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The Impact of small and Large Numbers of Children on The Health and Welfare of Individual Families: A Micro Case Study

By

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THE IMPACT OF SMALL AND LARGE NUMBERS OF CHILDREN ON THE HEALTH AND WELFARE OF INDIVIDUAL FAMILIES: A MICRO CASE STUDY

by

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W. A. Hassouna

Cairo, 1971
The Department of Orthopaedics affiliated to COA, Hyderabad,iccurred to me the inspiration to undertake a study on the incidence of slipped upper femoral epiphysis in children. This study was initiated in the Department of Orthopaedics, COA, Hyderabad, in collaboration with the Institute of Medical Sciences, BHU, Varanasi. The objective was to assess the incidence and prevalence of slipped upper femoral epiphysis in children. The study was conducted over a period of 10 years, from 1970 to 1980.

The study involved retrospective analysis of medical records of children who were diagnosed and treated for slipped upper femoral epiphysis. The incidence of the condition was found to be higher in boys than in girls. The average age at the time of diagnosis was 10 years. The study also highlighted the risk factors associated with the condition, including obesity, trauma, and familial history.

The results of the study were published in a series of articles and presented at several national and international conferences. The findings were later incorporated into guidelines for the management of slipped upper femoral epiphysis. The study was recognized for its significant contribution to the field of orthopaedics and has been widely cited in subsequent research.

The study concludes that slipped upper femoral epiphysis is a common condition in children and should be considered in the differential diagnosis of hip pain in children. The study also emphasizes the importance of early diagnosis and intervention to prevent complications such as avascular necrosis and hip dysplasia.

Yours sincerely,

[Signature]

Date: 1981

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I. INTRODUCTION

The aim of this paper and the aim of the other microstudies for this conference is to provide some new factual insights into the understanding of the relationship of family size, goals and achievements to family aspirations and general welfare. It is hoped that such factual data can be used as the basis for improving the various educational and informational programs promoting the concepts and practices of family limitation.

Lest the factual data be our sole point of concentration, the author feels that it is well to call to mind some of the premises which go unquestioned and which should be questioned concerning the ways planners and developers go about building up the crusade to halt the world's too rapid population growth. Some of these premises are as follows:

(1) that when people KNOW ABOUT and KNOW HOW to limit their families, they will ACT accordingly;

(2) that if only planners had the opportunity to work on a selected group of those people most susceptible to large family size (peasant societies) where income, housing, education and health opportunities were well provided, it would be relatively easy to convert the people to the planners' concept of family limitation.

Concerning the first premise, in the 1960's, we have witnessed a fantastic drive much akin to the crusading zeal and good will of the early missionaries, to preach the message of family limitation. This
preaching of population theory has gone hand in hand with an introduction into the ways and means of practicing family limitation. As a result, birth control apostles have covered the urban and rural areas of the third world with intrauterine devices (IUCD's), pills, and other forms of contraception. And like the missionaries of old, these apostles were subconsciously convinced that exposure to the message and introduction to the methods of family limitation would rapidly induce the desired behavioural change (i.e., family limitation). Of course, this did not happen and is still not happening and, furthermore, it will not happen until those most susceptible to having large numbers of children (i.e., the families of the fields):

(1) change the nature of their livelihood from one of land tending where any child over the age of six is considered a productive addition to its parents' work force without causing additional expense or a disruption of the patterns of his home or land; and

(2) are convinced that those children born to them have a high probability of growing into adulthood.

The case study undertaken by the author and described in this paper bear out these two conditions for behavioural change. Further, in this study of Tahrir Province, the results simply disprove the premise that people will be converted to family limitation if their community can only supply them with all the necessary social benefits. It simply does not work that way, no matter how much the farmer's income has increased.
in his new settlement. If he is still head of an agriculturally based family unit, his reproductive behaviour will be geared towards meeting the needs of his occupation.

Even if people give verbal assent to family limitation, studies indicating number of pregnancies, etc., show that family limitation is not a behavioural norm. In some cases where people do accept family limitation as a desirable behavioural pattern, they practice family limitation only after the fourth, fifth or sixth child. This was found to be the case in this study and represents quite a gap between the population planners' understanding of family limitation and that of the people themselves.

In this study the author will look specifically at Tahrir Province, Egypt, as a microcase study. This particular location was chosen for several reasons:

(1) the author worked in this project for many years and was known to the people and trusted by them as their Am el-Hakim (Uncle Doctor);

(2) it was possible to collect the data pertinent to the topic of this study; and

(3) Tahrir Province, being a new settlement project, was particularly suited as a place to observe and, to some extent, to test the validity of the two premises listed earlier.
II. TAHIR PROVINCE: A MICROCASE STUDY OF FAMILY WELFARE AND FAMILY SIZE

Beginnings of Tahrir Province and the Selection of Settlers

The research work for this paper was undertaken in one of the earliest and largest resettlement areas in Egypt. The resettlement project was started in 1953 under the name "Moureriat El-Tahrir" and is commonly referred to as Tahrir Province. The resettlement area, which will eventually cover 600,000 feddans (acres) of land reclaimed from the eastern desert, is located in the southern sector of the Province. On 22 October, 1955, one hundred and thirty one families were selected from the densely populated province of Menoufia in the Nile Delta to settle in the new province. This was followed by another group of thirty families from the province of Dakahlia.

Several criteria were used in the selection of these families to ensure that only those families exhibiting the characteristics needed to meet the objectives of the project would be allowed into Tahrir. These objectives were namely: (1) to develop a rural community model based on social and economic justice which could be duplicated in other resettlement areas, and (2) to introduce modernization into the new rural community.

Tahrir as a Planned Settlement

Manipulation of family organization and structure was made possible through stringent selection criteria. To be eligible as a settler in the project, marriage to only one wife was a primary prerequisite;
furthermore, he could not own any land. The family head had to have at least twenty-four years of age, but not more than thirty, and he had to have completed his military service with a good conduct discharge. Out of the 1,245 families initially studied, only 491 were found acceptable according to the social criteria. When these 491 families were medically examined for suitability, only 294 (60 per cent) were medically acceptable. Medical rejection was due to chronic incurable diseases, mental conditions, and/or physical handicaps. In addition to these criteria, psychological and vocational tests were administered to all candidates and their immediate family members.

At the present time, most of the original 320 settler families are living in Omar Makram and Omar Shahin villages in Tahrir Province. Both of the villages are composed of a number of blocks, each having a number of houses built in a shape. All the village houses are standard in terms of number of rooms. They are built of white bricks with concrete floors and roofs. In addition, all have running water, septic tanks and electricity. Each house is composed of two rooms \((3\frac{1}{2} \times 3\frac{1}{2} \text{ m}^2)\) plus a hall \((3\frac{1}{2} \times 4 \text{ m}^2)\) and a backyard \((3\frac{1}{2} \times 7 \text{ m}^2)\) for planting vegetables. In addition, each house has a kitchen and bathroom. All houses were furnished with simple western or European style furniture and no baking oven or animal shed was included. In short, the houses themselves and their furnishings were, while new and modern and "better" in the planners' conception of things, totally alien to the people's way of living.

Settlers were not allowed to bring relatives for permanent stay in their new houses. No mother-in-laws were allowed to accompany the new
settlers nor were livestock or poultry allowed inside the new houses. The imposition of these two rules were in direct conflict with the peoples' accustomed pattern. Absence of the mother-in-law is of particular interest in this study because of the very active role she plays in the marriage-childbirth-child rearing events and activities of the Egyptian Fellahin. It is one of the mother-in-laws' principal duties to encourage the newly wed couple to produce an offspring as quickly as possible, especially a male, and in general to heckle the couple into having lots of (male) children in order to keep up with or go beyond the other farmers. It is difficult to measure the effect of the absence of the mother-in-law on family limitation, but it appears that since family size in Tahrir Province did not decrease and does not differ significantly from other rural Egyptian communities, the role of the mother-in-law is but one factor in the total pattern of village life leading to the desire for and production of large families.

In the early days of the project, the settlers purchased all their goods from the village market and paid for them from their wages which varied between seven and twelve Egyptian pounds per month. Later on, settlers were given the choice of either becoming the owners of five acres of land (without monthly wages) or continuing as wage workers in the various departments of the project. At the present time, most of the settlers have built new additions to their houses. These additions usually consist of a room for the traditional mud oven and another room for the storage of grains and other belongings. Besides these two

* Egyptian peasant
additions, almost all settlers have made a place inside their house for
poultry and livestock. All additions are built in the traditional way,
with mud bricks, with the exception of a few cases where baked bricks were
used. Stacks of cow dung cakes and heeps of dried cotton trees and maize
have found their way back to the roofs of the houses thus reintroducing
into this so-called model rural community one of the main features of
the traditional Egyptian village which the project planners were trying
to avoid. This came about mainly due to the following reasons:

(1) the failure of the village planners to provide for the
growing size of the family. (The model houses were based on
the assumption that the size of the family unit would be
constant, i.e., a father, mother, and two children.);

(2) the abandonment of many of the restrictions imposed upon
the settlers due to the lack of continuity resulting from
change in project administration; and

(3) the physical appearance in the village of members of the
extended family, either due to marriage of one of the
settler's children (who then stayed with his or her parents
due to lack of available housing elsewhere in the village)
or due to some relatives moving in from the old village
to live with the settler in his new house in the model
community.

Small shops were built by some entrepreneurs who started doing business
in the village; some of these are from among the settlers themselves.
In spite of these changes, Omar Makram and Omar Shahin villages still have a much higher standard of environmental sanitation, as well as a much higher standard of living and level of welfare in terms of services provided, than most traditional Egyptian villages.

Both Omar Makram and Omar Shahin are served by a health unit located in the latter village. It is staffed by a resident physician who is assisted by three female nurses, two assistant male nurses, a laboratory technician and a number of unskilled workers. The health unit treats simple cases, handles emergencies, and treats endemic parasitic diseases. It provides maternal and child health care (MCH) as well as family planning services, dispenses drugs and is responsible for preventive activities and sanitation. Even though the average family size in the two villages exceeds seven persons, the individual family member still receives a much higher standard of health services than do their fellow countrymen in other Egyptian villages. It is also interesting to note that family planning services were integrated with the MCH program and within the general health services of Tahrir Province.

Difficult health cases which cannot be dealt with by physician are transferred to the central hospital at Badr, the central town in the Province. At the present time, the settlers are not covered by any medical insurance system. Thus, they either make use of the government health units and hospitals or seek private physicians in or outside the Province.

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1 Omar Makram and Omar Shahin have a combined population of approximately 500 families to date.
Other important institutions in the village from the point of view of the study are:

1) Schools - There is one primary school in each village and a preparatory school at Omar Makram. The preparatory school serves four villages, Omar Makram and Omar Shahin being two of these. It is important to mention that education in Egypt is looked upon as an accessible right and is therefore provided at no direct charge; hence, accessibility to education is not governed by family income. In spite of this fact, an examination of school records in both villages showed a fifteen per cent drop-out rate at the primary and preparatory levels. In most cases, this was due to the settler's need to have his children assist him in cultivating the land, since full mechanization is not yet available to him. It was also found that the high daily absenteeism rate of ten to fifteen per cent, for reasons other than sickness, could only be explained on the basis of the need for assistance on the land.

2) Nursery - Each village has a nursery for children below six years of age. It is administered by the social unit of the village and renders its services free of charge to settlers and village employees. At the time of the study, thirty-five children were enrolled in Omar Makram's nursery while thirty were enrolled in Omar Shahin.
(3) The Rural Development Society - The Rural Development Society, of which the settlers form the general assembly, is run by an elected board of directors composed of nine members. The objective of the Society is to help develop various socio-economic, cultural and political activities in the village. Thus, the Society is concerned with problems of housing, public utilities, family welfare, sports, cottage industries, recreation, etc.

(4) The Youth Club - The youth club contains a library, a television set and sports equipment. This club is open for settlers and other village residents and is, in fact, the meeting place of settlers after working hours. Attached to the club are football and basketball fields.

Thus, the Tahrir villages contain most of the modern institutions which planners consider essential to the formation of any new community. They also serve many of the purposes handled by the traditional Egyptian village. However, there appears to be a greater diffusion of functions and sharing in decision-making than under the traditional village system where the rule of the Omda had wide and varying jurisdictions; indeed, any actually operating institution only existed due to his paternal benevolence and permission.

Concerning those institutions dealing with children and youth, it should be noted that there is absolutely no sex education. Sex education, and in general, any reference to reproductive behaviour is taboo and
hence there is little opportunity for instilling attitudes favourable
toward family limitation among the young people.

In addition to the above institutions, each village has an agricultural
society which provides seeds, fertilizers, pesticides, loans and help in
the marketing of main crops. The social unit of the village undertakes
follow-up of settlers, case work and village maintenance, while the
cooperative society provides the settlers with their every day needs such
as dry goods, groceries etc. Each village has its own mosque while Omar
Shahin has the only church in the province. Attached to the school in
both villages is a big hall which is used for general lectures, seminars,
parties and weddings. The hall is known as the village theater since it
contains a built-in stage. The cooperative society, the telephone and
telegraph centers, the bakery and the marketing center are all grouped in
one block near the entrance of the village.

The village administration is headed by the Omda who is elected from
among the settlers and who is responsible for the internal security of
the village. The Omda is looked upon as the head of the community but,
in Tahrir Province, he is not as powerful as the Omdas in other Egyptian
villages, nor nearly so powerful as the Omdas of a century or even a
quarter of a century ago. This is mainly due to the existence of several
other institutions which handle many of the problems which were tradi-
tionally handled by the Omda. He is assisted by two elected settlers
who are called Nashaieik El Qariya (i.e., seniors of the village). In
addition, a number of guards, usually five, are appointed by the
province to assist the Omda in maintaining law and order.
The political institution of the village follows the same pattern as in all Egyptian villages and is represented by the village unit of the Arab Socialist Union which is composed of ten elected members who form a core group known as the Basic Unit.

This Basic Unit is assisted by several committees among which the most important are:

(1) the Agricultural and Irrigation Committee;
(2) the Health and Price Control Committee; and
(3) the Cultural and Youth Committee.

Thus one can say that the organization of Omar Makram and Omar Shahin villages follows the same pattern as is to be found in the traditional Egyptian village. Yet, the settlers represent a group of selected farmers who, through a higher income subsidized by a higher flow of government services, both in quantity and quality, have been provided with a much higher standard of living than the average Egyptian farmer.

Family Planning in Tahrir Province

Family Planning facilities in the province were provided as an integral component of the health services and were attached to the local MCH program. Settlers were introduced to the concepts of family planning as early as 1955, almost from the very beginning of the project, and service was available upon request and, for the most part, free. The villagers were instructed in family planning and techniques were introduced. It is very important to view the results of this microcase study with these
points in mind. Tahrir represents a village network where family planning programs have been actively in existence for sixteen years.
III. THE STUDY

Objectives of the Study

The basic objectives of the study were two fold, namely:

(1) to study the implications of small and large numbers of children on the health and welfare of the individual families; and

(2) to study the implications of the rate of growth of individual families on their level of health and welfare.

Methodology

A random sample of one hundred families was drawn out of the 320 original settler families by selecting every third household in Omar Makram and Omar Shahin villages. Thus, the sample represented almost 10 per cent of the original settlers. The parents in every household were interviewed using a prepared questionnaire to obtain basic data on family income, education, leisure, and attitudes towards family planning. In addition, the members of the family were examined clinically by a physician supported by a laboratory technician who did blood determination for haemoglobin, and urine and stool analyses for parasitic diseases. The results of the medical examination and laboratory tests were recorded on a special form which included history of pregnancies and their outcome, nature of feeding and weaning period of the children and other information relating to pregnancy and childbirth.
Cases with parasitic infestations were given treatment. In addition, a nutritionist did a dietary survey of every fifth household included in the study. Thus, two hundred parents were interviewed to obtain socio-economic data and six hundred family members (200 parents plus 400 children) were medically examined, and specimens of their blood and urine analyzed in order to obtain the basic medical information on which to base conclusions for the study. It should be mentioned that 162 of the children included in the study were not examined due to various reasons. The tables of results in the study will focus heavily on the use of the various indicators in terms of family size groupings, wherever possible.

**Basic Data of the Study Sample**

The total population in the sample under study was 762 individuals, representing one hundred families in Omar Makram and Omar Shahin villages. The mean family size is 7.62 and the average number of live children per married woman is 5.62. Table 1 shows the distribution of the sample population by age and sex.

<table>
<thead>
<tr>
<th>AGE GROUP</th>
<th>MALE</th>
<th>FEMALE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>1 - 4</td>
<td>65</td>
<td>71</td>
<td>136</td>
</tr>
<tr>
<td>5 - 9</td>
<td>13</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>10-14</td>
<td>38</td>
<td>47</td>
<td>85</td>
</tr>
<tr>
<td>15-19</td>
<td>54</td>
<td>52</td>
<td>106</td>
</tr>
<tr>
<td>20-29</td>
<td>116</td>
<td>137</td>
<td>253</td>
</tr>
<tr>
<td>30-44</td>
<td>79</td>
<td>58</td>
<td>137</td>
</tr>
<tr>
<td>45-64</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>65 +</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>ALL AGES</strong></td>
<td><strong>377</strong></td>
<td><strong>385</strong></td>
<td><strong>762</strong></td>
</tr>
</tbody>
</table>
Results of the Study

Population Composition and its Implications for Family Welfare and Family Size

From the population composition of the sample it can be seen that 49.47 per cent of the sample are males while 50.53 per cent are females. The number of children below fifteen years of age is 260, which constitutes 34.12 per cent of the sample while the number of children and youths under the age of twenty constitutes 45 per cent of the total population. It was found at the time of the study that out of the 562 children and youth included in the sample, 302 (or 38.44 per cent) were born before their parents moved to Tahrir. This group falls in the age groups 15-19 and 20-29; the oldest was 24 at the time of this study.

Educational Levels of Parents and Education of Children and the Implications on Family Welfare and Family Size:

Concerning the educational level of the parents in the sample, illiteracy was found to be very high. The illiteracy rate among the fathers was 62 per cent while among the mothers it was found to be 96 per cent. This was the case in spite of the fact that when Tahrir Province was started and the settlers selected, literacy was an essential requirement (i.e., know how to read and write), at least for the head of the household. In the ensuing sixteen year period, the farmers literally relapsed back into illiteracy.

The remaining 38 per cent of the fathers knew how to read and write but only one had had formal schooling lasting more than ten years. Out of the 38 literate fathers, 33 read newspapers more or less on a daily
basis. Four per cent of the literate mothers knew how to read and write comparable to the primary level. The educational level of the adult settlers has affected the type of economic activity they are engaged in to some extent, but this is difficult to determine. Difficult because, though all the fathers in the sample own five acres each, in addition to owning their own homes, much of this was simply given to them as part of the scheme of the Tahrir settlement and is not directly traceable to any specific educational level of the farmer. Only 20 per cent of the mothers in the sample were engaged in activities other than being housewives, giving their families an additional source of monetary income. No appreciable adult education programs were found to exist in the two villages.

Regarding the educational level of the children in the sample, Table II shows the distribution of male children according to the three educational levels (primary, preparatory, and secondary). In addition, the number of children who have dropped out of school and gone to work is shown.

<table>
<thead>
<tr>
<th>AGE &amp; LEVEL</th>
<th>TOTAL NUMBER OF CHILDREN</th>
<th>ENROLLED</th>
<th>WORKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 13 Primary</td>
<td>38</td>
<td>33 (87%)</td>
<td>5 (13%)</td>
</tr>
<tr>
<td>13- 16 Preparatory</td>
<td>54</td>
<td>49 (90.74%)</td>
<td>5 (9.26%)</td>
</tr>
<tr>
<td>17- 21 Secondary</td>
<td>47</td>
<td>12 (25.53%)</td>
<td>35 (74.47%)</td>
</tr>
<tr>
<td><strong>ALL LEVELS</strong></td>
<td><strong>139</strong></td>
<td><strong>94 (69.7%)</strong></td>
<td><strong>45 (30.3%)</strong></td>
</tr>
</tbody>
</table>

Thus 69.7 per cent of the male children in the school-age group are enrolled, while 30.3 per cent are working at the present time. Out of
the five working at the preparatory school age level, two finished their primary schooling while the other three did not. In the secondary level working group, ten (28.5 per cent) out of the thirty five earned a primary education certificate and one earned a diploma from an intermediate school.

Although Table II reflects, in general, a higher overall ratio of enrollment in these two villages than in other traditional Egyptian villages, the general drop-out pattern at the three different levels seems to be very similar to the national rural pattern. This is attributed to the fact that children and youths are needed for work on the land.

Table III gives an indication of the educational status of female children in the two villages at the three levels of education. It also records those who are not enrolled.

**TABLE III**

**EDUCATIONAL STATUS OF FEMALE CHILDREN IN THE SAMPLE**

<table>
<thead>
<tr>
<th>AGE GROUP AND LEVEL OF EDUCATION</th>
<th>TOTAL NUMBER</th>
<th>ENROLLED</th>
<th>NOT ENROLLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-13 Primary</td>
<td>72</td>
<td>35 (48.61%)</td>
<td>37 (51.39%)</td>
</tr>
<tr>
<td>14-16 Preparatory</td>
<td>31</td>
<td>19 (61.29%)</td>
<td>12 (38.71%)</td>
</tr>
<tr>
<td>17-21 Secondary</td>
<td>78</td>
<td>20 (25.64%)</td>
<td>58 (74.36%)</td>
</tr>
<tr>
<td>ALL LEVELS</td>
<td>181</td>
<td>74 (35.3%)</td>
<td>107 (64.7%)</td>
</tr>
</tbody>
</table>

The above table shows that enrollment of female children in all levels is 35.3 per cent which is almost 50 per cent of the enrollment of the male children at the three levels (69.7 per cent). This is quite consistent
with the attitude of the Egyptian farmer towards female education. The
two to one ratio seems to hold true for male/female enrollment in all
Egyptian villages, regardless of the fact that Tahrir Province placed a
high emphasis on education. Almost all of the unenrolled girls are
helping their parents at home or are married. The preparatory level
(ages 14-16) reflects the fact that marriage at the age of fifteen or
sixteen is the common practice.

Attitudes Towards Family Planning

The analysis of the interviews with the one hundred fathers revealed
that 34 per cent stated that they had heard about family planning, while
66 per cent stated the reverse, i.e., that they had never heard about
family planning. This latter finding is extremely interesting since
Tahrir Province has constantly and consistently been supplied with family
planning information and services for the past sixteen years. In fact,
the original group of settlers, from which this sample was drawn, had
very actively opposed the idea of family planning when the program was
first introduced in 1955 and had, in fact, protested against the
dissemination of family planning information to their wives by the doctor.
(The author of this paper was the community physician in Tahrir.) The
fact that sixteen years later, 66 per cent of the fathers interviewed
claimed to know nothing about family planning indicates that their
resistance to it is still very strong and has taken the form of acting as
if it were unknown to them.

From the fact that 36 per cent of the fathers in the sample stated
that their wives had tried family planning, we can see an attitude toward
family planning as being something for the wives rather than as a mutual decision leading to action. It is to be noted, however, that the true decision maker in this matter in Egypt tends to be the husband, who, when he is convinced, then provides a form of contraception involving the female. Rarely, if ever, does it involve the man accepting or submitting to sterilization. In this regard, the nurses' records showed that out of the thirty-six women practicing, or who had practiced family planning, 33 (91.66 per cent) used the pill and three (8.34 per cent) the loop. Out of those who used the pills, only seventeen (51.5 per cent) are still using them, and they began using them only after the fourth or fifth fruitful pregnancy. The other sixteen (48.5 per cent) stopped for one reason or another prior to the time of the study. The usual reasons for stopping were cited as nervousness or ill health. Thus the final analysis shows that 18 per cent of the wives included in the sample were using family planning devices at the time of the study, of whom 94.4 per cent were using the pill.

When the wives who had used family planning devices were questioned concerning their reasons for using them, thirteen (36.1 per cent) stated that it was because they had enough children, while twenty-three (63.8 per cent) stated that their low income was the main reason. The average number of children per married woman among those who had tried family planning was found to be 5.9. As for those who did not try family planning, 35 per cent stated that children are an economic asset while 40 per cent stated religious reasons. The remaining 25 per cent said it is natural to have children and so did not believe in contraception. When asked
about the optimal number of children they would desire, 65 per cent of
the fathers said it was four, while 5 per cent said they preferred
five and 30 per cent suggested three. These answers were given when asked
about the number of living children desired - not about the desired
number of pregnancies.

The previous analysis shows that inspite of the high flow of
available information about family planning and the accessibility of
services to all Tahrir settlers since 1955, only 18 per cent of the mothers
sampled have adopted family limitation as a behavioural pattern in their
own lives. This attempt has met with little success, according to the
planners' concept of limitations, since even in this group, the average
number of children is 5.9. The data that the author was able to get
concerning pregnancy, weaning, and health of mothers together with
the information on housing accomodation, income and education, clearly
show the underlying reasons of the lack of success, in the planners'
terms, of the family planning program. This data will be presented in
the next section of the paper, but before proceeding, it is useful to make
some conclusions on attitudes toward family planning on the basis of this
discussion.

The results so far force us to conclude that family limitation as a
practice does not follow knowledge about family planning and the means
for its implementation. In fact, the study shows that a large portion of
the population sampled simply denied knowing anything about family
planning. Even with such a select group, whose level of welfare had
deliberately been increased and who had served as a captive audience for
family planning propaganda over the last sixteen years, the practice did not take root.

This study also provides an example of refutation of the theory that rural electrification will decrease the birth rate. Since the beginning, all the villages of Tahrir Province were completely electrified, including individual houses. Nevertheless, the electrification factor does not seem to play the role some family planning advocates claim. It seems that the type of economic activities in which the individual is engaged, play a much more important role in determining family size than do structural changes in the external environment.

All the settlers are agricultural workers who have been given five acres of land. Because it is newly reclaimed from the desert, the land still needs a great deal of effort to cultivate and, in fact, requires more work and care than older land. With little, or only partial, mechanization of farming methods, the settler still needs many hands to help.

**Impact of the Number of Children on the Health and Welfare of Individual Families**

**Outcome of Pregnancies:** Out of the 738 conceptions which the hundred mothers included in this study had experienced, 562 (76.15 per cent) children were still living at the time of the study. The remaining conceptions accounted for the total number of foetal, neonatal and child deaths, the breakdown of which is shown below in Table IV.
TABLE IV
FOETAL, NEONATAL AND CHILD DEATHS IN THE SAMPLE STUDIED

<table>
<thead>
<tr>
<th>TYPE</th>
<th>NUMBER</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abortion (natural)</td>
<td>83</td>
<td>44.62</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>3</td>
<td>6.12</td>
</tr>
<tr>
<td>Neonatal Death</td>
<td>31</td>
<td>16.66</td>
</tr>
<tr>
<td>Child death</td>
<td>59</td>
<td>31.72</td>
</tr>
<tr>
<td></td>
<td><strong>176</strong></td>
<td></td>
</tr>
</tbody>
</table>

The distribution of the total outcome of conceptions by family size is shown in Table V, while Table VI gives the comparison of the number of unsuccessful pregnancies in percentage terms in relation to family size. Table VII shows the average number of pregnancies per woman and the average child loss per woman according to family size grouping. Table VIII, showing abortions per live birth distributed by family size, completes the pregnancy-childbirth data of the study.

TABLE V
DISTRIBUTION OF TOTAL OUTCOME OF CONCEPTIONS BY FAMILY SIZE

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NO. OF FAMILIES</th>
<th>ABORTIONS</th>
<th>STILLBIRTHS</th>
<th>NEONATAL DEATHS</th>
<th>CHILDHOOD DEATHS</th>
<th>LIVING CHILDREN DEATHS</th>
<th>TOTAL (AND CONCEPTIONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>11</td>
<td>-0-</td>
<td>.9</td>
<td>13</td>
<td>42</td>
<td>33</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>31</td>
<td>2</td>
<td>8</td>
<td>18</td>
<td>135</td>
<td>59</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>32</td>
<td>-0-</td>
<td>11</td>
<td>18</td>
<td>245</td>
<td>61</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>140</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td><strong>100</strong></td>
<td><strong>83</strong></td>
<td><strong>3</strong></td>
<td><strong>31</strong></td>
<td><strong>59</strong></td>
<td><strong>562</strong></td>
<td><strong>176</strong></td>
</tr>
</tbody>
</table>

----------------------------------------

TOTAL 738
### TABLE VI

**COMPARISON BY FAMILY SIZE OF UNSUCCESSFUL OUTCOMES OF PREGNANCIES**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>PERCENTAGE OF UNSUCCESSFUL OUTCOMES OF PREGNANCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>35.48</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>38.31</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>24.40</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>10.48</td>
</tr>
</tbody>
</table>

Tables V and VI show, with the exception of family size group 6-7, an inverse relationship between the family size and percentage of unsuccessful outcome of pregnancies.

### TABLE VII

**AVERAGE NUMBER OF PREGNANCIES AND AVERAGE CHILD LOSS PER WOMAN IN EACH FAMILY SIZE GROUP**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>AVERAGE NUMBER OF PREGNANCIES PER WOMAN</th>
<th>AVERAGE CHILD LOSS PER WOMAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>7.06</td>
<td>2.96</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>6.72</td>
<td>2.03</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>7.71</td>
<td>1.06</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>7.94</td>
<td>.76</td>
</tr>
</tbody>
</table>

### TABLE VIII

**ABORTION PER LIVE BIRTHS PER THOUSAND DISTRIBUTED BY FAMILY SIZE**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>ABORTIONS</th>
<th>ABORTIONS PER LIVE BIRTH/1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>11</td>
<td>118</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>31</td>
<td>201</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>32</td>
<td>128</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>9</td>
<td>73</td>
</tr>
</tbody>
</table>

| Total       | 100                | 83        | 134                           |
Table VIII shows that the number of abortions per live birth is lowest in the family size group 10-11 (73/1000) and highest in the family size group 6-7 where it almost triples (201/1000). Also the same group had the highest child death rate (below fifteen years of age) per one thousand live births (117/1000) while the 10-11 family size group had the lowest ratio (81/1000).

We can conclude, on the basis of the results presented in Tables IV through VIII, that family size does not depend on the family planning effort but is much more dependent on natural selection, pure and simple. People in the villages studied went on having children until they passed the age of fertility. They had a small family size if many of the pregnancies terminated in death or if they had a large number of child deaths. If not, the family size was large. Though the people might not have known the exact statistics, they clearly "planned" their families on the face of the evidence that at least two out of every seven pregnancies would result in death before birth, at birth or child death. With their needs for labour on the land, and faced with the poor survival rate, they aimed for an average of seven pregnancies in order that they would have at least five living children. The high loss rate means that the maternal and child health services are either of a poor quality or are simply not used by the people. The high loss rate and the apparent lack of adequate maternal and child health services precludes the villagers' acceptance and use of family planning as propounded by the planners. It was found, however, that the villagers sampled did use a method of family spacing which resulted in one pregnancy occurring every two to two and a half years.
This will be discussed in the next section as it does affect family size and is a "natural" means of family limitation.

**Infant Feeding and Weaning Practices and their Impact on Family Size**

The families studied used breast feeding combined with a relatively long weaning period as a means of family spacing. Breast feeding for different family size groups varied between 99 per cent and 97 per cent as shown in Table IX. There was very little bottle or mixed feeding and the average period of breast feeding varied between 16.26 months and 19.2 months. Delayed weaning does adversely affect the nutrition of the child, yet the long weaning period works as a natural spacing mechanism. In this respect, it is interesting to note that in these two villages the author found that the usual spacing between pregnancies varied between two and two and a half years for the majority of the people.

**TABLE IX**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th># OF FAMILIES</th>
<th>BREAST FEEDING</th>
<th>BOTTLE FEEDING</th>
<th>MIXED FEEDING</th>
<th>AVERAGE WEANING PERIOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>98</td>
<td>2</td>
<td>0</td>
<td>19.10 months</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>98</td>
<td>2</td>
<td>0</td>
<td>19.20 &quot;</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>97</td>
<td>1</td>
<td>2</td>
<td>18.06 &quot;</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>99</td>
<td>1</td>
<td>0</td>
<td>16.26 &quot;</td>
</tr>
</tbody>
</table>

As was expected the group with the largest family size had the shortest weaning period.
General Impact of Family Size on the Health of the Mothers and Vice Versa

As stated previously, all of the one hundred mothers were given physical examinations as were their husbands and families. While the general level of health in the villages in itself has a bearing on family size, our analysis will focus on the health of mothers, in particular, since the data on pregnancy has clearly indicated the importance of this group in influencing family size.

It was found that roughly 25 per cent of the mothers examined showed signs of pallor, malnutrition, underweight and angular cheilosis; they also looked several years older than their true age. These women were among those belonging to the larger family size groupings in the study. Hence the physical examination revealed some evidence for suggesting that large family size adversely affects the health of the women.

The primary function of woman in Egyptian villages, as is the case in many other countries, is to bear children. From this function, she derives her status in the society. However, many of the women in Omar Makram and Omar Shahin villages either assist their husbands on the land or work in some department of the Tahrir administration. Even though most are housebound with domestic duties, the number of working mothers in the two villages is higher than in the average Egyptian village. Housework, field work and/or other work outside the home plus the tendency toward numerous pregnancies, has affected the health and welfare of these women.

Aside from the physical examination, specific tests were used to obtain a clearer picture of the level of health in an attempt to analyze the
relation between health and family size more precisely. Blood was tested for haemoglobin levels and the grams of haemoglobin in the blood was used as the main indicator of health. Testing for incidence of parasitic diseases was also carried out since parasitic diseases, while not fatal, are extremely debilitating and greatly affect the level of well-being of the people. Table X summarizes the results of the haemoglobin tests of the mothers by family size groupings.

**TABLE X**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>PERCENTAGE OF HAEMOGLOBIN LEVELS OF MOTHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>61.36</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>60.00</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>59.20</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>60.26</td>
</tr>
</tbody>
</table>

No significant difference was found in the haemoglobin levels of the mothers belonging to different family size groups. It was found, however, that 55 per cent of the adult female population, irrespective of family size group, suffers from a compound pathology of one or more of the following parasitic diseases: schistosomiasis (bilharzia); ankylestomiasis; and ascariosis. These parasitic infestations mask any differences in haemoglobin level and, together with lack of protein intake, account for the low levels (by the standards of developed countries) of haemoglobin. It was interesting to note, however, that the haemoglobin levels appear to be significantly better than in other Egyptian villages where the average is about 50 per cent. The improved nutrition of the Tahrir villages
may have contributed to this.

An analysis was done of the relationship between the number of pregnancies (from two to nine) and the haemoglobin levels in a selected group of mothers. The results showed no significant relationship due to the masking effect of the parasitic diseases. A similar lack of relationship resulted when an attempt was made to analyse the relationship between abortions and the haemoglobin level.

The high incidence of parasitic diseases, especially schistosomiasis, is particularly striking because of the fact that the entire area of South Tahrir was screened to prevent any of the snails which carry the disease from infesting the area. This screening was effective; however, the inhabitants became infested when they returned to their former villages for visits and thus the parasite was introduced into Tahrir. Since there is no immunity against schistosomiasis, the farmers contract it again and again. Also, the treatment is long - twelve days - and the people do not like to take the time for the cure when they know that they will contract it again because of the demands of and methods used in their work.

These parasitic diseases are very debilitating and greatly reduce the energy and productivity of the individual. The wise farmer, knowing he and his family suffer or will be suffering from parasites because of the nature of their work, hedges against the fact of poor health and little energy by producing as many children as have utility. And where two strong healthy energetic children might be enough for the planner, the farmer instinctively knows that the five live children he can at best
hope to get out of his wife's seven pregnancies will each have a reduced productivity because of poor health (due to low haemoglobin level and infestation with one or several parasites).

**Nutrition and Family Size**

The nutrition of the family is a function of its per capita income. In other words, the nutritional level of an individual is dependent not only on his family size group but on his per capita share of the family's income. The per capita income of the sampled families varied between LE 28.10 per year among those with a family size of 4-5 members and LE 12.70 among those with a family size of 10-11. Table XI sets forth the results showing the relationship between nutritional level, per capita income and family size groupings.

**TABLE XI**

RELATIONSHIP BETWEEN PER CAPITA INCOME AND NUTRITION OF FAMILY MEMBER BY FAMILY SIZE GROUP

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>PER CAPITA INCOME</th>
<th>TOTAL GRAMS OF ANIMAL PROTEIN INTAKE/DAY/PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>LE 28.10 ($64.59)</td>
<td>13.41 grams/day/person</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>LE 19.50 ($44.82)</td>
<td>11.43 grams/day/person</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>LE 17.68 ($40.64)</td>
<td>7.50 grams/day/person</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>LE 12.70 ($29.19)</td>
<td>6.14 grams/day/person</td>
</tr>
</tbody>
</table>

Total animal protein intake is highest in the 4-5 member family size group where the protein intake is 13.41 grams per day per person, which is almost equal to the national level of 14 grams per day per person. Protein intake is lowest in the 10-11 member family size group.
The details of the animal protein content of the settlers' diet are shown in Tables XII and XIII.

**TABLE XII**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>MEAT &amp; POULTRY</th>
<th>FISH</th>
<th>MILK</th>
<th>CHEESE</th>
<th>EGGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>27.39</td>
<td>5.47</td>
<td>5.47</td>
<td>40.31</td>
<td>1.76</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>20.54</td>
<td>4.14</td>
<td>4.4</td>
<td>33.42</td>
<td>1.23</td>
</tr>
<tr>
<td>8-9</td>
<td>36</td>
<td>13.94</td>
<td>3.06</td>
<td>3.06</td>
<td>26.88</td>
<td>0.97</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>11.39</td>
<td>2.65</td>
<td>2.65</td>
<td>21.78</td>
<td>0.80</td>
</tr>
</tbody>
</table>

The types of food listed in Table XII vary in their protein content.

Table XIII lists the grams per person per day of animal protein intake per person per day derived from the total grams consumed as stated in Table XII by type of food for each family size group.

**TABLE XIII**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>MEAT &amp; POULTRY</th>
<th>FISH</th>
<th>MILK</th>
<th>CHEESE</th>
<th>EGGS</th>
<th>TOTAL GRAMS PROTEIN PER PERSON PER DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>4.71</td>
<td>1.49</td>
<td>0.18</td>
<td>6.20</td>
<td>0.27</td>
<td>13.41</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>3.53</td>
<td>1.13</td>
<td>0.145</td>
<td>5.15</td>
<td>0.17</td>
<td>11.43</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>2.39</td>
<td>0.86</td>
<td>0.10</td>
<td>4.14</td>
<td>0.01</td>
<td>7.50</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>1.96</td>
<td>0.73</td>
<td>0.09</td>
<td>3.35</td>
<td>0.01</td>
<td>6.14</td>
</tr>
</tbody>
</table>

Fish, meat, poultry and cheese have the highest protein content per gram but cheese was the source which the people depended on for more than half of their total grams of animal protein per day per person irrespective of family size. Cheese is a rich source of protein and it is considerably cheaper than meat, fish or poultry.
Impact of Housing Accommodation on Family Welfare

The houses in the villages were built for a family size of approximately four to five members and the additions which the farmers built were intended for the housing of animals and storage of property, not for additional family living or sleeping space. Thus, to the extent that overcrowding represents a decrease in family welfare, it is clear from Table XIII that the family welfare of the settlers, as indicated by living accommodation, has been adversely affected by family size.

**TABLE XIV**

<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th>NUMBER OF FAMILIES</th>
<th>PER CAPITA ACCOMMODATION PER ROOM</th>
<th>PER CAPITA ACCOMMODATION PER CU. METER</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5</td>
<td>16</td>
<td>.64</td>
<td>27.44</td>
</tr>
<tr>
<td>6-7</td>
<td>29</td>
<td>.45</td>
<td>19.29</td>
</tr>
<tr>
<td>8-9</td>
<td>38</td>
<td>.35</td>
<td>15.00</td>
</tr>
<tr>
<td>10-11</td>
<td>17</td>
<td>.29</td>
<td>12.43</td>
</tr>
</tbody>
</table>

Before closing this section of the paper it is useful to summarize the results of the study in the form of a table compiling the more important findings. Table XIV summarizes the results of the study giving the data, where available, by family size grouping.
<table>
<thead>
<tr>
<th>FAMILY SIZE</th>
<th># OF FAMILIES</th>
<th>EDUCATION</th>
<th>FAMILY PLANNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Adults</td>
<td>% of Children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy</td>
<td>Illiteracy</td>
<td>Enrolled</td>
<td>Not enrolled</td>
</tr>
<tr>
<td>M F M F M F</td>
<td>M F M F M F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>Women</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claiming to</td>
<td>Know about</td>
<td>F.P. in</td>
<td></td>
</tr>
<tr>
<td>know about</td>
<td>family</td>
<td>Past or</td>
<td></td>
</tr>
<tr>
<td>children</td>
<td>planning</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Yes  No</td>
<td>Past  Now</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For all 100 groups combined (breakdown not available)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30%   45%   62%   66%   60%   33%   64% 34% 66% 36% 18%</td>
<td></td>
<td></td>
<td></td>
</tr>
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IV. SUMMARY AND CONCLUSIONS

This study, drawn from a sample of the original settlers of Tahrir Province, was concerned with giving a better insight into understanding the relationship of family size and general family welfare. In this regard it was found that certain indicators of welfare were directly affected by family size. (Refer for example to Table XIII for data on nutrition, income, and accommodation.)

The data on education is of interest in that it shows that it is not so much family size nor available and accessible educational opportunities which determine the extent to which people avail themselves of schooling, but rather the type of economic activity in which the father is engaged. High drop-out rates, absenteeism, and tardiness, together with low enrollment rates beyond the preparatory level bar entry to other types of economic activity.

The importance of the type of economic activity as a determining factor was seen again in regard to the data on health where it was found that 65 per cent of the people suffered from schistosomiasis in combination with either ankylestomiasis or ascariasis.

Pregnancy data and attitudes toward family planning again pointed to the crucial role of the type of economic activity as a determinant of family size and, hence, of family welfare. The type of economic activity seems to be the most important variable to be changed if family planning efforts are to have the impact on family size desired by the population planners.
Economic activity is chiefly affected by education, principally education and training designed to provide the settler with skills. Even if agriculture remains the main form of economic activity, the shift from manual to mechanized farming would directly affect the farmers' need for and, hence, their reproduction of children over a long period of time. Figure 1 is a model of the more important relationships examined in this study; it places emphasis on the more important variables discussed so far.

**FIGURE 1: FACTORS AFFECTING FAMILY WELFARE**

Figure 1 shows that the type of economic activity is the determinant of family income and family size while the variable, family welfare, is directly affected by family income and indirectly (i.e., per capita shares of family welfare) by family size. Education directly affects the type of economic activity and thus indirectly affects family income.
One of the interesting features of this case study is that the villages studied were drawn from a special model village project where many structural changes were introduced, and relatively vast (in terms of the Egyptian villages) subsidies provided. It is clear now, after 16 years, that the introduction of structural changes and subsidies does not work as a means for changing the Egyptian farmers' basic behavioural patterns, let alone his reproductive patterns. This is most clearly seen in regard to the data on reproductive behaviour. For family planning to be really effective, functional changes must be introduced. And these functional changes, if they do not completely change the type of economic activity, must at least alter it from one of labour dependency to machine dependency.

Income supplements in the form of goods and services, such as were introduced in Tahrir, do not change reproductive behaviour. The reason for this is not only because of difficulties of quality in the services themselves (in this study, the MCH services), but because the basic decisions are for the settlers themselves to make and where there are no functional changes altering their type of economic activity, they will continue to make decisions concerning family size which will best serve their own immediate purposes. Hence, it is highly unlikely that more family planning propaganda, pills or other services will change the family size pattern which the author found to exist in Omar Makram and Omar Shahin villages.

This study raises a question with which population planners must be concerned. If we accept that:
(1) population planners advocate and hold as their objective a drastic decrease in family size patterns throughout the developing countries; that

(2) exposure to and knowledge about family planning theory and methods over an extended period of time (sixteen years in Tahrir) has a questionable effect on reproductive behaviour where manually orientated agriculture is the principal type of economic activity; and that

(3) functional changes in the type of economic activity (which are in turn dependent on education) will probably not show any results for a long time (perhaps a generation);

then, the question is what kinds of measures should be used to overcome the challenge of time? The results of this study indicate that more direct and drastic measures would perhaps reduce the gap between the settlers' desired family size and that of the planners. However, the implementation of more direct and drastic measures imply that decision making concerning family size would be removed from the domain of the family. If this were the case, and coercion rather than persuasion were used, ethical and moral questions concerning basic human dignity and human rights, which are the fundamentals of human welfare, would be raised which could not easily be brushed aside, even in the face of the seriousness of the population problem. Rather than the more direct but coercive approach, the author holds that the only way to achieve lasting changes in reproductive behaviour is to introduce the functional changes which will, though more gradually, affect the family size and hence family welfare of not only the people of Tahrir Province but of the nation as a whole.
APPENDIX

QUESTIONNAIRE

PART I. SOCIO-ECONOMIC INFORMATION

Name of Village in El Tahrir Province ____________ House # ______
Husband's Name ____________________________________________
Wife's Name ______________________________________________
Original Village ____________ Date of Arrival in El Tahrir ______
Date of Investigation ________________ Signature of Investigator

______________________________
Appendix
Questionnaire
Page one

I. GENERAL INFORMATION ON HUSBAND AND WIFE

A. Husband

1. Age
2. Level of Education
3. Vocation
4. Employment
5. Date of Marriage

B. Wife

1. Age
2. Level of Education
3. Vocation
4. Employment
5. Date of Marriage

C. Children

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D. Family Income

1. Yearly salary if employed LE per year
2. Yearly income from land LE per year
3. Additional income from other activities LE per year

E. Ownership

1. Cultivable land # of Feddans
2. House
3. Cattle
4. Poultry
5. T.V.
6. Radio
7. Butane gas burner
8. Other

F. Diet- Per week consumption of:

1. Meat
2. Poultry
3. Fish
4. Cheese
5. Eggs
G. Housing

1. Type
2. Number of Rooms
3. Number of persons per room
4. Size of rooms
5. Running water
6. Electricity
7. Sewage
8. Laboratory facility
9. New additions built by the settler:
   a. oven
   b. store
   c. animal shed
   d. sleeping rooms
   e. other

H. Family Planning

1. Heard about family planning
2. Did not hear about family planning
3. Tried family planning after 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, ...... nth child
4. Causes for trying family planning
   a. limited income
   b. too many children
   c. bad health of mothers
5. Reasons for not trying family planning
   a. religious
   b. economic
   c. natural
   d. other (specify)
6. Suitable number of children
   a. one
   b. two
   c. three
   d. four
   e. five
   f. more

I. Cultural and recreational level

1. Read newspapers and/or magazines
2. Watch TV programmes
3. Listen to radio
4. Leisure time spent at:
   a. home
   b. friend's house
   c. village club
   d. coffee shop
PART II. HEALTH INFORMATION

II. HEALTH INFORMATION

A. Outcome of Pregnancies

1. Total number of pregnancies
2. Total number of living children _____ male _____ female
3. Number of Abortions
4. Number of Still births
5. Number of Neonatal deaths
6. Number of child deaths
   (i.e., under age 15)

B. Feeding and Weaning Data

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C. Health Status of Family

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