SOME DEMOGRAPHIC ASPECTS OF A RURAL AREA IN IRAN

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DURING the year 1950, the Department of Rural Health Development[1] of the Iranian Ministry of Health conducted a survey in 173 villages of an agricultural region immediately southwest of the city of Tehran. These villages were intended to be a demonstration area for the training of public health personnel. Reliable data concerning the inhabitants of the region were not available in the official government archives; therefore, a survey of certain health and demographic aspects was indicated. This was to be the first step in the development of a broad training program.

With the help of a physician assigned to the Department by the Ministry of Health, a staff of enumerators was recruited from a group of recently graduated Persian midwives. After six weeks of seminars and lectures on the broad phases of public health and preventive medicine, eight of the midwife-trainees were selected for appointment to the staff. During the following four months these girls were given additional training both in the lecture room and in the field. Emphasis was placed on survey techniques and the reasons for collecting each type of information. A preliminary survey form was prepared and tested by field trials. After an analysis of these data, the form was modified and the general survey was started.

The information which was sought fell into three distinct categories: (a) data on individuals in each household, i.e., their occupation, age, sex, and the presence or absence of certain diseases and habits; (b) data on the environment in which members of the household lived; and (c) data on pregnancies which occurred among the women of each household during the ten years prior to the survey. This paper is primarily con-

Figure 1. Obstetrical and infant data. (Reproduced from Health Survey Form utilized in Shahriar Area—1950.)

Sheet No.	Name	Age	No. of Pregnancies 1319-28	No. of Premature	No. of Full-Term	No. of Abortions	No. of Live Births 1319-28	No. of Stillbirths	No. Living	No. Dead	No. Dying at <1 Month	No. Dying at <1 Year	No. Dying at >1 Year	No. Dying in First Year from Dysentery	Resp. Infection	Tetanus	Syphilis	Premature	Other Causes	No. of Deliveries Attended by Physician	Midwife	Other	No. of Deliveries at Hospital	Home	No. of Years Married	No. of Years Exposure	Observations

cerned with the last item, since, up to the time of the survey, data of this type for Iran were not available.

SURVEY TECHNIQUE

1. *Sampling.* Each of the villages, varying in population from 50 to 3,500, with an average of 260 inhabitants, was visited initially by one of the two sanitarians on the staff. The location of family units was determined, and each dwelling was assigned a number which was clearly marked on the wall or gate with red paint. When the enumerators arrived in the village, they interviewed only those families who lived in households marked with the number five or multiples of five. Frequently, one of the selected families was absent at the time of the survey. In this case the enumerators were instructed to pick at random one of the households numerically closest, above or below, the missing one and to revert to the original sequence with the next family interviewed. Data were obtained from any member of the family present at the time but included information on those absent as well. For the most part the respondents were adult women, but other members of the family who happened to be present helped to verify the data. Each household was visited only once during the survey.

2. *Recording.* That portion of the form dealing with pregnancies and their outcome is reproduced in Figure 1. Here were recorded the names of any women in the household who had had pregnancies, or who might have had pregnancies (i.e., those who were married though childless) during the ten years prior to the survey. The rest of the process was merely a matter of placing numerical figures in the appropriate columns. Under "Observations," pertinent comments or explanations were noted either in the local language (Farsee) or in English, depending on the enumerator's bilingual capacity.

3. *Qualifications.* It will be noted that only those pregnancies which occurred within the ten-year period prior to the survey were recorded. This time span was, in a sense, a compromise. It was felt that memory of events would be better for this period than for the entire reproductive life, and that

the number of pregnancies would be sufficiently large to be statistically significant. While greater accuracy might have been achieved by utilizing a one-year or two-year period prior to the survey, the advantage of having larger numbers and a more solid baseline outweighed the disadvantages. It is true that in lumping together all of the data from the ten-year period, two broad assumptions were made: first, that conditions pertaining to pregnancies and their outcome remained relatively constant; second, that the population was stable. Each of these assumptions seems reasonable, both in the light of general information about the region and in view of the fact that the objective of the study was to obtain data which would indicate an "order of magnitude" rather than an absolute quantification. It was recognized that the survey method, of itself, could provide no more than a general conception of existing conditions, but that this was better than nothing and would have to suffice until the local government could organize its own system for collecting reliable statistics.

4. *Definitions.* As far as definitions were concerned, it was obvious that the concepts of prematurity, abortion, and stillbirth had to be those defined by the women themselves rather than by standards adopted in countries where more and better medical care is available. *Prematurity,* for instance, depended on the mother's subjective interpretation as to whether or not a given infant happened to have been born smaller or earlier than expected. *Abortions* were even harder to pin down. Sometimes the products of conception were not recognized as such when passed. At other times, an unduly copious flow at the regular menstrual period might have been considered an abortion when, in fact, it was not. It is probable, however, that the frequency of abortions occurring in this population was much greater than the actual number stated. No attempt was made to distinguish between abortions and miscarriages.

If a baby breathed after delivery, it was considered to be a *live birth,* regardless of how soon thereafter it died. *Stillbirths* were defined as babies of normal or subnormal size who never

breathed after delivery. The *"number living"* referred to children who were born during the ten-year period and who were still alive. Conversely, the *"number dead"* referred to those who were born alive during the period and subsequently died.

The various categories on the cause of death of infants were quite unsatisfactory. The majority were recorded as having died of "other causes," and only in a few cases was there any reliable indication of a specific etiological agent. Autopsies are rare even in urban centers; thus, no pathological diagnoses were established.

When it came to the subject of assistance at the deliveries, the categories of physicians included both graduate doctors and "Behdars" (assistant doctors), who are limited by law to practice in localities with a population of less than 10,000. Graduate midwives are almost nonexistent in the area, and it was necessary to consider a midwife to be any woman who assisted at deliveries for profit. Among "others" were included deliveries which were either unattended or were assisted by a neighbor on a gratuitous basis.

5. *Statistical Considerations.* In obtaining the numerators for the infant mortality rates, there probably were errors in interpreting actual age at which a child died. A most important source of bias, in the direction of underreporting, resulted when the mother thought a child was "about one year old" at the time of death. Failing more specific details, these deaths were automatically included in the group dying at more than one year rather than in the infant group. An unknown degree of bias in the same direction involved children who died in infancy and were completely forgotten by the mother—thus not recorded. This probably occurred more often in the early portion of the ten-year period, memory of which was less precise. Failure to include such infants affected the reported birth rate, but, more profoundly, the infant mortality rate. A third source of bias arose from the fact that infants born a short period prior to the survey had not been exposed a full year to the risk of dying.

It will be noted that there are occasional discrepancies in the totals. This is due to the fact that whenever information regarding a particular item was lacking or doubtful, a question mark was recorded instead of an actual figure. In compiling the results, any questionable item was excluded from both the numerator and denominator. This procedure in no way affects the general validity of the rates but leads to totals which are not consistent throughout.

RESULTS

In a consideration of birth rates, factors such as age distribution of the population, sex ratios, and marital status must be taken into account for they have a direct bearing on the number of children produced.

Age Distribution. The distribution of the surveyed population by age and sex is shown in Table 1. The errors implicit in any census were undoubtedly present; e.g., there was the usual "heaping" at ages which were multiples of five, and the number of children under one year of age was probably under-reported. Also, there was an even greater degree of inaccuracy regarding the age of older persons than would be expected in a more enlightened population. Hence, it seemed advisable to group together all those with a stated age of 45 or over. When

Table 1. Distribution of population, by age groups and sex.

AGE GROUP	TOTAL		MALES		FEMALES	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Under 1	382	4.2	195	4.3	187	4.2
1–4	1,164	12.9	579	12.7	585	13.1
5–9	1,315	14.6	673	14.7	642	14.4
10–14	1,043	11.5	550	12.0	493	11.1
15–19	839	9.3	395	8.6	444	10.0
20–24	733	8.1	294	6.4	439	9.9
25–34	1,137	12.6	558	12.2	579	13.0
35–44	1,010	11.2	560	12.2	450	10.1
45+	1,400	15.5	768	16.8	632	14.2
Undetermined	7	0.1	6	0.1	1	–
TOTAL	9,030	100.0	4,578	100.0	4,452	100.0

a given age seemed disparate with physical appearance, the individual was asked about personal memory of well-known historic events which would tend to verify or invalidate the statement.

Table 1 reveals that 42.9 per cent of the female population were of childbearing age (i.e., 15 to 44). The fact that only 14.2 per cent of the females were 45 years of age and over indicates that the population was essentially young.

Sex Ratios. When one compares the male-female ratio in each age group, as shown in Table 2, one notes that in Iran there are relatively fewer males than females between the ages of 15 and 34 and that the ratio reverses sharply for the age groups 35 and over. There are several plausible explanations. There may have been a shift to the older age groups on the part of males who misstated their actual age in order to avoid military conscription. Another possibility is that the predominance of males in the older groups represents the true state of affairs and that the women from the rural area under study

Table 2. Number of males per 100 females for selected populations, in Iran, Egypt, and India, by age groups.

AGE GROUP	IRAN Village Survey, 1950	EGYPT 1937[1]	EGYPT Village Survey, 1950[2]	INDIA 1931[3]	INDIA Assam Tea Estates, 1950[4]
Under 1	104.3	99.5	75.0	98.9	}94.1
1–4	99.0	92.6	116.7	97.6	
5–9	104.8	100.6	114.3	109.9	102.5
10–14	111.6	117.4	140.0	113.6	122.1
15–19	89.0	112.7	72.7	101.1	90.8
20–24	67.0	95.5	95.2	97.7	73.5
25–34	96.4	88.5	77.6	107.5	103.4
35–44	124.4	106.2	119.2	114.7	142.2
45+	121.5	96.5	83.9	108.8	158.1
TOTAL GROUP	102.8	100.2	95.6	106.4	109.6

[1] Based on figures taken from: United Nations Statistical Office DEMOGRAPHIC YEARBOOK 1949–50. New York, 1950. Table 4, page 104.
[2] Sindbis Health Center, Egypt. Annual Report for 1950 by Dr. J. M. Weir to The Rockefeller Foundation. Unpublished data.
[3] Based on figures taken from: United Nations Statistical Office DEMOGRAPHIC YEARBOOK 1949–50. New York, 1950. Table 4, page 127.
[4] A. B. Gilroy. The Age and Sex Composition of Tea Estate Populations in Assam. Typewritten report. The Ross Institute of Tropical Hygiene, India and Pakistan Branch (1950).

may actually die earlier than the males. Conclusive evidence
one way or the other is lacking, but the social and economic
environment is such that women over the age of 45 have, in a
sense, outlived their usefulness and may consequently receive
less consideration when afflicted by illness or other vicissitudes
of old age. Also, one wonders whether the relatively smaller
number of females in the 35-plus age groups might not reflect
a high maternal mortality.

The relative dearth of males in the 15 to 24 age groups might
possibly be explained on any one of three bases: (1) A con-
siderable proportion may have actually been in uniform; (2)
The very threat of military service may have prompted some
to misstate their age; (3) Conditions in the villages are such
that there has been an apparent migration of young males
toward the urban centers in order to find employment.

For purposes of comparison, Table 2 also shows the sex ratios
in different age groups for Egypt and India, as reported in

Table 3. Marital status of surveyed population ten years of age and over,
by age groups and sex.

Age Group	MALES					FEMALES				
	Total	Single	Married	Widowed	Divorced	Total	Single	Married	Widowed	Divorced
					NUMBER					
10–14	550	550				493	484	9		
15–19	395	386	9			444	210	230	2	2
20–24	294	182	111	1		439	16	409	7	7
25–34	558	79	472	5	2	579	5	556	13	5
35–44	560	8	543	6	3	450	1	405	42	2
45+	773	4	741	25	3	633	4	306	310	13
Total	3,130	1,209	1,876	37	8	3,038	720	1,915	374	29
					PER CENT					
10–14	100.0	100.0				100.0	98.2	1.8		
15–19	100.0	97.7	2.3			100.0	47.2	51.8	0.5	0.5
20–24	100.0	61.9	37.8	0.3		100.0	3.6	93.2	1.6	1.6
25–34	100.0	14.2	84.6	0.9	0.3	100.0	0.9	96.0	2.2	0.9
35–44	100.0	1.4	97.0	1.1	0.5	100.0	0.2	90.0	9.3	0.5
45+	100.0	0.5	95.9	3.2	0.4	100.0	0.6	48.3	49.0	2.1
TOTAL GROUP	100.0	38.6	59.9	1.2	0.3	100.0	23.7	63.0	12.3	1.0

official censuses and for two areas where special studies were made (an Egyptian village and tea estates in Assam, India). The figures were essentially comparable, and it was interesting to note that the ratios of males to females in the 15 to 24 age groups were fairly similar to those noted in the Iran village survey.

Marital Status. Table 3 shows the marital status of the surveyed population of ten years of age and over. The important feature bearing directly on the birth rate is that in the age group 45 and over, all but 0.6 per cent of those still living were, or had been, married. It is also apparent that even with a law prohibiting marriage before the age of 16, the females marry earlier than the males. In the 20–24 age group only 3.6 per cent of the females were still single, as contrasted with 61.9 per cent of the males. Another striking feature is the number of widowed females in the age group 45 and over. In part this may be explained by the hypothesis that in the eyes of potential husbands, widows over the age of 45 present a less appealing prospect than their younger sisters.

It should also be mentioned that both divorce and polygamy are permitted by the Moslem religion, subject to certain conditions. Actually the proportion of divorces and the number of married men with more than one wife is low, probably owing to economic factors.

Other Factors. There are, of course, numerous additional factors which affect the over-all birth rate. These include social customs, the practice of contraception, age-specific mortality rates among the females, morbidity of certain diseases, nutritional status, and others. The relative importance of these factors was not studied.

DATA RELATING TO PREGNANCIES, BIRTHS, AND INFANT DEATHS

It was found that 1,616 of the women surveyed had had one or more gestations during the ten-year period prior to the survey. The data relating to these gestations are shown in Table 4.

The observed birth rate of 51.4 per 1,000 population is in

marked contrast to the rate of 20 for the entire country re-
ported in the official statistics of the Iranian Government. The
former rate, however, which represented an average annual
rate over the ten-year period prior to the survey, checked
closely with the observed number of children in the surveyed
population under the age of one year after a deduction was
made for infant mortality. Even the relatively high observed
rate of 51.4 per 1,000 population is probably understated for
at least two reasons: (1) Only those women who survived
could be interrogated; thus, live births occurring during the
ten-year period to women who died prior to the survey were
automatically excluded. There is evidence (Table 1) that this

Table 4. Data relating to pregnancies, births, and infant deaths among
sampled population during the ten years prior to the survey.[1]

Total Number of Pregnancies during the Period	5,146	
Number of Full-Term	4,567	
Number of Abortions	438	
Number of Prematures	134	
Number Undetermined	7	
Number of Live Births during the Period	4,645	BIRTH RATE: $\dfrac{4,645}{9,030} \times \dfrac{1,000}{10} = 51.4$ per 1,000 Population
Stillbirths	93	STILLBIRTH RATIO: $\dfrac{93}{4,645} \times 1,000 = 20.0$ per 1,000 Live Births
Number of Children Living (of Live Births during Period)	2,992	
Number of Children Dead (of Live Births during Period)	1,656	
Number Dying Under 1 Month	402	NEONATAL MORTALITY RATE: $\dfrac{402}{4,645} \times 1,000 = 86.5$ per 1,000 Live Births
Number Dying Under 1 Year	1,007	INFANT MORTALITY RATE: $\dfrac{1,007}{4,645} \times 1,000 = 216.8$ per 1,000 Live Births
Number Dying Over 1 Year	649	

[1] Based on data from 1,616 women who had had one or more pregnancies during the period.

was frequently the case, although no factual data on age-specific death rates were collected. (2) Undoubtedly there were some live births which escaped the mothers' memory.

The ratio of the number of abortions to the total number of pregnancies is much lower than might be expected, by comparison with data for the United States. It is conceded that a considerable number of abortions occurring to these rural women went unnoticed or were ignored.

The relatively low stillbirth ratio may represent a faulty memory on the part of the mother and may be tied in with the fact that there were slightly fewer multiple births than expected. In the case where one of twins was a live birth and the other was stillborn, the latter was liable to be ignored.

The neonatal and infant mortality rates were actually lower than expected on the basis of prior hearsay which had suggested that the infant mortality rate might range from 300 to 500 per 1,000 live births. Although the number of infant deaths was undoubtedly underreported, the degree of underreporting is difficult to estimate. There is reason to believe that infant mortality is higher in other parts of Iran, particularly in the South, although there are no supporting factual data. It should be emphasized here that the rates in this survey are indicative of the surveyed area only and do not apply necessarily to the country as a whole.

Causes of Deaths Among Infants. As mentioned previously, the data relating to the causes of death among infants were in a sense unsatisfactory, for in more than 50 per cent of the cases the exact cause was not specified. It is perhaps unreasonable to hope that accurate data in this regard could be obtained under the circumstances prevailing in the rural areas. The lack of medical care militated against both diagnosis and treatment and the causes of the majority of deaths had to be recorded in the mother's own words: blueness, choking, fever, etc.

About 3 per cent of the infant deaths were ascribed to tetanus, probably of the newborn. This figure seems low when one considers that 99 per cent of the deliveries took place in

Table 5. Relationship between number of pregnancies and woman exposure-years.

Total Years of Exposure[1]	14-23 No. of Woman Exposure-Years	14-23 No. of Pregnancies	14-23 Pregnancies per Woman Exposure-Year	24-33 No. of Woman Exposure-Years	24-33 No. of Pregnancies	24-33 Pregnancies per Woman Exposure-Year	34-43 No. of Woman Exposure-Years	34-43 No. of Pregnancies	34-43 Pregnancies per Woman Exposure-Year	44-55 No. of Woman Exposure-Years	44-55 No. of Pregnancies	44-55 Pregnancies per Woman Exposure-Year	TOTAL No. of Woman Exposure-Years	TOTAL No. of Pregnancies	TOTAL Pregnancies per Woman Exposure-Year	Total No. of Women in Survey
0	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	162
1	68	16	0.24	1	0	0.00	1	1	1.00	4	2	0.50	74	19	0.26	7
2	130	55	0.42	18	8	0.44	6	3	0.50	16	2	0.12	170	68	0.40	ε
3	282	108	0.38	21	11	0.52	24	14	0.58	51	12	0.24	378	145	0.38	12
4	284	123	0.43	36	23	0.64	12	6	0.50	32	2	0.06	364	154	0.42	ˁ
5	285	108	0.38	115	50	0.43	30	14	0.47	510	81	0.16	940	253	0.27	1ε
6	606	252	0.42	150	68	0.45	84	35	0.42	36	5	0.14	876	360	0.41	1ᵃ
7	266	115	0.43	287	129	0.45	70	24	0.34	105	22	0.21	728	290	0.40	1ᵉ
8	360	133	0.37	408	172	0.42	80	28	0.35	56	8	0.14	904	341	0.38	1
9	144	53	0.37	414	176	0.43	261	78	0.30	171	47	0.27	990	354	0.36	1
10				3,980	1,641	0.41	3,540	1,233	0.35	1,250	252	0.20	8,770	3,126	0.36	8ᵉ
TOTAL	2,425	963	0.40	5,430	2,278	0.42	4,108	1,436	0.35	2,231	433	0.19	14,194	5,110	0.36	2,0?

[1] Calculated to the nearest whole year.
N. B. The above rates represent a composite of the total experience of each of the women surveyed and should not be confused with intermediate duration-specific data.

the home and were attended by untrained village women who had no concept of cleanliness in obstetrical practice.

PREGNANCY DATA

In addition to the data regarding pregnancies, births, infant mortalities, etc., information was collected as to the number of years of the ten-year period during which each woman was actually married and living with her husband. The purpose was to arrive at a figure which would express the fecundity of the village women in terms more precise than the usual crude or age-specific fertility rates. This rate was intended to be a rough measure of the capacity of the rural women to conceive —a physiological rather than a demographic expression of fertility. The numerator was composed of pregnancies instead of live births. The denominator was in terms of the number of woman exposure-years, taking into consideration only those years during the ten-year span in which each woman was actually married and was at the same time between the ages of 14 and 45 inclusive. The latter was arbitrarily selected as the normal reproductive period. In accordance with these criteria the data were subdivided in order to compare the pregnancy experience of women in four different age groups. The tabulations are shown in Table 5. Of the 2,076 women entered in the records for possible inclusion in this aspect of the study, 162 were recorded as not having been exposed to pregnancy during the period. This left a total of 1,914 women who amassed 14,194 woman exposure-years. Of these women, 311 never recognizably conceived while the remaining 1,603 women provided 5,110 pregnancies. As shown in Table 5, this represents an average of 0.36 pregnancies per woman exposure-year. Expressed in other terms, this figure indicates that the average woman, if constantly exposed during her entire reproductive life, would have eleven pregnancies.

The table also shows a higher pregnancy rate among women who were in the 24–33 age group *at the time of the survey* than among the others. The lowest rate was found in the oldest age

group despite the fact that 40 per cent of the exposed women
in the group had had a full ten years of exposure during the
given period. Here it should be emphasized that women who
were not exposed at any time during that interval were ex-
cluded from the calculations.

There is probably a bias inherent in the methodology leading
to rates which run too low in the youngest age group and too
high in the oldest. These difficulties could be avoided in any
future study by obtaining data on the age of the women at
the time of each pregnancy as well as at the time of the survey.
With such information at hand, one could obtain not only more
exact rates for age-specific pregnancy but also an estimate of
the spacing of pregnancies in different age groups and for dif-
ferent periods of exposure.

Interestingly, except for the first year of exposure where the
numbers involved were too small to be significant, the *rate* of
pregnancies per exposure-year remained almost constant within
each separate age group, regardless of the number of years ex-
posed. The aggregate of all age groups did indicate a drop at
the fifth year, owing to the disproportionately large number
of married women in the 44–55 age group who probably stated
their age as 50 and were thus credited with five years of ex-
posure provided that they had been living constantly with their
husbands during the first half of the previous decade. Since the
pregnancy rates were lowest in this age group, the average was
heavily weighted. By substituting a calculated five-year "mov-
ing average" the distortion can be eliminated. It is clear that
there is need for caution in interpreting the stated age in an
older population of this type.

*Conversion of Data into Standard Measurements of Fer-
tility.* The problem arises as to how to compare these data
with fertility studies carried out in other parts of the world.
In the first place, the manner in which the original material
was recorded does not permit age-specific analysis in the strict
sense of the word, for the age groups pertained to women at
the time the survey was made, while the pregnancies covered

a span of the preceding ten years. For purposes of internal comparison, however, a rough measure of differential fertility at various stages in the reproductive life is afforded.

With the aid of a few broad assumptions it is possible to compare these data with other studies. If one may assume that the observed ratio of live births to pregnancies was constant

Table 6. Methodology and data used in computing the gross reproduction rate.

Age Group at Time of Survey	Observed Number of Pregnancies in the Ten-Year Period[1]	Calculated No. of Live Births per Year (2) × 0.903 ÷ 10²	Calculated No. of Female Births (3) × 0.492	No. of Females in the Population	Annual Births of Daughters per Woman (4) ÷ (5)	No. of Years in Age Group	Annual Births of Daughters per Woman, per Age Group (6) × (7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
14–23	963	86.96	42.61	930	0.04582	10	0.4582
24–33	2,278	205.70	100.79	617	0.16335	10	1.6335
34–43	1,436	129.67	63.54	459	0.13843	10	1.3843
44–55	433	39.10	19.16	461	0.04156	12	0.4987
Total	5,110			2,467			3.9747

Crude Birth Rate: $\dfrac{\text{Total live births}}{\text{Total population}} = \dfrac{4{,}645}{9{,}030} \times \dfrac{1}{10} \times 1{,}000 = 51.4$ (From Table 4)

Number of children 0–4 years per 1,000 women 15–44 inclusive $= \dfrac{1{,}546}{1{,}912} = 808.6$
(From Table 1)

General Fertility Rate: $\dfrac{\text{Total live births}}{\text{Females } 15\text{–}44} = \dfrac{4{,}645}{1{,}912} \times \dfrac{1}{10} \times 1{,}000 = 242.9$

Gross Reproduction Rate: Number of female children born per woman assuming span of reproductivity of 14–45 inclusive = 3.97

[1] Taken from Table 5. Since women with an undetermined number of years of exposure were omitted, the total does not agree with that in Table 4.

[2] Data used in calculating fertility rates:
Ratio of births to pregnancies over the 10-year period $= \dfrac{\text{Total live births}}{\text{Total pregnancies}} = \dfrac{4{,}645}{5{,}146} = 90.3$ per cent (From Table 4)
Sex Ratio (children under 1) $= \dfrac{\text{Females}}{\text{Total}} = \dfrac{187}{.382} = 0.490$ per cent (From Table 1)

throughout the reproductive period, regardless of age, one can
apply this ratio to the observed number of pregnancies and
calculate the probable number of live births occurring in each
age group. In this way a gross reproduction rate can be com-
puted as shown in Table 6. This was found to be 3.97.

There were insufficient data to calculate a net reproduction
rate.[2] The latter takes into account the age-specific mortality
of females after birth, which, in turn, can only be derived from
a life table. Since there is no life table for Iran, an attempt
was made to interpose survival data for females from another
country which might be considered similar to Iran in so far as
conditions affecting mortality are concerned. For this purpose
Egypt was chosen. Data for 1936–38 from Egypt[3] were applied
to the Iranian survey figures and an estimated net reproduc-
tion rate of 2.24 was derived. Arbitrarily this figure seemed
high and the method was tested by applying life table data,
also from Egypt (1927–1937), but from a different source.[4]
This resulted in a net reproduction rate of 1.72. Still another
net reproduction rate, namely 1.25, was obtained by using the
1951 age-specific death rates and calculated survival figures
for females in the Egyptian village Sindbis (total population,
4,232).[5]

It is obvious that the results varied widely depending on
which set of survival data was utilized. Each source has its own
claim to accuracy. For this reason it seems presumptuous to
select one and, by applying it to the survey data, draw con-

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[2] To paraphrase, the *Gross Reproduction Rate* is an estimate of the average
number of live female births produced per woman, assuming that she is alive dur-
ing her entire reproductive period. The *Net Reproduction Rate* is a refinement of
the *GRR,* which takes into account the fact that many females neither reach nor
live through the entire reproductive period, with the result that relatively fewer
live female births are produced. The appropriate calculations are based on age-
specific birth and mortality rates.

[3] Survivors at Specified Ages for Each Sex. United Nations Statistical Office
DEMOGRAPHIC YEARBOOK 1951. New York, 1951. Table 28, pp. 512–513.

[4] Kiser, Clyde V.: The Demographic Position of Egypt. The Milbank Memorial
Fund *Quarterly,* October, 1944, XXII, No. 4, pp. 383–408.

[5] Sindbis Health Center, Egypt. Annual Report for 1951 by Dr. J. M. Weir to
The Rockefeller Foundation. Unpublished data.

clusions as to the net fertility of the women in this particular rural area of Iran. It is preferable, under the circumstances, to postpone calculation of a net fertility rate until such time as accurate statistics on survival are available in Iran itself.

SUMMARY

1. Certain demographic data derived from a survey of 173 villages in a small rural area of Iran are discussed.

2. These data include an analysis of the population by age, sex, and marital status, as well as informants' reports on pregnancies, births, and infant deaths during the ten-year period prior to the survey.

3. Comparative data on both pregnancy and fertility rates are presented.

4. The findings are referable to the surveyed population during the period in question and not to Iran as a whole.