32.20
			Hypotheses 2.		
1966	4197	2.9	42.97	15.62	27.35
1971	5027	2.6	39.46	14.10	25.36
1976	5936	2.3	38.00	13.12	24.88

training, and thus thier action in the programme will be two fold : First, which is the most important, is a psychological one, the physician, or his midwife or nurse associates, has already been accorded the role of guide and protector to assure a safe delivary and with the happy event accomplished, advice from the same source will surely have a speial significance.

Second, they will suppliment a good source of personelle in our programme.

In 1966 domiciliary delivaries supervised by M.C.H centres constituted 28.3 percent of all delivaries occuring in Cairo in this year; i.e about 51 thousands delivaries from a total of about 180 thousands delivaries. These 51 thousands delivaries in 1966; is our female population to start with in the programme.

In order to ensure this programme about 7.8 nurse hours were needed in 1966 (assuming 15 menits for each visit), each woman is usually supervised for 6 days after delivary and the nurse can talk to her during her usual work. These nurse hours should be increased by 0.22 hours each year from 1966 to 1971 to reach 8.9 nurse hours in 1971 . Further more 0.4 nurse hours per year have to be included each year from 1966 to 1971 to reach 10.9 nurse hours per year in 1976, to serve about 71 thousands delivaries undr supervision of M.C.H centres assuming that all delivaries will be under medical supervision in 1976.

If all delivaries are to be included in the programme these aught to have needed about 28 nurse hours per year in 1966, and will need about 30.5 nurse hours per year in 1971 and about 34.8 nurse hours in 1976 to serve about 226 thousands delivaries.

TABLE 10

Needs for the Programme (According to Hypotheses 2)

Year	Total Delivaries (In Thousands)	Delivaries Supervised By M.C.H. centers (In Thousands)	Nurse Hours	Physian's Hours
1966	180	51	7.8	12.5
1971	198	60	8.9	15.0
1976	226	71	10.9	17.5

To insure this programme about 12.5 physician hours were needed in the first year to included delivaries under M.C.H. supervision, (assuming 10 menits for examination of each female and 10 menits for fitting the interuterine device). If should be mentioned here, that in the Tiwan family planning programme 6 menits are needed for fitting an IUCD.

These number of hours should be increased to about 15 physicians hours in 1971 and to about 17.5 physicians hours in 1976.

CONCLUSIONS AND SUMMARY

This programme for family planning which was mainly related to the post partum period or «lying-in period» to start with in Cairo, can actually be generalised to cover all the countery, specialy if it is consenterated as we have already said to delivaries supervised by M.C.H. centers serving the most susceptible group of the population, an can be extended later on to include all delivaries occuring in hospitals to insure the best results.

There is no intent to suggest that all other means of bringing birth control to the people be abondoned and that the exclusive effort be made through a programme integrated with maternity cervices. My purpose has been to raise the question of whether thechief formal effort should nt be made within this framework.

There are three ways by which birth control may become general practice.

First, it has been argued that through industrialization and improved standards of living and education, birth control will come almost spontaneously to be practiced. This, indeed, was the course followed in Europe, but the procers apparently took many decades.

Second, through various types of general education and availability of clinics, it appears that the most educated and susceptible groups of a poulation may be quickly reached. From these it is supposed the knowledge and practice of family planning will gradually spread. To stress this approach is at least to attempt the easiest job first; but we do not know how rapidely the process of dissemination will take place.

The third method is the one advocated in this paper; that there should be a concentration of effort on a single phase of our social organization, that concerned with maternal care. It has been pointed out that women who have just completed a pregnancy are the ones chiefly at risk and personally most concerned. To work primarily with them would be placing the emphasis were maximum results could be obtained with a minimum of effort.

Should the latter course be decided upon, family planning and maternity care would have similar objectives and would become important allies.

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