ATTEMPT TOWARDS THE CONTROL OF POPULATION PROBLEM IN EGYPT

By

F. HEFNAWI and A. HANAFI MAHMOUD

Department of Gynaecology & Obstetrics.
Al Azhar University

Department of Preventive Medicine
Cairo University

Egypt is one of the many low income countries of the world whose aspiration for economic development is restricted by rapid population growth. The population censuses in 1927, 1937 and 1947 were 14.4, 15.9 and 19 million respectively (1). The population estimate in 1967 was 31.7 million. The death rate shows a steady decline from 21.4 in 1945 to 15.4 per thousand in 1963 while the birth rate remained stationary almost for the last 50 years ranging between 41—44 per thousand (2). That resulted in an explosive population growth. As a result of the present policy of improving the quality and quantity of free medical services, especially in the rural areas, a more decline in the death rate is anticipated which will result in more population growth.

The poulation density increased from 466 persons per square kilometer in 1927 to 739 in 1960. This is among the highest densities in the whole world. Between 1877 and 1960, the cultivated land increased from 4.7 million acres to 5.9 million, compared to a poulation growth from 6 to 26.1 million in the same period. Thus within 83 years, the cultivable area was increased by 26% while the population increased by 335%.

All evidences indicate that the rapid rate of population growth makes the task of maintaining even the existing socioeconomic levels extremely difficult. The government started to build in 1960 the High Dam, which is expected to add two more million acres of fertile land by 1970. By that time, the almost 3% annual population increase would have crowded every new acre reclaimed by the water of the dam.

Since the migration among population is almost negligible, because of several factors, it will not provide a promising solution to the problem of overpopulation. Hence, the only solution is to control fertility.

The fertility rate in Egypt compared to several Arabic, Islamic and other countries is shown in Table I (3). It clearly illustrates that fertility rate in Egypt is among the highest in the world.

TABLE I

Fertility Rates

Country	Value
U.A.R.	210
Sudan	234
Tunisia	72.8
Japan	61.9
U.S.A.	78.2
England and Wales	103.8
Greece	57.9

The poulation pyramid of Egypt has a broad base and sharply tappering top characteristic of developing countries (4). Seventy per cent of the females in the fertile period of age are married (Table II).

TABLE II

Distribution of females by marital status in Million

(Egypt 1960)

	Urban	Rural	Total
Female Total Number	4.8	8.1	12.9
Female in Fertile Age	2.2	3.7	5.9
Married Females	1.5	2.7	4.2

The rural pouplation is almost double the urban, which means that efforts to control fertility should be more directed to rural areas to obtain appreciable results.

The distribution of married females by age groups and percent distribution of children borne within these age groups is presented in Table III. In the age group 20—24 years, 93% of the women married have 2 children and in age group 25—29, 38% have got four children or more. This indicates the high fertility especially in young age group.

TABLE III

Distribution of Married Females by Age & Number of Children Borne (Egypt 1960)

Age groups in years	Number	Cumulative percent of children borne				
		None	1	2	3	4+
Less Than 20	290.000	66.8	93.3	99.1	99.8	0.2
20—24	733.000	27.0	56.1	86.4	92.9	7.1
25—29	1.072.000	11.3	24.1	42.6	62.2	37.8
30—34	870.000	7.7	13.8	23.8	37.2	62.8
35—39	895.000	6.6	10.7	16.9	25.9	74.1
40—44	556.000	8.2	12.2	17.8	25.2	74.8
45+	501.00	7.3	10.8	15.6	22.1	77.9

Family planning before 1966

Public health workers, gynecologists, economists, and sociologists were aware of the problem since the early 1930's Few attempts were done by the authorities towarde the population problem.

It was not until the revolution government took over during 1952 that the authorities began to respond seriously to the dangers of rapid poupulation growth. The new government established in 1953 two organizations, the first was concerned with the economic development, while the second concernd with social development. Towards the end of 1955, the national committee for population problems was formed and 8 clinics for family planning were established, 4 in each of Cairo and Alexandria (5). The clinics were attached to non-governmental voluntary organization working in the field of social service.

In 1957, the National Committee for population problems was transferred to a non-governmental organization called «The Egyptian Association for Population Studies» which eventually became a member of the International Planned Parenthood Federation. The settlement of this association stimulated research and service in the line of family planing and by 1965, 98 clinics were in operation, half of them located in rural areas and the other half in urban localities. The yearly average number of new attendants in the urban clinics was around 4,000 except in 1964 when it shooted to about 14,000 (5). The methods used included vaginal diaphragm and jelly, vaginal foam tablets, precipitive jelly and Delfin cream with applicators, oral pills and intrauterine devices. The last 2 were used on small and experimental basis.

In 1964, th Joint Committee for Family Planning was formed by members of the Cairo Women's Club and several other voluntary organizations were affiliated in different govrnorates.

The governmental family planning progam.

In October 1965, a governmental family planning program started, and a supreme council for family planning presided by the Prime Minister was established. It was membered by Ministers of Health, Social Affairs, and National Guidance. An autonomous executive organization for the supreme council was also founded.

By February 1966, almost 2,000 clinics were established using the place, facilities, and personnel of the already existing and functioning health and social centers in rural areas, M.C.H. centers, health offices and private associations clinics. All these clinics, supplied contraceptive services, mainly oral pills. These centers were operated for family planning services 3 days per week in the afternoon, following the official working hours. Monitary incentives were given to workers who inserted devices and to those who motivated the subjects. In addition, the workers in the clinics gained more money from selling pills supplied by the government.

The total number of persons working in the Family Planning clinics by December 1967 is shown in Table IV. They represent practically the total man power operating the health centers used as family planning clinics (6).

TABLE IV

Personnel Operating the Family Planning Clinics
(December 1967)

Number	Speciality	Mean/Unit
2585	Doctors	1.0
987	Social Workers	0.1
3721	Nurses	1.4
4380	Janitors Assistants	1.9
11,673		4.7

The yearly budget for the program was more than one million Egyptian pounds, (the expenses for running out the centers were not included). The budget was mainly spent in health education programs, recording and statistical analysis procedures and in buying contraceptive pills that were given to participants at almost cost price of 10 Egyptian Piasters (U.S. Cents 25).

The distribution of the Family Planning Clinics is shown in Table V (6), and it shows that two thirds are located in rural areas coinciding with the population distribution.

TABLE V

Distribution of Family Planning Clinics

Egypt

	Urban	Rural	Total
February 1966	575	1416	1991
January 1967	772	1578	2350
December 1967	854	1731	2585

The percent location of the family planning centers within the different socio-medical centers compared with the percent function of each is presented in Table VI. (6). The M. C. H. centers and health offices represent 7 and 9.7% of the total family planning clinics and provided a function of 26.4 and 23.7% of the attendants. On the other hand, the family planning centers in the rural socio-medical centers which represent 42.1% of the total numbers of clinics, offered only 13.8% of the service. This indicates the link of family planning with infant services and stresses the need to scrutinize the reasons of the inefficiency of the rural clinics function in family planning.

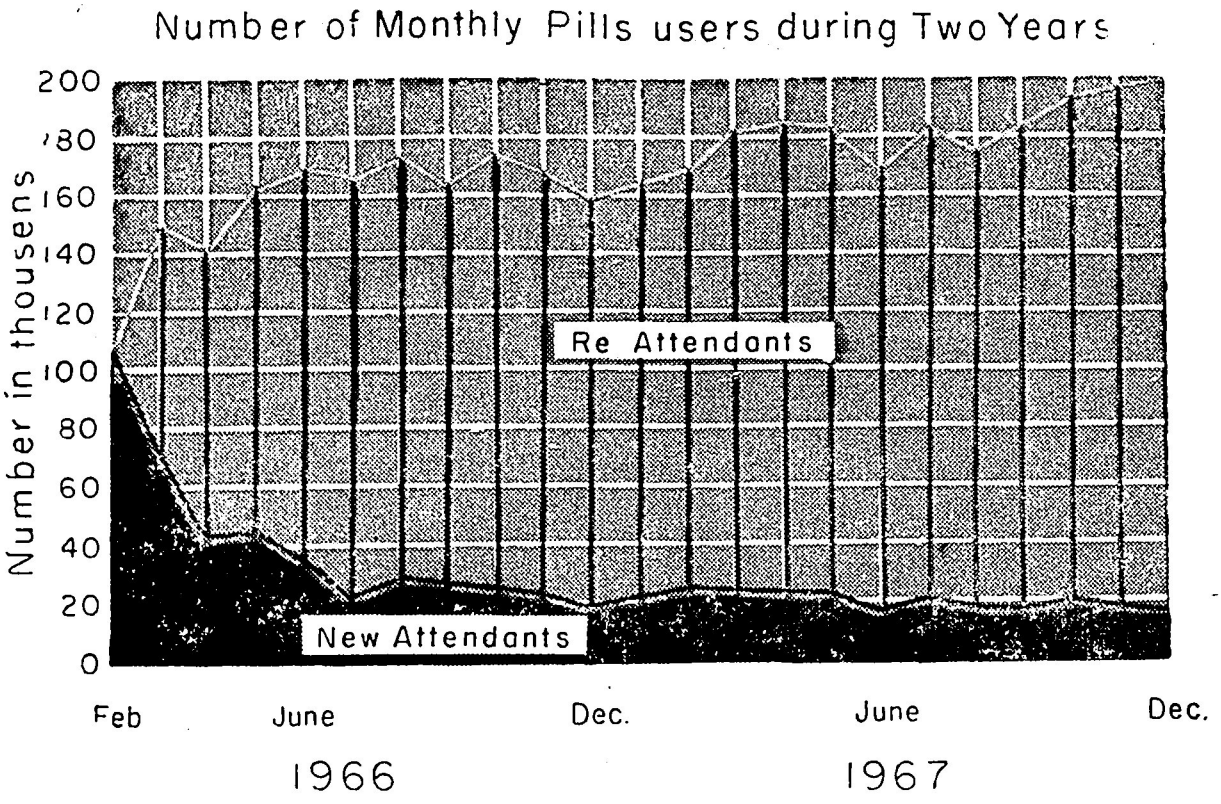
TABLE VI

December 1967

Distribution of Family Planning Clinics by Location And Attendance

Ceter	Percent Distribution	Percent Attendance.
M. C. H. Centers	7.0	26.4
Health Office	9.7	23.7
Rural Health Centers	9.7	6.6
Combined Units	12.0	6.4
Social Centers & Rural Health Units	42.1	13.8
Hospitals and Other Centers	5.8	3.1
Voluntary Centers	13.6	20.1
Hospitals and Other Centers	5.8	3.1
Voluntary Centers	13.6	20.1

The monthly number of users of pills for both first and reattendants is shown in Figure 1 (6). The numbers of new cases joining the program diminished gradually to reach a stationary level of around 20,000 per month. It is noteworthy that the number of reattendants did not go parallel with the cumulative number of new monthly admissions to the program.



The study of the relative distribution of the users by governorates showed that the numbers were very small in Upper Egypt, especially South to Assiut.

According to the preliminary statistical analysis results of the council, it is observed that the average number of living children of the attendants was 4.5 and that the age group 30-35 represented 43.4% of the attendants (6). In this age group, almost two thirds of the women have 4 or more children.

Table VIII shows the distribution of repeated visits for one year to take pills (6). The average was 7 per year and only 11% did attend regularly for one year. This is the group to be counted upon in the calculation of the expected next year drop in birth rate. This fact of the high drop out was noticed in all centers regardless of the location or type of function.

TABLE VIII

Percent Repeat Visits in one Year for All Centers
(February 1966 to January 1967)

Repeated Visits	Percent Completing Visits
1	2.9
2	9.1
3	9.3
4	8.1
5	8.1
6	8.7
7	8.0
8	7.9
9	9.2
10	7.9
11	9.8
12	11.0

This drop in the continuation rates for oral pills has been noticed in other countries as shown in Table IX in a follow up for one year (7).

TABLE IX

Continuation Rates After One Year For Oral Pills

COUNTRY	RATE
Puerto Rico	56.8%
Ceylon	75.7%
Turkey	7.6—12.3%
India	53.1—71.1%
Taiwan	42.0%
U. S. A.	61.0—77.4%
U. K.	85.0%

The continuation rate in these areas is higher compared to our governmental program since all of these were controlled studies on relatively small numbers ranging from 500 - 4,000.

The continuation rate after one year in a controlled study carried out by Mazhar and Hefnawi (8) on 400 cases was noticed to be 66%. The follow up of this group for 3 years showed that the withdrawal rate markedly dropped to 11.5% by the third year. This could be explained on the basis of the development of confidence and acquirement of the habit of taking pills.

Many explanations could be presented for the high rate of drop out, observed in the governmentel program, among which are the following :

1. Lack of a follow-up motivation system because of deficiency of personnel, improper recording, insufficient budget, etc.

2. The initial high number of packs distributed may not represent actual users. Packs were distributed to non-clients who were attending centers for other services, e.g. vaccination of infants, recording births or deaths, etc. The fact that the money collected from pill distribution was shared by operators in the clinics pushed a group of them to distribute more packs regardless of anything to gain more money. Many of those who received the pills were not in need of it or were not eligible for its use.

3. Some women find it easier to take their pill supply for several cycles during one visit under different names to avoid the trouble of the requested monthly attendance.

4. The half price of the pills distributed by the family planning clinics, compared to that distributed by the drug stores pushed many families to try to get a supply for few months from these clinics at a time, under different falacious names and addresses, in order to get the benefit of the price difference.

5. Repeated recording when the original is lost.

6. Possibility of shifting to other family planning clinics or buying the supply from drug stores.

The relatively low price of the pills in Egypt, compared to surrounding countries in the Middle East, tempted the smuggling of some packs outside the country.

Seventy eight percent of all the centers, particularly those of rural areas, served less than 100 attendants per month while only 15% served an average of 277 attendants per month (6). This point raises the problem of the cost of contraceptive service per indivdual. It also shows that it is the improving of quality of the service and not the increasing of the number of clinics which deserves more attention in future planning.

According to the Supreme Counil of Drug reports, pills for 4 million cycles represents the annual consumption all over the country by both the family planning clinics and drug stores. Studies of the governmental program activities showed that average number of monthly attendants to all clinics is 200,000 women, consuming about 2.5 million packs yearly. The drug stores could then distribute about 1.5 million packs yearly.

Intra uterine contraceptive device (I. U. C. D.) program.

Four months after the start of the governmental program, two centers offered training in I, U. C. D. insertion. In October, 1966, 205 family planning centers offered services for I. U. C. D. insertion. The number was gradually increased to reach 467 by December 1967 (6). The cumulative number of new insertions by that time reached almost 66,000. No report of follow up studies for loop expulsion or removal is available up to December 1967. It is estimated that almost 35,000 I. U. C. D. have been introduced by gynecologists in their private clinics.

The injectable contraceptives.

Early in 1967, long acting progestogen-estrogen combination by parentral route had been introduced in different research centers on experimental basis (9). These centers were distributed in both urban and rural communities to study the relative acceptability of the method beside their efficacy and safety. The fixation of the date of injection in the month calendar was found to be easier in both administration and follow up. The method proved to be effective in preventing pregnancy. The drop out rate was only 27%, compared to

75% in the pill governmental program, mainly due to bleeding, moving to other areas or desire for pregnancy. The acceptability was high, especially in rural areas, where the community prefered to lay the burden of conception control on the medical attendant and the more belief in parentral drug administration than the oral route.

Sterilization.

As a method of contraception, sterilization (10) is not adopted by the governmental program. Tubal ligation is sporadically performed in hospitals to mothers of high parity, especially when future pregnancy is contra-indicated. Neither religion nor law prevents the performance of such operation if it is accepted by both partners. Female sterilization can play a major role in dropping the birth rate since almost one third of annual deliveries are by mothers having 5 or more children and are suitable subjects for sterilization.

Male sterilization by vasectomy which is adopted on a large scale in India, East Pakistan and Korea is not likely to be accepted widely in Egypt because of the associated belief of its interference with male potency.

Abortion.

In Egypt, abortion is not forbiddn by law if performed on medical grounds to save the life of the mother from danger by continuation of pregnancy or labour (11). Unknown number of illegal abortions is practiced in some private clinics, especially among middle and high social classes, as a method of birth control. Some of the induced abortions are being initiated by paramedical personnel (nurses, midwives, or even Dayas). Records could be only available for those complicated cases who are transferred to hospitals.

Research projects.

Hand in hand with service activities, many clinicopathological, social and demographic studies were conducted through the activities of various scientific disciplines, mainly in Universities, Ministries of Public Health, Social Affairs, and Scientific Research. Most of these studies were oriented to the inter-relation between thé local socio-economic, environmental and health problems and the family planning methods.

Early in 1968, the Egyptian Population Research Association was established and issued the Journal of «The Egyptian Population and Family Planning Review» to publish research studies in population problems.

Training programs.

Realizing the immediate need and value of training different scientific groups for the population problems and family planning, many training programs were run mainly by the executive board of all governmental family planning program and the general association of family planning. Besides, the universities conducted other courses.

The socio-medical aspects of the problem have been concentrated upon in the Medical schools. Suitable courses, programs and field training activities were offered by the Departments of Gynecology, and Obstetrics and the Departments of Public Health in several Universities. Some of the programs were interdepartmental. The training included both graduate and post-graduate medical candidates, nurse students, social work students, mid-wives, field operators, etc.

Hypothetical evaluation of family plannig efforts on birth rate.

The following is a model for calculation :

1. Proper users of pills for one full year from the different family planning clinics in Egypt are 20,000. (About 10% of the 200,000 cycles distributed monthly are continuously attending for one year).

2. If we consider that 100,000 I. U. D. have been applied and that 70% are still in place. Therefore, 70,000 are protected.

3. Considering that about 200,000 cycles are distributed by drug stores monthly and that 50% of them are wasted by improper or irregular use of smuggling outside the country etc, so 100,000 women are protected.

Therefore, it is expected that 190,000 women are protected against pregnancy per year in Egypt since the start of the governmental program.

This represents 1/16 or 6.33% of our target population considered as 3,000,000 women. According to the vital records our births per year are about 1,250,000. So we expect that the drop in births will be 79, 125 per year.

Recommendations.

Since Egypt had already 2 years experience with family planning it is high time for evaluating the results. Present pitfalls can be avoided in the future and experience gained can be modified and built upon to speed up the governmental program.

Although the governmental program is considered having a model design in coordinating the service ministries, and being presided by the Prime Minister, yet many difficulties hindered the expected bentfits. The following comments are an attempt to analyse and solve the faced problems :

1. Although the governmental program established about 2,000 centers distributed uniformly all over the country, yet a long term plan for a target was designed after the start of services. Also, K. A. P. surveys before starting the service were not done. This made the statistical evaluation a difficult task.

2. Motivation was conductd at high and concentrated level at the start, but was not persistant at the desired level, also was not properly directed. This was one of the factors behind the high percentage of withdrawals among pill users (75%), especially noticed in rural and upper Egypt Governorates.

3. The program is unique in starting with pills as the only method, followed by gradual use of I. U. C. D. Still the use of more than one method on a large scale would have achieved better results. Sterilization as a method of fertility control should be given more attention, especially among females who have delivered 5 or more children and who represent almost one third of the target population.

4. The outstanding relative success of the functioning clinics in M. C. H. centers and health offices shows the link with maternal and infant services. A future success is expected if more concentration is directed to these centers in urban and rural areas.

5. The circumstances that lead to the successive changes in the key positions of administration of the governmental program lead to difficulties in the continuous conduction of the program along one line for sufficient time to be evaluated.

6. Incentives were used in a contradictory method. While pill users paid 10 piasters for their monthly pack, the I. U. C. D. was inserted freely and after one month, if the loop is still in place, 50 piasters were given to the subject motivator. This leads to under estimation of the I. U. C. D. value by the users. It would have been more valuable if the incentives are paid on the yearly follow-up and continuous use. Again the incentives pushed some of the workers in the centers to distribute more pills regardless of their proper use and indications to earn more money.

7. The record sheet designed for attendance contained too many detailed informations that are more suitable for research work and not for national service. This resulted in inefficient recording that made the statistical analysis and evaluation unreliable.

8. Proper co-ordination and fruitful co-operation between the various specializations (medical, social, statistical... etc) is needed. It is impossible for one organization to perform the work alone regardless of its efforts and sincerity. Actually this big project requires a varied and trained team led by a responsible expert who co-ordinates the team in various fields of services, training and research in the varied angles of the program.

The Ministries of Health and Social Affairs should work together each within the limits of its specialization.

9. The preceeding presentation serves to demonstrate the urgent need for establishing a National Institute for Training and Research in Family Planning. Both training and research should be of an inter-disciplinary character and fitted to the basic local requirements. Training should be organized on different levels for various groups including university graduates, post-graduates, personnel working in family planning clinics and volunteers. Personnel of various specializations should be trained. These include sociologists, social workers, medical, paramedical, political and religious leaders.

In conclusion, it is not too late to modify the plan of our program and improve the technique to make it a good model to be applied to other countries. The success of this program will be reflected on the Arab and Islamic world.

BIBLIOGRAPHY

1. ANUAL BOOK OF GENERAL STATISTICS, U.A.R. Central Agency of Statistics, June 1967.

2. STATISTICAL INDICES. Central Agency of Statistics, 23rd July 1967.

3. DEMOGRAPHIC YEAR BOOK. 1965.

4. U.A.R. CENSUS 1960. Central Agency of Statistics.

5. HUSSEIN, H. M. : «U.A.R. National Program» Proceeding of International Conference on Family Planning Programs» Geneva, August 1965.

6. NUMRESI, M. : «Report of the Statistical Department, the Supreme Council of Family Planning» 21 March 1968.

7. MAZHAR, Kh. ; HEFNAWI, F. : «Three Years Field Study with 6 Different Contraceptive Pills (4396 cycles)». The Journal of the Egyptian Medical Association, Special Number, 3rd Symposium on Family Planning (5—8 May 1965).

8. Studies on Family Planning. A Publication of the Population Council., 24, December 1967.

9. KAMAL, I. ; HEFNAWI, F. & Younis, N. ; «Experience with long acting Injectable Progeston-Estrogen Combination. Contraceptive Study of Two Regimens». The Egyptian Population & Family Planning Review, 1 : 2, 1968.

10. HEFNAWI, F. : «The Place of Steralization in Egypt». The Journal of the Egyptian Medical Association, Special Number 3rd Symposium on Family Planning (5—8 May, 1965).

11. NAZER, I. R. : «Abortion in the Near East» Proceeding of the Eighth International Conference of the International Planned Parenthood Federation, Santiago Chile 9—15 April 1967.