Prevalence of Infertility and Its impact on Marital Fertility, Egypt, 1993

By

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SECTION (1):- INTRODUCTION:

1.1. Justification.

Most of the previous demographic studies concentrated on its analysis on fertility, as one of the three major components of population dynamic. Few Egyptian studies that dealt with the subject of infertility although it's importance as a problem face couples everywhere in the world and it's responsibility about many of personal suffering and marriage separation. The main reason of this negligence may be attributable to the inaccurate estimation of the bulk of infertility problem in Egypt, since most of the previous infertility studies were hospital-based and represented a small sector rather than the total Egyptian population. The changes in the demographic pattern over the past 30 years in Egypt (the shifting from the first face to the end of the second face of the demographic transition) made the problem of infertility more urgent.

According to the estimation of World Health Organization *(WHO)*, there are about 8% of couples at the global level experience some forms of infertility problem during their

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reproductive lives. This percentage means that 50 to 80 million people have problems with fertility.

From the previous introduction, we can investigate the importance of infertility problem, especially in the recent era, and necessity of the denial studying of this phenomenon at the large scale of the population.

1.2. Objectives of the study

The larger aim of this study is a determination of the prevalence of infertility in Egypt and to identify the factors responsible for infertility among Egyptian infertile couples (males and females).

In view of the previous introduction, the following specific objectives are worth considered:

1- Determination to the prevalence of infertility, at the regional and national levels of Egypt.

2- Determination of the prevalence of infertility at the national level according to some selected marital parameters and husband and wife socio-economic variables.

3- A hypothetical modification of some marital fertility measures in view of excluding the proportion of primary and secondary infertile cases during the past 12 months from the proportion of currently married women.

1.3. Data Sources.

The main two sources of data in this study are:

1) ***1995 Community-based Study of the Prevalence of Infertility and its Etiological Factors in Egypt***, which was conducted by the Egyptian Fertility Care Society ***(EFCS)***. This survey based on large random cluster sample, 20000 Egyptian married couples. The sample distributed between seven governorates that chosen for conducting the study (Cairo, Giza, Qalioubia, Alexandria, Dakahlia, Minia and Assuit) and it's proportionate to the population size of these governorates.

All the voluntary participants of the study (wives) were, Egyptian women, under the age of 50, currently or previously married, residents in the selected localities, at least for 6 months.

Interviewed women in this survey were classified according to their infertility status into the following two categories:

- Primary infertility: The woman is married, never pregnant (not currently or previously pregnant) either in this marriage or from any previous marriage(s); she has been at risk of pregnancy for successive 12 months or more (excluding any periods of contraceptive use and/or husband travel).

- Secondary infertility: The woman is married, not currently pregnant, but had been pregnant at least once before and has been exposed to or at risk of pregnancy for successive 12 months or more (excluding any periods of lactation amenorrhea, husband's travel and use of contraception).

2) ***1993 Egypt Use Effectiveness of Contraceptives Survey (1993, EUECS),*** Which was conducted by Cairo Demographic Center ***(CDC)*** in collaboration with United Nations Population Fund ***(UNFPA).***

The ***EUECS*** sample was designed to provide separate estimates of all major demographic parameters at the national level and for the main five regions of Egypt.

The sample design was a self-weighted, multi-stage, stratified, cluster sample. The ultimate target population was ever-married women under the age of 50.

SECTION (2):- THE DIFFERENTIALS IN THE PREVALENCE OF INFERTILITY

In this section a try made to explain the disparities in the level of infertility among the studied population, which classified according to their residency (Urban / Rural) and their current locality (Urban Governorates ***UGE,*** Urban Lower Egypt ***ULE,*** Urban Upper Egypt ***UUE,*** Rural Lower Egypt ***RLE*** and Rural Upper Egypt ***RUE***) as shown in table (1).

2.1. Residency Differentials in the prevalence of infertility.

The previously mentioned table shown that:

- At the national level, there are about 12% of the interviewed couples were classified, according to the study classification as infertile couples. The percentage of secondary infertile among them was about 64%, while 36% of the infertile cases were primary infertile.

- Prevalence of infertility was negatively related to the level of area development. It was higher in rural areas of Egypt by about 2.5 percentage points than urban areas (13.8% and 11.3% respectively). This difference decreased to about 1.7 percentage points in the case of primary infertility and to less than one percentage point in the case of secondary infertility.

- At the regional level, the highest prevalence of infertility among the interviewed couples was in ***RUE*** (18.7%), while the least prevalence was in ***ULE*** (8.5%). The highest prevalence of primary infertility was in ***ULE*** (73% of total interviewed

infertile couples), while the least prevalence was in ***UUE*** (26% of total interviewed infertile couples).

Table (1)
Percentage Distribution of the Prevalence of Infertility Categories among the Studied Population, According to Place and Region of Residence.

Variables	Infertility			Total Cases	
	Primary	Secondary	Total	No.	%
Places of Residence					
Urban	3.8	7.5	11.3	13404	67.0
Rural	5.5	8.3	13.8	6598	33.0
Regions of Residence					
Urban Governorates (UG)	3.5	7.6	11.1	10857	54.3
Urban Lower Egypt (UL)	6.2	2.3	8.5	11981	6.0
Urban Upper Egypt (UU)	3.7	10.7	14.4		6.7
Rural Lower Egypt (RL)	5.3	4.9	10.2	1349	19.1
Rural Upper Egypt (RU)	5.8	12.9	18.7	3821 2777	13.9
Total	4.3	7.7	12.0	20002	100.0

Source: *(1995) Community-based Study of the Prevalence of Infertility in Egypt, Egyptian Fertility Care Society (EFCS).*

SECTION (3): PREVALENCE OF INFERTILITY BY THE SOCIO-ECONOMIC VARIABLES.

3.1. Infertility and wife's age

Table (2) represents the percentage distribution of various infertility categories according to wife's age and some selected marital parameters. It shows that:

- The highest prevalence of the primary infertility was among the highly reproductive wives (those aged 20-35 years). They represent about 69.5% of total cases of primary infertile among the reproductive wives.

- On contrary, the highest prevalence of the secondary infertility was among wives who close to the end of their reproductive life (those aged 35-49 years). They represent about 66.8% of total cases of secondary infertile among the reproductive wives.

- From the previous two points, it's clear that mean age of primary infertile wife is lower than secondary infertile wife (28.9 and 37.5 years respectively).

3.2. Infertility and Duration of Marriage

From the above mentioned table, it's observed that:-

- The highest concentration of the primary infertile cases was among wives in the beginning of marriage life (duration of marriage less than 5 years). They represent about 40.3% of total cases of primary infertility.

Table (2)
Percentage Distribution of Various Infertility Categories According to Wife's Age and Some Selected Marital Parameters

Parameter	*Primary Infertility*	*Secondary Infertility*
Wife's Age Groups:		
<20	*6.5*	*1.0*
20-	*24.8*	*7.4*
25-	*25.5*	*11.4*
30-	*19.2*	*13.4*
35-	*14.2*	*17.0*
40-	*7.0*	*18.0*
45-49	*2.8*	*31.8*
Mean Age of the Infertile Woman.	*28.9 (7.9)*	*37.5 (8.6)*
Duration of Marriage:		
Up to 1 year	*0.0*	*0.0*
1-	*40.3*	*7.8*
5-	*25.4*	*14.0*
10-	*18.3*	*14.3*
15+	*16.0*	*63.9*
Mean Duration of Marriage of the Infertile Woman.	*7.9 (6.7)*	*18.2 (9.1)*
Women Previously Married	*6.7*	*3.5*
Husband Previously Married	*15.1*	*6.7*

Source: *(1995) Community-based Study of the Prevalence of Infertility in Egypt, Egyptian Fertility Care Society (EFCS).*

- On contrary, the highest prevalence of secondary infertile was among the oldest wives in marriage life (duration of marriage 15 years and above). They represent about 63.9% of total cases of secondary infertility.

3.3. Infertility and Education

Table (3) represents the percentage distribution of infertility cases according to some selected husband and wife socio-economic variables. This table shows that:-

- The highest prevalence of infertility was among the illiterate couples. It was higher among the illiterate wives than husbands and in case of secondary infertility than primary.

- The highest concentration of the primary infertile cases was among wives in the beginning of marriage life (duration of marriage less than 5 years). They represent about 40.3% of total cases of primary infertility.

- Prevalence of infertility (primary and secondary) was higher among the educated husbands than that among educated wives.

3.4. Infertility and work experience

The above-mentioned table shows that:

- The majority of infertile cases concentrated among working husbands for cash (97.1% in case of primary infertility and 97.8% in case of secondary infertility).

- The highest prevalence of infertility (primary and secondary) was among husbands who expose in your jobs to chemicals and heat (14.2%, 10.2% in case of primary infertility and 16.9%, 10.9% in case of secondary infertility).

Table (3)
Percentage Distribution of Infertility Cases According to Selected Husband and Wife Socio-economic Variables.

Variables	Husband		Wife	
	Primary Infertility	Secondary Infertility	Primary Infertility	Secondary Infertility
Education:				
No Education	49.9	56.7	64.8	70.8
< University	42.1	34.9	32.3	24.5
University +	8.0	8.4	2.9	4.7
Working for Cash.	97.1	97.8	14.6	11.4
Job Exposure:				
Radiation	0.8	0.3	0.3	0.0
Chemicals	14.2	16.9	0.4	0.0
Metals	3.1	5.2	0.0	0.0
Heat	10.2	10.9	0.0	0.0
Hormones	0.1	0.3	0.0	0.0
Others	0.3	0.5	0.0	0.0
No. Of Cases.	768	367	768	367

Source: *(1995) Community-based Study of the Prevalence of Infertility In Egypt, Egyptian Fertility Care Society (EFCS).*

SECTION (4):- MODIFIED MARITAL FERTILITY RATES.

In this section a comparison will be made at the national level between some actual marital fertility measures (Age Specific Marital Fertility Rates ***ASMFRs*** and Total Marital Fertility Rate ***TMFR***), which reflect the current situation of marital fertility, with the corresponding assuming measures, after excluded the proportion of currently infertile wives from the proportion of currently married women.

The Exclusion of the proportion of infertile wives from the proportion of currently married women is based on the idea that those women didn't have any fertility promoting effect (i.e. their effect on fertility approximately equal to the effect of non-marriage women). If we accept this idea, the previous exclusion seems to be logical.

This exclusion will be done in two steps. In the first step, the proportion of primary infertile wives will be excluded. In the second step, the proportion of both primary and secondary infertile wives during the previous 12 months before the survey date will be excluded.

Regarding the validity of joint between the data of the main two date sources in this study, we think that the combined and comparison process may be done under a reasonable degree of confidence, since the reference date of the main two data sources were the last quarter of 1993.

Table (4) represents the fertility-promoting effect of excluding the proportion of infertile wives from the proportion of currently married women.

It shows that:

- Proportion of currently married women decreased by about 4.3 percentage points in case of excluding the proportion of primary infertile wives.

Table (4)
Fertility-promoting Effect of Excluding the Proportion of Infertile Wives from the Proportion of Currently Married Women

Age Groups	Proportion of Currently Married Women (PCMW)			Marital Fertility Measures (ASMFRs & TMFR)		
	PCMW	PCMW(1)	PCMW(2)	ASMFRs	ASMFRs(1)	ASMFRs(2)
15-	0.122	0.109	0.106	0.265	0.300	0.322
20-	0.519	0.458	0.426	0.353	0.400	0.430
25-	0.802	0.729	0.670	0.271	0.298	0.324
30-	0.888	0.827	0.753	0.157	0.168	0.185
35-	0.888	0.837	0.729	0.101	0.108	0.123
40-	0.834	0.805	0.672	0.035	0.036	0.043
45-49	0.780	0.766.	0.484	0.008	0.008	0.012
	0.626	0.583	0.505	5.95	6.59	7.20

Sources:- ***A)-*** *(1995) Community-based Study of the Prevalence of Infertility In Egypt, Egyptian Fertility Care Society (EFCS).*
B)- *(1995) Egypt use effectiveness of contraceptives survey, Cairo demographic center, P.69.*

(1): *After Excluding the Proportion of Primary Infertile Wives from the Proportion of Currently Married Women.*

(2): *After Excluding Both, the Proportions of Primary and Secondary Infertile Wives from the Proportion of Currently Married Women.*

- This reduction represents about 6.9% of its level before the exclusion. The corresponding reduction was about 12.1 percentage points (represents about 19.3% of the proportion of currently married women) when we excluded both the proportions of primary and secondary infertile wives. The highest reduction in the proportion of currently married women after excluding the proportion of primary infertile wives was among women less than age 30, as a result of concentration most of primary infertile cases among them.

- Excluding the proportion of primary infertile wives from the proportion of currently married women had a fertility-promoting effect. This effect represents in increasing ***TMFR*** by about 0.6 birth per married women, represents about 10.8% of its level before this exclusion. ***TMFR*** achieved more increase when we excluded both the proportions of primary and secondary infertile wives. this increase was about 1.25 births per married women, represents about 21% of its level before this exclusion.

- The highest increase in the ASMFRs was among women of the first three age groups and last age group of reproductive span. The increases of the first three age groups must be occurred as a result of concentration most of primary infertile cases among them, while the increases of the last group must be occurred as a result of concentration most of secondary infertile cases among them.