

MORTALITY ASSOCIATED WITH LIVER DISEASES IN EGYPT (١٩٨٦-٢٠٠٥)

Thesis submitted for Partial Fulfillment of M.SC. Degree in
Public Health

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Table of contents

	Page
List of tables	ii
List of figures	v
List of abbreviations	vii
Introduction	۱
Aim of work	۳
Review of literature	۴
Subjects and methods	۳۲
Results	۳۹
Discussion	۹۱
Summary ۱۰۵	
Conclusion	۱۰۷
Recommendations ۱۰۸	
References ۱۱۰	

List of tables

Table number	Page
Table ١: Liver diseases specific death rates (per ١٠٠.٠٠٠), Egypt ١٩٨٦-٢٠٠٥	٤٩
Table ٢: Liver diseases specific death rates (per ١٠٠.٠٠٠), ٥٠ Egypt ١٩٨٦-٢٠٠٥ (after direct standardization)	
Table ٣: Proportionate mortality ratio for liver diseases ٥٢ (per ١٠٠), Egypt ١٩٨٦-٢٠٠٥	
Table ٤: Liver diseases specific death rates for different age groups (per ١٠٠.٠٠٠), Egypt (years ١٩٨٦, ١٩٩٦ and ٢٠٠٥):	٥٣
Table ٥: Years of life lost due to liver diseases, Egypt ١٩٨٦-٢٠٠٥:	٥٦
Table ٦: Years of life lost due to liver diseases for different ٥٧ age groups, Egypt ٢٠٠٥:	
Table ٧: Hepatitis B specific death rates (per ١٠٠.٠٠٠), Egypt ٥٩ ١٩٨٦-٢٠٠٥	
Table ٨: Hepatitis B specific death rates (per ١٠٠.٠٠٠), Egypt ٦٠ ١٩٨٦-٢٠٠٥ (after direct standardization)	
Table ٩: Proportionate mortality ratio for hepatitis B (per ١٠٠), Egypt ١٩٨٦-٢٠٠٥	٦٢

Table ١٠: Hepatitis B specific death rates for different age groups
(per ١٠٠,٠٠٠), Egypt (years ١٩٨٦, ١٩٩٦ and ٢٠٠٥): ٦٣

Table ١١: Years of life lost due to hepatitis B infection, Egypt
١٩٨٦-٢٠٠٥: ٦٦

Table ١٢: Years of life lost due to hepatitis B infection for different
٦٧
age groups, Egypt ٢٠٠٥:

Table ١٣: Hepatitis C specific death rates (per ١٠٠,٠٠٠), Egypt
٦٩
١٩٨٦-٢٠٠٥

Table ١٤: Hepatitis C specific death rates (per ١٠٠,٠٠٠), Egypt
٧٠
١٩٨٦-٢٠٠٥ (after direct standardization)

Table ١٥: Proportionate mortality ratio for hepatitis C (per ١٠٠),
٧٢
Egypt ١٩٨٦-٢٠٠٥

Table ١٦: Hepatitis C specific death rates for different age groups
٧٣
(per ١٠٠,٠٠٠), Egypt (years ٢٠٠٠ and ٢٠٠٥):

Table ١٧: Years of life lost due to hepatitis C infection, Egypt
٧٦
١٩٨٦-٢٠٠٥:

Table ١٨: Years of life lost due to hepatitis C infection for
٧٧
different age groups, Egypt ٢٠٠٥:

Table ١٩: Liver cancer specific death rates (per ١٠٠,٠٠٠), Egypt
٧٩

١٩٨٦-٢٠٠٥

Table ٢٠: Liver cancer specific death rates (per ١٠٠,٠٠٠), Egypt
٨٠

١٩٨٦-٢٠٠٥ (after direct standardization)

Table ٢١: Proportionate mortality ratio for liver cancer (per ١٠٠), ٨٢
Egypt ١٩٨٦-٢٠٠٥

Table ٢٢: Liver cancer specific death rates for different age groups
٨٣

(per ١٠٠,٠٠٠), Egypt (years ١٩٨٦, ١٩٩٦ and ٢٠٠٥):

Table ٢٣: Years of life lost due to liver cancer, Egypt
٨٦

١٩٨٦-٢٠٠٥:

Table ٢٤: Years of life lost due to liver cancer for different
٨٧

age groups, Egypt ٢٠٠٥:

Table ٢٥: Liver cirrhosis specific death rates (per ١٠٠,٠٠٠),
٨٩

Egypt ١٩٨٦-٢٠٠٥

Table ٢٦: Liver cirrhosis specific death rates (per ١٠٠,٠٠٠),
٩٠

Egypt ١٩٨٦-٢٠٠٥ (after direct standardization)

Table ٢٧: Proportionate mortality ratio for liver cirrhosis
٩٢

(per ١٠٠), Egypt ١٩٨٦-٢٠٠٥

Table ٢٨: Liver cirrhosis specific death rates for different age groups
٩٣

(per ١٠٠,٠٠٠), Egypt (years ١٩٨٧, ١٩٩٦ and ٢٠٠٥):

Table ٢٩: Years of life lost due to liver cirrhosis, Egypt ١٩٨٦-٢٠٠٥:	٩٦
Table ٣٠: Years of life lost due to liver cirrhosis for different age groups, Egypt ٢٠٠٥:	٩٧

List of figures

Figure number	Page
Figure ١: Mortality trend of liver diseases, Egypt ١٩٨٦-٢٠٠٥	٥١
Figure ٢: Liver diseases specific death rates for different age groups (per ١٠٠.٠٠٠), Egypt ١٩٨٦	٥٤
Figure ٣: Liver diseases specific death rates for different age groups (per ١٠٠.٠٠٠), Egypt ١٩٩٦	٥٤
Figure ٤: Liver diseases specific death rates for different age groups (per ١٠٠.٠٠٠), Egypt ٢٠٠٥	٥٥

Figure ٥: Years of life lost due to liver diseases for different age groups, Egypt ٢٠٠٥:	٥٨
Figure ٦: Mortality trend of hepatitis B, Egypt ١٩٨٦-٢٠٠٥ ٦١	
Figure ٧: Hepatitis B specific death rates for different age groups (per ١٠٠,٠٠٠), Egypt ١٩٨٦	٦٤
Figure ٨: Hepatitis B specific death rates for different age groups (per ١٠٠,٠٠٠), Egypt ١٩٩٦	٦٤
Figure ٩: Hepatitis B specific death rates for different age groups (per ١٠٠,٠٠٠), Egypt ٢٠٠٥	٦٥
Figure ١٠: Years of life lost due to hepatitis B infection for different age groups, Egypt ٢٠٠٥:	٦٨
Figure ١١: Mortality trend of hepatitis C, Egypt ١٩٨٦-٢٠٠٥ ٧١	
Figure ١٢: Hepatitis C specific death rates for different age groups (per ١٠٠,٠٠٠), Egypt ٢٠٠٠	٧٤
Figure ١٣: Hepatitis C specific death rates for different age groups (per ١٠٠,٠٠٠), Egypt ٢٠٠٥	٧٤
Figure ١٤: Years of life lost due to hepatitis C infection for ٧٨ different age groups, Egypt ٢٠٠٥:	
Figure ١٥: Mortality trend of liver cancer, Egypt ١٩٨٦-٢٠٠٥ ٨١	

Figure ١٦: Liver cancer specific death rates for different age
٨٤

groups (per ١٠٠,٠٠٠), Egypt ١٩٨٦

Figure ١٧: Liver cancer specific death rates for different age
٨٤

groups (per ١٠٠,٠٠٠), Egypt ١٩٩٦

Figure ١٨: Liver cancer specific death rates for different age
groups (per ١٠٠,٠٠٠), Egypt ٢٠٠٥

٨٥

Figure ١٩: Years of life lost due to liver cancer for different age
groups, Egypt ٢٠٠٥:

٨٨

Figure ٢٠: Mortality trend of liver cirrhosis, Egypt ١٩٨٦-٢٠٠٥
٩١

Figure ٢١: Liver cirrhosis specific death rates for different age
groups (per ١٠٠,٠٠٠), Egypt ١٩٨٧

٩٤

Figure ٢٢: Liver cirrhosis specific death rates for different age
٩٤

groups (per ١٠٠,٠٠٠), Egypt ١٩٩٦

Figure ٢٣: Liver cirrhosis specific death rates for different age
٩٥

groups (per ١٠٠,٠٠٠), Egypt ٢٠٠٥

Figure ٢٤: Years of life lost due to liver cirrhosis for different
٩٨

age groups, Egypt ٢٠٠٥:

List of abbreviations

AUC	American University in Cairo
CAPMAS	Central Agency for Public Mobilization And Statistics
CDC	Centers for Disease Control and Prevention
DALY	Disability Adjusted Life Years
HAV	Hepatitis A virus
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
ICD	International Classification of Disease
MOHP	Ministry of Health and Population
NASH	Nonalcoholic steatohepatitis
NDDIC	National Digestive Diseases Information Clearinghouse
NHANES	National Health and Nutrition Examination Survey
NICHP	National Information Center for Health and Population
NIH	National Institute of Health
UMMC	University of Maryland Medical Center
WHO	World Health Organization
YLL	Years of Life Lost

Introduction

The burden of liver disease in Egypt has been assessed in reports of causes of death performed by the Ministry of Health Information System over the years ١٩٩٧-١٩٩٨. It is estimated that liver diseases could contribute to more than ١٠% of over-all mortality and is now the second most common cause of death after heart diseases in Egypt, **(Mohamed, ٢٠٠٤)**.

It is found that ٧% of all Egyptian deaths annually are associated with either liver cirrhosis or hepatocellular carcinoma, ٧٥-٨٥% of persons with these conditions have either chronic hepatitis B virus infection or hepatitis C virus infection as a contributing cause, **(Ministry of Health and Population, ٢٠٠١)**.

Exposure to hepatitis viruses is extensive among the rural population of Egypt. Antibodies against hepatitis A virus (HAV) are detected in nearly ١٠٠% of both children and adults and antibodies to hepatitis B virus (HBV) are present in ٤٠-٦٥% in most community based studies, **(Darwish et al, ١٩٩٦)**.

Egypt is the country with the largest hepatitis C virus (HCV) prevalence in the world. HCV antibody prevalence is estimated at around ١٢% in the general population, and exceeds ٣٠% among adults older than age ٣٠. The origin of the HCV epidemic has been attributed to mass campaigns of intravenous treatment for schistosomiasis in the ١٩٧٠'s, **(Frank et al, ٢٠٠٠)**.

HCV-related mortality (due to hepatocellular carcinoma and liver cirrhosis) is expected at least to double in the next ٢٠ years, **(Burban et al, ٢٠٠٦)**.

Hepatocellular carcinoma (HCC) is the fifth most common malignancy in the world, **(El-Serag, ٢٠٠٢)**. Its incidence is increasing worldwide ranging between ٣% and ٩% annually, **(Velazquez et al, ٢٠٠٣)**. In Egypt, HCC was reported to account for about ٤.٧% of chronic liver disease patients, **(El-Zayadi et al, ٢٠٠١)**. More than ٨٠% of the risk of HCC is attributable to chronic infections with hepatitis B and C viruses worldwide, **(Chen et al, ١٩٩٧)**. The number of deaths per year from HCC exceeds ٢٥٠,٠٠٠, placing it the sixth as the cause of death from cancer worldwide, **(Steel et al, ٢٠٠٤)**.

Liver cirrhosis is considered a major cause of mortality worldwide and is the most common non neoplastic cause of death among hepatobiliary and digestive diseases in United States, accounting for approximately ٣٠,٠٠٠ deaths per year. An additional ١٠,٠٠٠ deaths occur due to liver cancer, the majority of which involve underlying cirrhosis, **(Friedman and Schiano, ٢٠٠٤)**.

Among important liver diseases in Egypt is schistosomiasis caused by schistosoma mansoni, which was affecting about ٤.٣% of population in Upper Egypt and ٣٦.٤% of population in Lower Egypt, **(El-Khoby et al, ٢٠٠٠)**.

It is estimated that about ٢٠٠,٠٠٠ deaths per year occur as a result of schistosomiasis and its complications worldwide, **(WHO, ٢٠٠٢)**.

Aim of work

١. To calculate mortality rates of some conditions related to liver disease in Egypt and their trend over the period (١٩٨٦-٢٠٠٥).
٢. To calculate the years of life lost [YLLs] due to some liver diseases in Egypt.

Review of literature

Empirical information on the health status of the population is an essential element for evidence-based public health policy-making. Traditionally, mortality and its derivative, have been important indicators of health, **(Olshansky and Ault, ١٩٨٦)**.

Precise information about diseases and injuries, their incidences, their consequences, their causation and their trend is more than ever necessary to evaluate the impact of health policies and to justify the adoption of new ones. In recent years, considerable international effort has been put into the development of summary measures of population health which include information on mortality and non-fatal health outcomes, **(National Burden of Disease Studies, ٢٠٠١)**.

Very little scientifically based information is available on cause specific mortality rates for many developing countries. What information does exist is often out of date, applicable only to major urban areas, and not sufficiently disaggregated to differentiate between important population sub-groups, **(Workshop on Evidence for Health Policy ٢٠٠٢, ٢٠٠٢)**.

Death records are an important data source for assessing population health and health disparities because they cover the whole population and include information on key characteristics of decedents, including age, sex, ethnicity, place of residence and of death, and underlying cause of death, **(Murray and Lopez, ١٩٩٦)**.

In Egypt, registration of births and deaths was first introduced in March ١٨٣٩, **(American University in Cairo and UNICEF, ١٩٩٧)**. Civil registration is compulsory and well established. The act no.٢٦٠/١٩٦٠ regulates all components of civil

registration (births, deaths, marriages, divorces and identification cards). This act is issued updating the act no. ١٣٠/١٩٤٦ and related acts concerning with births and deaths, (**Ministry of Interior, ١٩٨٥**). This act was followed by the act no. ١٤٣/١٩٩٥ and executive setting no. ١١٢١/١٩٩٥, which is running to date, (**Ministry of Interior, ١٩٩٥**).

Egyptian Ministry of Health and Population (MOHP) requires reporting of deaths at remote health units in both rural and urban areas. The health office is the only site responsible to be notified by death events by the act no. ١٤٣/١٩٩٤-section ٤-items from ٣٥ to ٤٢. The deaths are registered in death logbook. Each week, a summary sheet containing the main characteristics and a copy of notification sheet about each death event are sent to the local civil registration office. The local civil registration offices make a collective sheet from attached health offices and send it to governmental civil office. The central departments of civil registration (Ministry of Interior at Cairo) receive the summary sheets from all governorates. After revising and entering data to the main computer they send all the sheets to the Central Agency for Public Mobilization and Statistics (CAPMAS). Thus, the flow of data from peripheral health offices passes in tow main ways. The first is through civil departments (Ministry of Interior – Central Civil Registration Department) then to CAPMAS for processing and issuing the official reports. The second way is through statistical health department (Ministry of Health and Population-National Information Center for Health and Population).

Each of the three agencies, CAPMAS, Ministry of Interior, Ministry Of Health and Population, is issuing annually their death reports but the official annual one is that issued by CAPMAS, (**The Burden of Disease and Injury in Egypt, ٢٠٠٤**).

CAPMAS is the official organization responsible to publish the processed information about the births and deaths. The statistics