EPIDEMIOLOGICAL STUDY OF TYPE II NON-INSULIN-DEPENDANT DIABETES MELLITUS AT FARWANIA DISTRICT, KUWAIT

THESIS

Submitted in Partial Fulfilment for The Degree of Master in "EPIDEMIOLGY"

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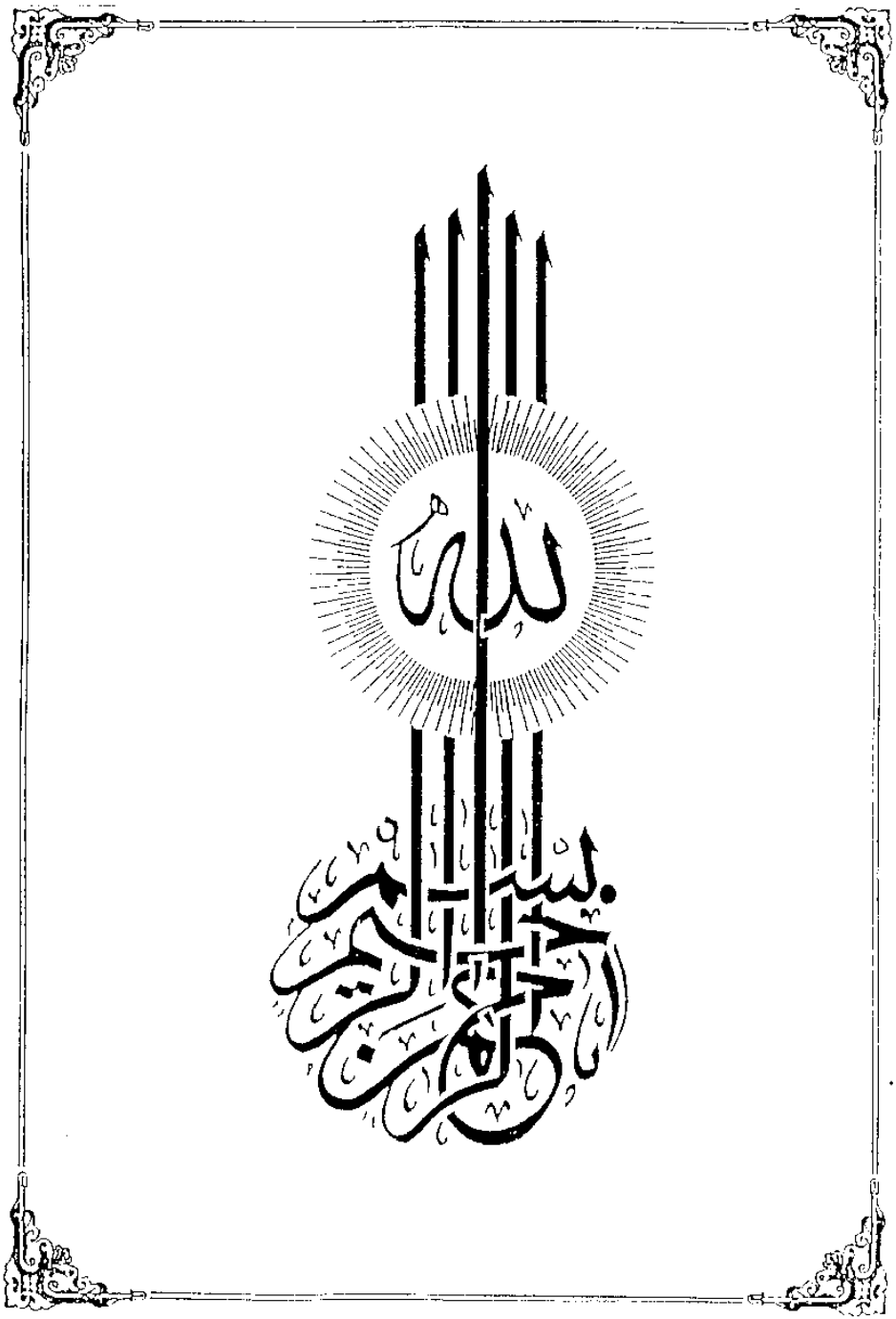
بسم الله الرحمن الرحيم

سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ .

صدق الله العظيم



TO MY PARENT

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Introduction

INTRODUCTION

The state of Kuwait occupies the north-western corner of the Arabian Gulf, which forms its eastern boundary. In the south and west it is bounded by the Kingdom of Saudi Arabia, and in the north and the west by the Republic of Iraq (Fig. 1). The total area of the state of Kuwait is 17,818 square kilometers or approximately 7',000 square miles.

Demographic Characteristics:

The total population of Kuwait according to the national census of 1980 and 1985 was 1.37 million in 1980, and increaed to 1.69 million in 1985 (Table 1).

Fig.(1) Map of Kuwait

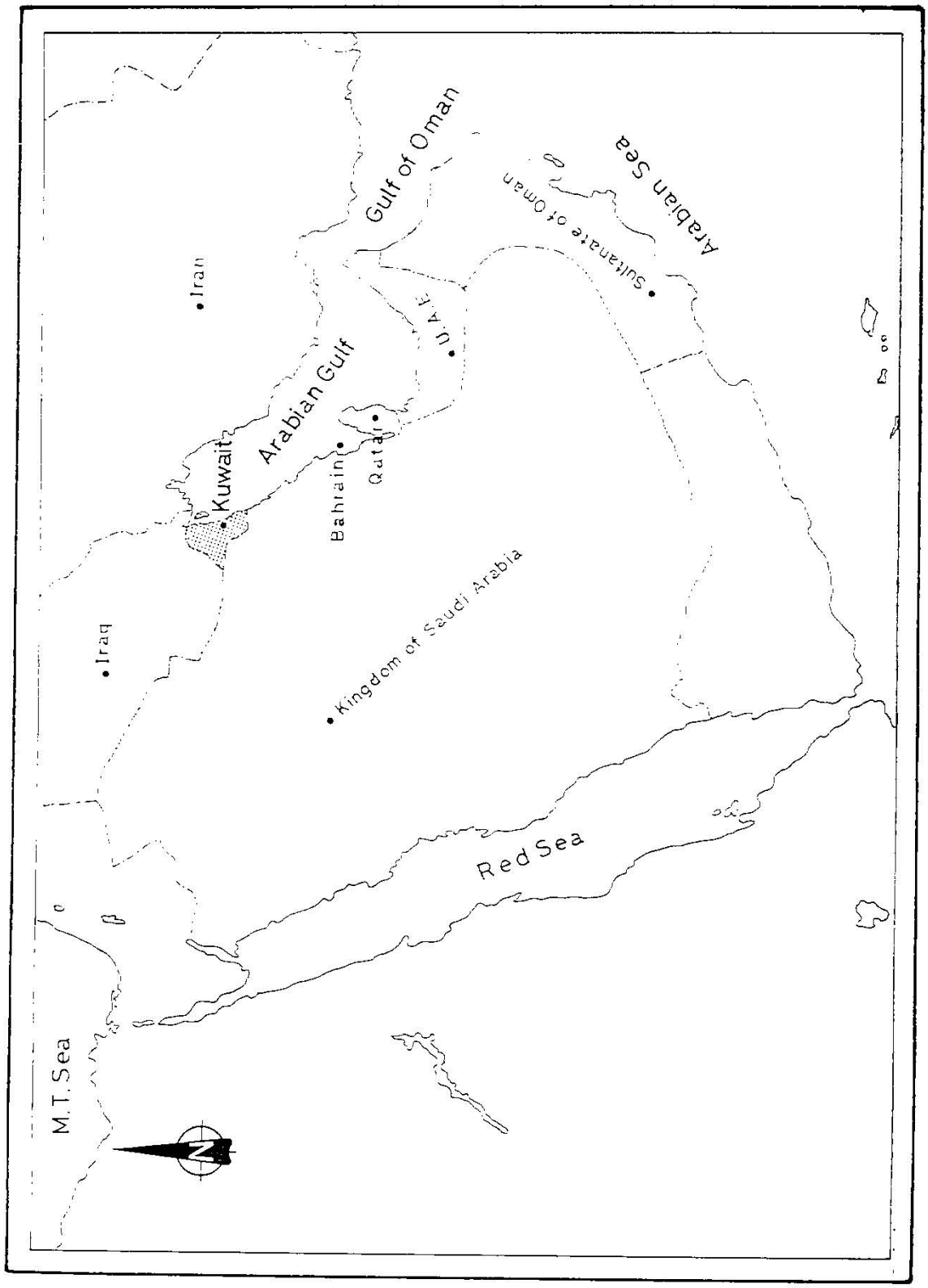


Table (1): Number and percentage of Kuwaitis and non-Kuwaitis population in Kuwait according to censuses of 1980, 1985.

Population	Number		Total	Percentage		Total
	Kuwaiti	Non-Kuwaiti		Kuwaiti	Non-Kuwaiti	
1980 (census)	365,613	792.339	1,357,952	41.7	58.3	100.0
1985(census)	681,288	1,016,013	1,697,301	40.1	59.9	100.0
Males, 1985	338,796	626,501	965,297	35.1	64.9	100.0
Females,1985	342,492	389,512	732,004	46.8	53.2	100.0
Sex ratio 1985*	0.99	1,61	1.31	-	-	-

* Males per 100 females.

Source : Planning Department, Ministry of Public Health, Kuwait.

The sex ratio of Kuwaitis was 0.99 while that of non-Kuwaitis was 1.6 in 1985. A major reason for the very high sex ratio of the non-Kuwaiti population is the large percentage of expatriates who are mostly males, Fig. 2 gives the population by nationality for the year 1985.

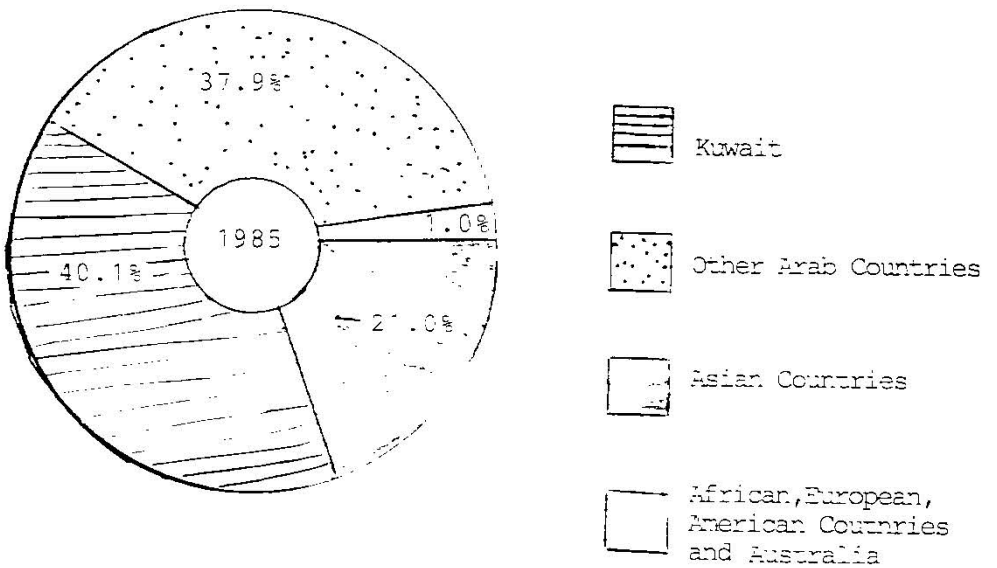
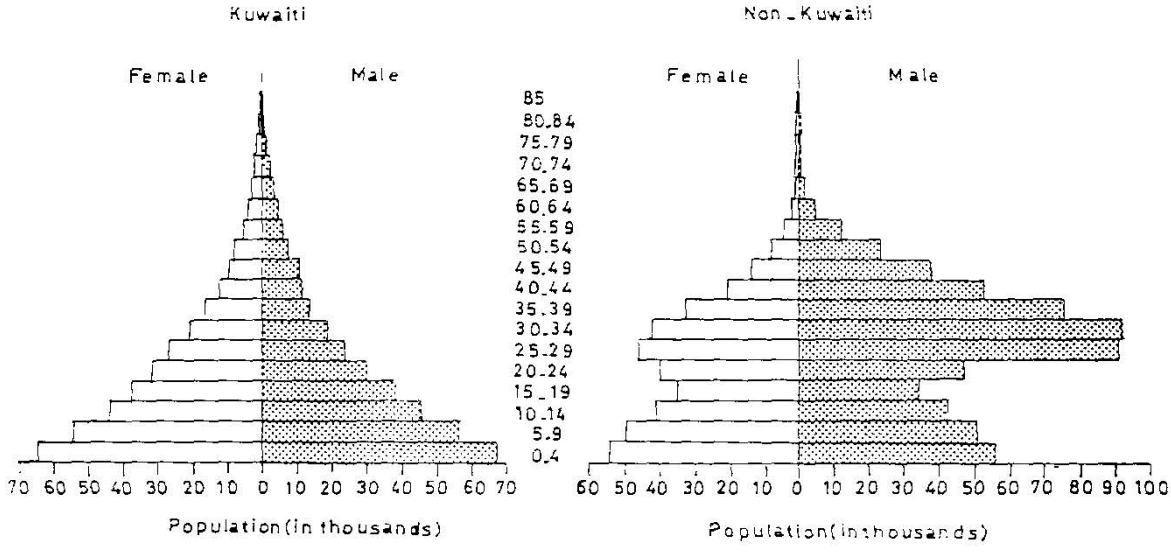


Fig. (2): Kuwait population by nationality (1985 Census)
Source: Naim et al., 1986.

The age-sex population pyramid for Kuwaitis and Non-Kuwaitis (1985 census) is shown in Fig. 3

Figure (3):

Population pyramids for Kuwaitis and Non_Kuwaitis, 1985



Source: Ministry of Planning, Kuwait.

The essentially triangular, broad-based pattern of the Kuwaiti population pyramid indicates that it is expanding by natural increase, life expectancy is higher, while the non-Kuwaiti population pyramid is a quite exceptional form. Irregularities in the shape of non-Kuwaiti population pyramid including the bulge for male ages 20-44 years old mirror the increasing labour manpower in the middle age (Ministry of public health, Kuwait, 1985).

The age structure of the Kuwaiti segment of the population is typical of a young, developing country, as shown by the 1985 census data in the following table (Table 2). In 1985, about 52% of the Kuwaiti population was in the age groups 0-14 and 60 and over, which are usually defined as dependent. The youthful age structure of the Kuwaiti population is one of the major reasons for a relatively low labour force participation rate among kuwaitis. Among the non-Kuwaiti, about 70% of the population was aged 15-59, reflecting the significance of adult migration to Kuwait for work. (Naim et al., 1986).

Table (2): The 1985 Kuwait population by age and nationality.

Age(years)	Kuwaiti		Non-Kuwaiti	
	Frequency	%	Frequency	%
15	330,945	48.6	294,140	29.0
15-59	326,931	48.0	709,258	69.8
60 +	23,412	3.4	12,615	1.2
Total	681,288	100.0	1,016,013	100.0

Source: Planning Department, Ministry of Public Health Kuwait.

For many years, the province of epidemiology was generally considered to be restricted to the infectious diseases. This was an understandable focus, since the major scourges of humans in the past were epidemics of communicable disease. Only after the major infectious diseases had come under some satisfactory control did investigation shift toward the chronic diseases (Mausner, 1985). Improvement in the standard of living and control of the infectious diseases have produced marked changes in the mortality and morbidity

patterns all over the world. The increase in the frequency of chronic diseases is attributed mainly to increased life expectation of the population (Lilienfeld, 1980).

Life expectancy in many developing countries has more than doubled in the last 30 years, but with this has come a greatly increases prevalence of chronic non-infectious diseases typical of an aging population and of more afluent societies. In countries undergoing rapid development, epidemiological studies are needed to indicate first in what way and with what speed the patterns of disease are changing and, second, the resultant size and nature of the demands which will be on the health care system. Urbanization and westernization of large numbers of people, such as among the American Indians or among certain Pacific Islanders, has been associated with a dramatic increase in recognized cases of diabetes (Larry et al., 1979).

The theory of the epidemiologic transition gives us some indications of the future changes in disease patterns in the Arab World. The recession of epidemics and endemic diseases is expected to continue in the