
Consanguinity and genetic diseases in Egypt

Thesis

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List of Abbreviations

Cons.	consanguinnity
AR	Autosomal recessive
AD	Autosomal dominant
Chrom.A	Chromosomal abnormality
R.R	Remote relatives
CAPMAS	Central Agency for Mobilization and Statistics
CIA U.S	Central intelligent agency in united states
BOH	Bad obstetric history
DS	Down syndrome
MR	Mental retardation
MCA	Multiple congenital anomalies
SB	Still birth
Ab.	abortion
E.B	Epidermolysis bullosa
MPS	mucopolysaccaridosis
PKU	phenylketonuria
N.S deafness	Neurosensory deafness
N.D.D	Neurodegenerative disease
CP	Cerebral palsy
Cong.	congenital

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Introduction

Consanguinity is defined as the marriage or unions between individuals of the same blood. It is widely practiced in countries of Asia and Africa especially in societies where Islam prevails but its prevalence is low in Western countries. High rates of these marriages are reported in most of the Arab countries. **(Bittles et al, 2001).**

Congenital and genetically determined disorders are very common in the Eastern Mediterranean region. The prevailing high rate of consanguineous marriages is considered to be the root cause of these problems. **(Temtamy et al, 1998).**

Studies of parental consanguinity in the Egyptian population showed a frequency ranging from 20 to 42%. Parental consanguinity rates in groups of Egyptian patients with various birth defects were high suggesting a high rate of autosomal recessive disorders related to other patterns of inheritance.**(Ashour et al, 2003).**

Consanguinity increases risk of recessive gene inheritance expressing genetic diseases. **(Al-Ghazali et al ,1995).**



Consanguinity was identified as a risk factor for several morbid conditions including congenital abnormalities and other birth defects as ; hypertension, chronic renal failure, and neonatal diabetes mellitus. **(Al-Ghazali et al ,1995).**

A significant frequency has been reported between consanguinity and genetic disorders, congenital heart disease, neurological malformations, chromosomal disorders and MR. **(Verma et al, 1993)**



Aim of the Work

To detect the prevalence of consanguineous marriage in Egypt .

Also to detect the effect of consanguineous marriage on the rate of different types of genetic diseases and child morbidity and mortality.



Chapter 1: demographic features of Egypt

Major demographic features of Egypt:



Figure (1)

Egypt is located in Northern Africa, bordering the Mediterranean Sea, between Libya and the Gaza Strip, and the Red Sea north of Sudan, and includes the Asian Sinai Peninsula

27 00 N, 30 00 E, the total area is 1,001,450 sq km the land occupies 995,450 sq km, while water occupies 6,000 sq km, this area is slightly more than three times the size of New Mexico. The total land boundaries is 2,665 km, Gaza Strip 11 km, Israel 266 km, Libya 1,115 km, Sudan 1,273 km.

The climate in Egypt is desert; hot, dry summers with moderate winters. Egypt depends on petroleum, natural gas, iron ore, phosphates, manganese, limestone, gypsum, talc, asbestos, lead, zinc as natural resources.

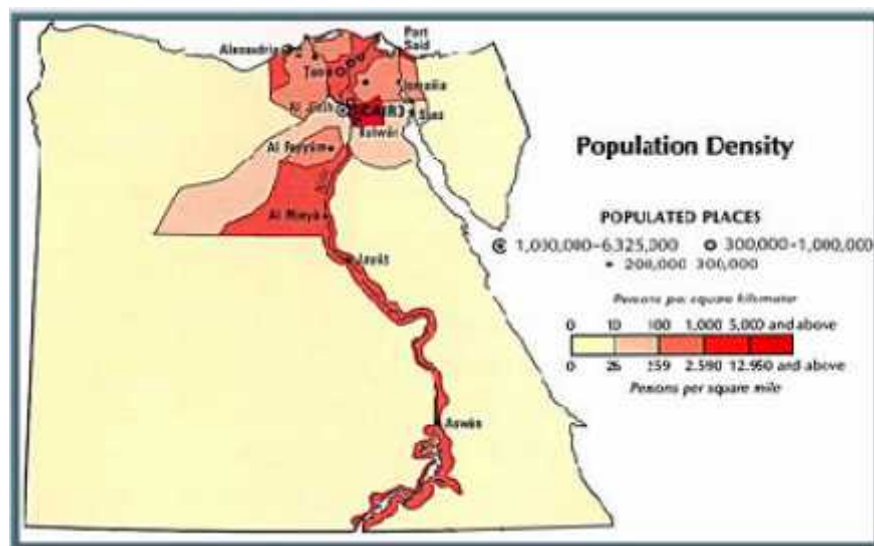
The land is divided into arable land 2.92%, permanent crops which is 0.5% and others which represents 96.58% (2005), while the irrigated land is 34,220 sq km (2003), but the total renewable water resources is 86.8 cu km (1997) depending on fresh water withdrawal about 68.3 cu km/year. (**World Factbook 1996, U.S. Central Intelligence Agency**).

Population census has been known in Egypt since ancient times. The first census was carried out in 1882 and the total number of population at that time was 6.7 million. The government takes a census of the Egyptian population every ten years. The census conducted in 1996 put the number of population at 59.3 million. The 2006 census is the thirteenth to

be held by the Central Agency for Mobilization and Statistics (CAPMAS). According to the 2006 census figures, the population, including those living abroad, is estimated to have reached 76.5 million at a growth rate of 37% over the 1996 figure. (CAPMAS 2006)

(World Factbook 1996, U.S. Central Intelligence Agency)

figure (2)



Demographic map

(World Factbook 1996, U.S. Central Intelligence Agency) (1986) Rand McNally International Atlas 1994.

General Total	Total of Population			
	Urban/rural	Males	Females	Total
	Urban areas	15,793,758	15,155,931	30,949,689
	Rural areas	21,307,095	20,322,246	41,629,341
	Total	37,100,855	35,478,177	72,579,030

Table(1)

Population in urban areas increased by 40.22 percent and is now standing at 30,949,689; population in rural areas rose by 64.22 percent and is put at 41,629,341. Cairo is the governorate with the largest reported population growth percentage (10.7%); followed by Giza (8.64%) and Sharqiya (7.36%). Meanwhile, the governorates with the lowest population increase rates are Southern Sinai, the New Valley and the Red Sea. (CAPMAS , 2006) (World Factbook 1996, U.S. Central Intelligence Agency)

The following figures show population distribution in Egypt according to gender , age , education , work status , and nature of employment.