

THE RISE IN LIFE EXPECTANCY IN THE MEDITERRANEAN REGION

SAMIR FARID

Introduction

This paper reviews recent levels and trends in mortality conditions in the Mediterranean region. Life expectancy at birth is the most common index of mortality conditions and estimates of it are available for all the countries considered. The life expectancy at birth, which is not influenced by a population's age distribution, measures the expected number of years a new-born male or female would live if he or she were subject at each age to the male or female age-specific death rates recorded in some specified period. Data on mortality conditions for this analysis are drawn from the United Nations (2005) World Population Prospects: The 2004 Revision.

The development of this paper is basically in four sections; the first section reviews levels and trends in life expectancy at birth in 34 countries in the Mediterranean region, while the remaining sections are concerned with a more detailed analysis of the recent rise in life expectancy at birth, sex differentials in life expectancy, association between gross national income and levels of expectation of life at birth, child mortality and adult mortality, in 17 Arab countries in the Middle East and North Africa.

1. Levels and Trends in Life Expectancy

Table 1 depicts the spectacular increases in life expectancy at birth that have occurred in the Euro-Mediterranean region in the past 50 years or so. The overall picture is one of sustained increases in survivorship in virtually every country between 1950-1955 and 2000-2005. Among countries on the northern shores of the Mediterranean, Italy leads with a life expectancy at birth of 80.0 years in 2000-2005, followed closely by five countries with a life expectancy at birth higher than 78 years. In the Balkan region, life expectancy ranges from 71 to 76 years in 7 countries, while in Turkey life expectancy decreases to 68.6 years. In the 19 countries on the southern shores of the Mediterranean, life expectancy at birth is above 75 years in 3 countries, between 70 and 74 years in 12 countries, and around 69.5 years in 2 countries. At the other extreme, two countries show the lowest life expectancy in the region, Iraq (59 years) and Yemen (60 years). Detailed information reveal a picture of sustained

increases in survivorship in virtually every country south of the Mediterranean over the recent past. These substantial improvements in survivorship have been triggered by the increased use of antibiotics, insecticides, vaccinations, and also by the internationally sponsored disease control and sanitation programmes. As may be seen from Table 1, in all countries considered, life expectancy for females exceeds that for males. The average size of the female advantage in life expectancy is smaller in the Arab region relative to the countries in southern Europe. This is due at least in part to higher levels of maternal mortality in several Arab countries. It should be noted, however, that the widening of the gender gap in life expectancy at birth is not necessarily a concomitant consequence of mortality decline. In fact, there are no precise explanations of the gender gap in life expectancy, but the gap has been described as "a geo-cultural phenomenon", associated with a complex interplay of biological, social, and behavioural conditions (United Nations, 1988). The differences in life expectancy between the countries studied reflect major differences in health-care systems and socio-economic situations, particularly human and natural resources available for development and the effective management of such resources.

The dynamics that cause mortality rates to drop also reflect changes in the patterns of health and disease (Omran, 1971, 1983). The process of development results in a shift in disease patterns. As communicable diseases decline due to better living conditions and health services, more people survive to the older ages in which the chances of developing degenerative diseases are higher. This is further augmented by contemporary lifestyles that include smoking, higher-fat diet, more sedentary urban living, and more stress. Accordingly, the leading causes of deaths change from communicable diseases and malnutrition— which exact their heaviest toll on the young, to degenerative diseases and man-made causes (such as accidents, occupational hazards, and environmental pollution), which are more likely to afflict adults and the growing populations of older people (Horiuchi, 1999; Santow, 1999; United Nations, 2000). In the Arab region, Iran, and several of the Balkan countries, health and social systems are being challenged to respond to communicable diseases as well as degenerative diseases. The fact that development efforts have spread unevenly within each of these countries has led to a situation in which both old and new disease patterns currently overlap.

Table 1. Life expectancy at birth (LEB), by sex, in 34 countries in the Mediterranean region, 1950-1955 and 2000-2005

Country	Life expectancy at birth (LEB) (years)						Increase in LEBs between 1950-55 and 2000-2005		
	1950-1955			2000-2005					
	Both			Both			Both		
	Males	Females	sexes	Males	Females	sexes	Males	Females	sexes
Algeria	42.1	44.2	43.1	69.7	72.2	71.0	27.6	28.0	27.9
Bahrain	49.6	52.5	50.9	72.9	75.8	74.2	23.3	23.3	23.3
Egypt	41.2	43.6	42.4	67.5	71.8	69.6	26.3	28.2	27.2
Iran	44.9	44.9	44.9	68.8	71.7	70.2	23.9	26.8	25.3
Iraq	44.5	46.3	45.3	57.3	60.4	58.8	12.8	14.1	13.5
Isreal	64.4	66.4	65.4	77.5	81.6	79.6	13.1	15.2	14.2
Jordan	42.2	44.3	43.2	69.8	72.8	71.2	27.6	28.5	28.0
Kuwait	54.1	57.5	55.6	75.1	79.4	76.8	21.0	21.9	21.2
Lebanon	54.3	57.7	55.9	69.7	74.0	71.9	15.4	16.3	16.0
Libyan	41.9	43.9	42.7	71.4	76.1	73.4	28.5	32.2	30.7
Morocco	41.9	43.9	42.9	67.4	71.7	69.5	25.5	27.8	26.6
O. Palestine	42.2	44.3	43.2	70.8	73.9	72.4	28.6	29.6	29.2
Oman	36.9	38.7	37.6	72.7	75.6	74.0	35.8	36.9	36.4
Qatar	46.7	49.3	48.0	71.1	75.9	72.7	24.4	26.6	24.7
Saudi Arabia	39.1	40.7	39.9	69.9	73.8	71.6	30.8	33.1	31.7
Syrian	44.8	47.2	45.9	71.4	74.9	73.2	26.6	27.7	27.3
Tunisia	44.1	45.1	44.6	71.1	75.3	73.1	27.0	30.2	28.5
United Arab Emirates	46.7	49.3	48.0	76.3	80.6	77.9	29.6	30.9	29.9
Yemen	32.4	32.7	32.5	59.1	61.7	60.3	26.7	29.0	27.8
Albania	54.4	56.1	55.2	70.9	76.7	73.7	16.5	20.6	18.5
Bosnia and Herzegovina	52.6	54.8	53.8	71.3	76.7	74.1	18.7	21.9	20.3
Bulgaria	62.2	66.1	64.1	68.8	75.6	72.1	6.6	9.5	8.0
Croatia	59.0	63.2	61.2	71.3	78.4	74.9	12.3	15.2	13.7
Cyprus	65.1	69.0	67.0	76.0	81.0	78.5	10.9	12.0	11.5
France	63.7	69.5	66.5	75.8	83.0	79.4	12.1	13.5	12.9
Greece	64.3	67.5	65.9	75.6	80.8	78.2	11.3	13.3	12.3
Italy	64.3	67.8	66.0	76.8	83.0	80.0	12.5	15.2	14.0
Malta	64.2	67.7	65.9	75.8	80.7	78.3	11.6	13.0	12.4
Romania	59.4	62.8	61.1	67.7	75.0	71.3	8.3	12.2	10.2
Serbia and Montenegro	57.1	58.8	58.0	70.9	75.6	73.2	13.8	16.8	15.2
Slovenia	63.0	68.1	65.6	72.6	79.9	76.3	9.6	11.8	10.7
Spain	61.6	66.3	63.9	75.8	83.1	79.4	14.2	16.8	15.5
TFYR Macedonia	55.0	55.0	55.0	71.2	76.2	73.7	16.2	21.2	18.7
Turkey	42.0	45.2	43.6	66.3	70.9	68.6	24.3	25.7	25.0
Arab region -17 countries	43.8	45.9	44.8	69.6	73.3	71.3	25.8	27.4	26.5
Developing countries	40.0	41.6	40.9	61.2	64.6	62.8	21.2	23.0	21.9
Developed countries	63.5	68.8	66.2	70.7	78.5	74.6	7.2	9.7	8.4
World	45.0	47.8	46.3	62.5	67.0	64.7	17.5	19.2	18.4

Source: United Nations (2005). World Population Prospects: The 2004 Revision, Database Online, Population Division, New York

2. The Rise in Life Expectancy in the Arab Region

The remainder of this paper will be concerned with an analysis of recent trends in life expectancy at birth in 17 Arab countries in Western Asia and Northern Africa. Over the past 50 years or so, the Arab countries of West Asia and North Africa have witnessed unprecedented declines in mortality— a phenomenon that has resulted in a remarkable increase in their population size. Under conditions of moderate to high fertility, the marked reduction in mortality led to unusually high growth rates and hence to rapid increases in population size.

In terms of demographic and development indicators, the Arab region is characterized by sharp contrasts. It contains countries with relatively large populations as well as countries with very small populations. Some of the countries are highly urbanized, some are virtually city states, while in others less than 50 percent reside in urban areas. Literacy rates of adults, particularly women, vary within a wide range. Total fertility rates range from 2.0 births per woman in Tunisia to 7 births per woman in Yemen. In 2002, levels of real per capita gross national income were well in excess of US\$ 10,000 in 6 countries but below US\$ 4,000 in 5 countries.

These variations in socio-economic and demographic characteristics are the product of historical, social, economic and political developments. The diverse political structures and philosophies in the Arab countries under which recent developmental efforts have been moulded, facilitate in some instances, and slow down in other, adaptation to changing lifestyles, development and effective management of human and natural resources, and adoption and effective utilization of innovative technologies, including those affecting, directly or indirectly, family formation and health.

Between 1950-1955 and 2000-2005, life expectancy in the Arab region increased from 43.8 to 69.6 years for males and from 45.9 to 73.3 years for females. The greater gains for women widened the male-female gap in life expectancy from 2.2 to 3.7 years. For both sexes combined, life expectancy in the Arab region increased from 44.8 years in 1950-55 to 71.3 years in 2000-2005, a gain of 26.5 years, or 59 percent (Farid, 2003).

Furthermore, in 2000-2005, the projected level of the life expectancy in the Arab region is 6.6 years higher than the world's average, and 8.5 years higher than the level shown for the less developed regions. The figures in Table 1 also indicate that the mortality differentials between the Arab region and the more developed regions narrowed, so that by 2000-2005 the projected difference in life expectancy between the two groups amounts to 3.3 years instead of the 21.4 year difference that existed in 1950-1955. It is worth pointing out, however, that the

projected level of life expectancy at birth in the Arab region in 2000-2005 is almost identical to the level of life expectancy that prevailed in the more developed regions in the mid-1970s.

The figures in Table 1 indicate that not only has the Arab region's life expectancy increased during the period 1950-2005, but almost all the countries in the region have also recorded major gains in life expectancy. The most rapid decline in mortality during the period 1950-2005 was exhibited by Oman, with a 97 percent increase in life expectancy, or 36 years. It should be noted however that the initial level of life expectancy in Oman was so low— only 37.6 years.

The Arab Gulf states form a distinct pattern of transition; they have made major strides in reducing mortality in recent decades. Revenues from oil have bought the populations of these countries a high standard of living and high-quality medical care, which emphasizes preventive as well as curative medicine. Furthermore the bulk of the population resides in urban areas, facilitating access to medical care.

Life expectancy in the Arab Gulf states increased rapidly and reached higher levels than in the other Arab states in the region. In Saudi Arabia, the most populous Arab country in the Gulf, life expectancy rose during the period 1950-55 and 2000-2005 from 39.1 to 69.9 years for males, and from 40.7 to 73.8 years for females.

It should be noted that the entry of large numbers of foreign workers into the Gulf states after 1973— accounting for between one-fourth and four-fifths of the population in the small Gulf states, affected both fertility and mortality rates in several ways. One important consequence was skewed demographic statistics, because most of the foreigners were young males. Thus excluding the foreign workers from the denominator of birth and death rates dramatically alters the value of both rates (Omran and Roudi, 1993).

Table 2 reflects in sharper focus the significance of the mortality decline in the Arab region during the second half of the twentieth century. In 1950-1955, Lebanon registered the highest life expectancy at birth at 56 years and only two other countries had an expectation of life at birth above 50 years, while 3 countries had life expectancies at birth below 40 years. By 2000-2005, life expectancy at birth was higher than 70 years in 13 countries, around 69 years in two countries, and around 59-60 years in only two countries. The data in Table 2 show that the United Arab Emirates leads the Arab region with a life expectancy at birth of 77.9 years in 2000-2005 (76.3 years for males and 80.6 years for females). After UAE, in second, third and fourth places are Kuwait, Bahrain, and Oman, followed by 9 other countries with a life expectancy at birth higher than 71 years. To control the initial level of life expectancy,

which, as noted above varied considerably among the region's countries in 1950-1955, an index of mortality decline employed by the Population Division of the United Nations (United Nations, 2002) was calculated by comparing the increase in life expectancy recorded by a given country between 1950-1955 and 2000-2005 and the maximum gain judged possible. This procedure meant establishing the difference between maximum life expectancy experienced by a country in 2000-2005 (namely, 81.9 years, corresponding to Japan) and the level experienced by the country under consideration in 1950-1955. Therefore, the index represents the portion of the maximum possible increase of life expectancy that has already been achieved. The higher the index, the closer a country came to achieving the maximum potential reduction of mortality (United Nations, 2002). Large relative gains amounting to more than 75 percent of the maximum potential increase in life expectancy were recorded by 9 countries, all of which are projected to have achieved life expectancies ranging from 72 to 78 years in 2000-2005. There follows 5 countries with gains amounting to between 69 and 73 percent, and with life expectancies ranging from 69 to 73 years in 2000-2005.

Thus more than four-fifths of the Arab states considered experienced increases in life expectancy amounting to at least 69 percent of the potential maximum. At the other extreme, two countries, Iraq and Yemen, which show the lowest life expectancy levels in the region in 2000-2005, only managed to realize 37 and 56 percent, respectively, of the maximum potential increase in life expectancy, between 1950-1955 and 2000-2005. In the case of Iraq, the very low value of the index resulted mainly from a more recent increasing mortality, which caused life expectancy to drop by about 10 percent from 65 years in 1985-1990 to 58.8 years in 2000-2005. The impressive mortality decline and the accompanying rise in life expectancy in the Arab region reflect a sharp drop in infant and childhood mortality (Farid, 1999; Hill, 1995; United Nations, 2003). Overall levels of life expectancy are strongly determined by mortality at young ages, especially when mortality is high. Consequently, the marked increases in life expectancy that occurred during the past 50 years or so in the Arab region reflect in large part sharp drops of mortality in childhood (United Nations, 2003). As Table 3 shows, the mortality decline index for the Arab region is 71 percent.

Table 2. Life expectancy at birth (LEB) for both sexes by rank, Arab countries of Western Asia and Northern Africa, 1950-1955 and 2000-2005

1950-1955				2000-2005			
Country	Rank	LEB	Country deviation from regional mean	Country/Territory	Rank	LEB	Country deviation from regional mean
Lebanon	1	55.9	11.1	United Arab Emirates	1	77.9	6.6
Kuwait	2	55.6	10.8	Kuwait	2	76.8	5.5
Bahrain	3	50.9	6.1	Bahrain	3	74.2	2.9
				Oman	4	74.0	2.7
Qatar	4	48.0	3.2	Libyan	5	73.4	2.1
United Arab Emirates	5	48.0	3.2	Syrian	6	73.2	1.9
Syrian	6	45.9	1.1	Tunisia	7	73.1	1.8
Iraq	7	45.3	0.5	Qatar	8	72.7	1.4
Tunisia	8	44.6	-0.2	O. Palestine	9	72.4	1.1
Jordan	9	43.2	-1.6	Lebanon	10	71.9	0.6
O. Palestine	10	43.2	-1.6	Saudi Arabia	11	71.6	0.3
Algeria	11	43.1	-1.7	Jordan	12	71.2	-0.1
Morocco	12	42.9	-1.9	Algeria	13	71.0	-0.3
Libyan	13	42.7	-2.1				
Egypt	14	42.4	-2.4	Egypt	14	69.6	-1.7
				Morocco	15	69.5	-1.8
Saudi Arabia	15	39.9	-4.9	Yemen	16	60.3	-11.0
Oman	16	37.6	-7.2				
Yemen	17	32.5	-12.3	Iraq	17	58.8	-12.5
Arab region (17 countries)		44.8				71.3	

Source: United Nations (2005). World Population Prospects: The 2004 Revision, Database Online, Population Division, New York.

3. Sex Differentials in Life Expectancy

As Table 1 indicates, in the 17 Arab states considered, the increases in life expectancy at birth have been higher among females than among males in all but one country; consequently, sex differentials in life expectancy have tended to increase over the past 50 years or so, from a regional average of 2.2 years in 1950-1995 to an average of 3.7 years in 2000-2005.

Sex differentials in life expectancy at birth in 2000-2005 are shown in Table 4 for 17 Arab states ranked according to size of the differential. As may be seen, in all Arab countries considered, life expectancy for females exceeds that for males. The average size of the female advantage in life expectancy is 3.7 years, with a range from 2.5 years in Algeria to 4.8 years in Qatar. In 2000-2005, the difference between the two sexes ranges from 2.5 and 3.9 years in 9 countries and from 4.2 to 4.9 years in the remaining 8 countries, compared with a difference of 4.5 years for the world, and as much as 7.8 years for the more developed regions. This small average gender gap

in life expectancy in the Arab region relative to the more developed regions is due at least in part to higher levels of maternal mortality in several Arab countries. The data in Table 4 indicate that various combinations of male and female life expectancies can result in a similar sex differential in life expectancy. In Algeria and Yemen, for example, the size of the sex differential in life expectancy is about 2.5 years. In Yemen, this difference arises from female life expectancy of 61.7 years and male life expectancy of 59.1 years, while in Algeria the corresponding values are 72.2 years for females and 69.7 years for males. A similar situation is also observed for Egypt and Kuwait, Jordan and Iraq, Morocco and the United Arab Emirates, and Libya and Qatar.

In general, the figures in Table 4 do not show a relationship between the level of life expectancy at birth by sex and the size of the sex differential in life expectancy. In fact, the ranking of the countries by size of the sex differential in life expectancy clearly shows that the widening of the gender gap in life expectancy at birth is not necessarily a concomitant consequence of mortality decline (United Nations, 1988).

Table 3. Mortality reduction index, Arab countries of Western Asia and Northern Africa, 1950-1955 and 2000-2005

Country (ranked according to life expectancy in 1950-1955)	Life expectancy at birth		Mortality reduction index (per cent)
	1950-1955	2000-2005	
Lebanon	55.9	71.9	61.5
Kuwait	55.6	76.8	80.6
Bahrain	50.9	74.2	75.0
Qatar	48.0	72.7	72.9
United Arab Emirates	48.0	77.9	88.2
Syria	45.9	73.2	75.8
Iraq	45.3	58.8	36.9
Tunisia	44.6	73.1	76.4
Jordan	43.2	71.2	72.4
O. Palestine	43.2	72.4	75.4
Algeria	43.1	71.0	71.9
Morocco	42.9	69.5	68.2
Libya	42.7	73.4	78.3
Egypt	42.4	69.6	68.9
Saudi Arabia	39.9	71.6	75.5
Oman	37.6	74.0	82.2
Yemen	32.5	60.3	56.3
Arab region (17 countries)	44.8	71.3	71.2

Table 4. Life expectancy at birth and the sex differential in life expectancy, in years, Arab countries of Western Asia and Northern Africa, ranked by size of the sex differential, 2000-2005

Country	Rank*	Life expectancy at birth in 2000-2005			
		Both			Sex
		sexes	Males	Females	differential
		(1)	(2)	(3)	((4)-(3))
Algeria	1	71.0	69.7	72.2	2.5
Yemen	2	60.3	59.1	61.7	2.6
Bahrain	3	74.2	72.9	75.8	2.9
Oman	4	74.0	72.7	75.6	2.9
Jordan	5	71.2	69.8	72.8	3.0
Iraq	6	58.8	57.3	60.4	3.1
O. Palestine	7	72.4	70.8	73.9	3.1
Syria	8	73.2	71.4	74.9	3.5
Saudi Arabia	9	71.6	69.9	73.8	3.9
Tunisia	10	73.1	71.1	75.3	4.2
Egypt	11	69.6	67.5	71.8	4.3
Kuwait	12	76.8	75.1	79.4	4.3
Lebanon	13	71.9	69.7	74.0	4.3
Morocco	14	69.5	67.4	71.7	4.3
United Arab Emirates	15	77.9	76.3	80.6	4.3
Libya	16	76.1	71.4	76.1	4.7
Qatar	17	72.7	71.1	75.9	4.8
Arab region (17 countries)		71.3	69.6	73.3	3.7

*Ranked according to size of sex differential in life expectancy in 2000-2005 (column 5).

The figures also show that countries in which life expectancy is above the regional average for one sex will also have above average life expectancy for the other sex. The converse is also true as shown by the level of life expectancy at birth for Egypt, Iraq, Morocco and Yemen. It is, however, to be expected that Arab countries will see a widening of the female/male difference in upcoming decades, along the lines of the historical trend in the more developed regions. One factor that may promote such a widening is education, which is positively related to survival. As women 'catch up' to men in terms of educational attainment, we might expect to see relative improvement in survival and health status.

4. Gross National Income and Mortality Conditions

4.1. Income and expectation of life

Life expectancy in the less developed regions is well known to be related to levels of socio-economic development (Caldwell, 1976; Caldwell and Caldwell,

2002; Preston, 1975 and 1985, United Nations, 1982). This section examines the inter-country relationships between socio-economic level, as measured by the gross national income in purchasing power parity per capita (PPP) and a number of indicators of mortality level in the Arab region in 2000-2005.

In Table 5, countries in the Arab region are ranked according to per capita income (PPP). The table also shows the ranking of expectation of life at birth relative to real per capita income (PPP) ranking. In group A, with per capita incomes over US\$ 15,000, life expectancies in the range of 72-78 years have now been achieved. But it is also seen from Table 5 that three of the five countries in the next two highest income level are characterized by life expectancies around 71-73 years, a level not much different from those of countries with real per capita incomes down to about US\$ 3,000. This suggests that life expectancy of 70 years is within reach for two of the four countries with a lower life expectancy, namely, Egypt and Morocco.

Syria and Occupied Palestinian territory are outstanding in their unusually high life expectancy in relation to their real per capita income. While Syria ranked only fourteenth from highest in PPP, it ranked sixth in life

expectancy. Jordan and Saudi Arabia provide another striking example. Both countries have very close life expectancy at birth, but Jordan, which ranked eleventh from highest in PPPPC, had in 2002 a real per capita income equivalent to only one-third of that of Saudi Arabia.

4.2. Income and adult mortality

Table 6 presents estimates of under-five mortality rate, adult mortality as measured by the probability of dying between the ages of 15 and 60, or $_{45}q_{15}$ in standard life table notation, and maternal mortality ratio, for 17 countries in the Arab region, ranked by real per capita income (PPPPC), in 2002. Recent studies show important improvements in early childhood mortality in most Arab states, particularly in the Arab Gulf states and North Africa, which managed to halve their early childhood mortality rates in the past 15 years or so (Farid, 1999; Hill, 1999). The figures in table 6,

however, show important differences in the prospects of child survival between the 17 Arab states considered; the under-5 mortality rate in 2003 was below 10 deaths per 1,000 live births in only two countries, between 10 and 25 deaths in 7 countries, between 25 and 50 deaths in 6 countries, and above 100 deaths per 1,000 live births in two countries: Iraq and Yemen. As may be seen from the figures presented in the Statistical Report in part two of the present volume, Yemen has experienced a particularly low average yearly rate of decrease in its under-5 mortality rate (2.9% in the period 1960-1990 and 2.6% in 1990-2001), while Iraq shows an average yearly increase of 8.9% in its under-5 mortality rate during the period 1990-2001. Adult mortality risks vary within a wide range. Male $_{45}q_{15}$ ranges from a minimum of 73 per 1,000 in Kuwait to 298 per 1,000 in Yemen and a high of 466 per 1,000 in Iraq. Female $_{45}q_{15}$ ranges from a minimum of 53 per 1,000 in Kuwait to a maximum of 227 per 1,000 in Yemen. In all Arab countries considered, adult male mortality is higher than adult female mortality.

Table 5. Parity purchasing power per capita income (PPPPCI) in 2002, and life expectancy at birth in 2000-2005, Arab countries of Western Asia and Northern Africa

Income group (PPPPCI) 2002	Country	Population (thousands) 2005	PPPPCI (US\$) 2002	Life expectancy at birth (LEB) 2000-2005	PPPPCI ranking	Life expectancy ranking	Relative LEB ranking to PPPPCI ranking
A. Over US\$ 15,000	United Arab Emirates	4,496	20,530	77.9	1	1	1
	Qatar	813	19,844	72.7	2	8	-6
	Bahrain	727	17,170	74.2	3	3	0
	Kuwait	2,687	16,240	76.8	4	2	2
B. US\$ 10,000-15,000	Oman	2,567	13,340	74.0	5	4	1
	Saudi Arabia	24,573	12,650	71.6	6	11	-5
C. US\$ 5,000-10,000	Libya	5,853	7,570	76.1	7	5	2
	Tunisia	10,102	6,760	73.1	8	7	1
	Algeria	32,854	5,760	71.0	9	13	-4
D. US\$ 3,000-5,000	Lebanon	3,577	4,360	71.9	10	10	0
	Jordan	5,703	4,220	71.2	11	12	-1
	Egypt	74,033	3,810	69.6	12	14	-2
	Morocco	31,478	3,810	69.5	13	15	-2
	Syria	19,043	3,620	73.2	14	6	8
E. US\$ 1,000-3,000	O. Palestine	3,702	2,788	72.4	15	9	6
F. Below US\$ 1000	Yemen	20,975	870	60.3	16	16	0
G. Not available	Iraq	28,807	N.A.	58.8	N.A.	17	--
Total/means		271,990	8,959	71.3			

Source: - Population and life expectancy at birth: United Nations (2005). World Population Prospects: The 2004 Revision, Database Online, Population Division, New York.
 - PPPPCI: UNDP (2004). Human Development Report 2004.

Consequently, male-female differences in the probability of dying between the ages of 15 and 60 range from 2 percentage points in Kuwait to around 8 percentage points in Egypt and Saudi Arabia, and as much as 26 percentage points in Iraq.

Table 7 summarizes the association between real per capita income and measures of mortality conditions. As may be seen, mortality indicators for low income countries are higher than for high and medium income countries. The relationship between child mortality and income is stronger than that between adult mortality and

income. In both cases, however, the relationship is neither simple nor linear.

Further, for medium and low income countries, the relationship between adult female mortality and income is somewhat weaker than that between adult male mortality and income. The relationships described here suggest that with the existence of an adequate public health base, individual economic levels are not nearly so important in determining mortality over most of the income range, particularly above a 2002 real per capita income of US\$ 3,000.

Table 6. Parity purchasing power per capita income (PPPPCI) and child, adult and maternal mortality indicators, Arab countries of Western Asia and Northern Africa, 2000-2003

Income group (PPPPCI), 2002 and Country	Under-five mortality rate per 1,000 live births 2003	Adult mortality rate (probability of dying between exact ages 15 and 60 years) per 1,000 2003		Maternal mortality ratio, per 100,000 live births 2000
		Males	Females	
A. Over US\$ 15,000				
United Arab Emirates	8	168	121	54
Qatar	15	93	76	7
Bahrain	15	117	81	28
Kuwait	9	73	53	5
B. US\$ 10,000-15,000				
Oman	12	163	91	87
Saudi Arabia	26	196	119	23
C. US\$ 5,000-10,000				
Libya	16	172	101	97
Tunisia	24	167	113	120
Algeria	41	155	125	140
D. US\$ 3,000-5,000				
Lebanon	31	199	138	150
Jordan	28	189	120	41
Egypt	39	242	157	84
Morocco	39	159	103	220
Syria	18	188	126	160
E. US\$ 1,000-3,000				
O. Palestine	24	N.A.	N.A.	100
F. Below US\$ 1,000				
Yemen	113	298	227	570
G. Not available				
Iraq	125	466	205	250

Source: a) Under-five mortality: UNICEF, The State of the World's Children 2005;
b) Adult mortality rate: WHO, The World Health Report 2005;
c) Maternal mortality ratio: WHO, UNICEF and UNFPA, 2003.

Table 7. Population and mortality indicators, ranked by income group, Arab countries of Western Asia and Northern Africa, 2000-2003

Income group (number of countries)	Population 2005		PPPCI (US\$) 2002	Life expectancy at birth (both sexes) 2000-2005	Under-five mortality rate per 1,000 live births 2003	Adult mortality rate (probability of dying between exact ages 15 and 60 years) per 1,000 2003		Maternal mortality ratio, per 100,000 live births 2000	Mortality reduction index (per cent) between 1950-1955 and 2000-2005
	Number (thousands)	%				Males	Females		
A (4)	8,723	3.2	18,446	75.4	12	113	83	24	79.2
B (2)	27,140	10.0	12,995	72.8	19	118	105	55	78.9
C (3)	48,809	17.9	6,697	73.4	27	165	113	119	75.5
D (5)	133,834	49.2	3,964	71.1	31	195	129	131	69.4
E (1)	3,702	1.4	2,788	72.4	24	N.A.	N.A.	100	75.4
F (1)	20,975	7.7	870	60.3	113	298	227	570	56.3
G (1)	28,807	10.6	N.A.	58.8	125	466	205	250	36.9
Total/ means	271,990	100.0	8,959	71.3	34	190	122	126	71.2

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