Department of International Economic and Social Affairs

AGE STRUCTURE OF MORTALITY IN DEVELOPING COUNTRIES

A Data Base for Cross-Sectional and Time Series Research

UNITED NATIONS

New York, 1986

NOTE

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The term "country" as used in the text of this report also refers, as appropriate, to territories or areas.

PREFACE

This publication presents a data base of national life tables from developing countries for use in international cross-section and time series research activities in which mortality is a variable of consideration. The data base already plays an important role in demographic research within the Population Division of the Department of International Economic and Social Affairs of the United Nations Secretariat - for example, in studies on sex differentials in mortality and in monitoring mortality trends. It is believed that social science researchers outside the United Nations will also find it a valuable resource.

The data base has been prepared in fulfilment of the request of the Population Commission, at its twenty-second session, for the Division to prepare sets of life tables for developing countries, especially under situations where mortality is high, and/or data are defective.

CONTENTS

EXPLANATORY NOTES

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

A hyphen between years (e.g., 1984-1985) indicates the full period involved, including the beginning and end years.

A point (.) is used to indicate decimals.

The following symbols have been used in the tables:

Two dots (..) indicate that data are not available or are not separately reported.

Five dots (.....) indicates that the item is not applicable.

A minus sign (-) before a number indicates a deficit or decrease.

Details and percentages in tables do not necessarily add to totals because of rounding.

INTRODUCTION

International data bases have played a major role in population research, just as they have in all the other social sciences. It is largely through international comparisons that social statisticians have uncovered patterns of demographic structure and processes and hypothesized their causal mechanisms and potential consequences. Similarly, national deviations from international patterns have further enlightened demographic understanding, due to the necessity of explaining "outliers" and have set the backdrop for more intensive national studies where the social and cultural complexities of individual societies can play a greater role in the research endeavor.

The Population Division of the Department of International Economic and Social Affairs of the United Nations Secretariat maintains a number of international data bases for conducting its research agenda. In this volume one of these data bases - a series of national life tables from developing countries - is made available to outside users. It is being made available because outside requests during the past few years indicate its potential value to researchers beyond the United Nations system and because the reliability of the data and the completeness of documentation reduce the risk of misuse.

The data base consists of 78 national life tables from 43 developing populations covering a period from the mid 1940s to the early 1980s. All the tables are based on recorded deaths, by age and sex, and the population at risk by age and sex. They have been evaluated to ensure their quality; data have been adjusted when appropriate; and tables of questionable reliability have been excluded. The result is, to the fullest extent feasible, a set of tables that are reliable, consistent and comparable.

These characteristics - reliability, consistency, comparability - are use-dependent concepts. Although the data base should prove acceptable for most international comparisons, its use will require caution in certain circumstances. It cannot be used, for example, to study relative completeness of death registration between the elderly and young adults, because for some life tables, completeness of adult death registration has been assumed to be invariant to age.

So that potential users of this data base can be well informed of its appropriateness for a specific study, a description of the procedure undertaken to calculate the life tables is given in chapter I. That chapter should be reviewed before the data base is used. It indicates the source of the figures, the organization or researchers that analysed the data (if not the United Nations), any adjustments that were made to the data and the basis upon which the adjustments were made.

The data base itself contains 78 life tables, in both tabular and graphic form, from 43 developing countries, arranged alphabetically within each region. They cover nine African countries, 19 American countries and 15 Asian countries (table 1), comprising 18 per cent of all African countries, 70 per cent of American developing countries and 38 per cent of Asian developing countries. Since 24 of the 43 countries have available life tables at two or more points in time, longitudinal analysis is possible for a subset of the data base. The life tables are based on analyses of data carried out by the Population Division or undertaken by national authorities, research institutions or other international organizations.

For each country, the life tables are presented for all available dates. The tables include the usual life table columns, calculated by Greville's procedure (Greville, 1943). Each set of country life tables is followed by a series of graphs of the central death rate ($_nm_x$) column presenting comparisons between the sexes and over time.

In general, an active effort was made to estimate life tables for the post-1950 period only, but two life tables (for Trinidad and Tobago and for Sri Lanka) are included which refer to an earlier date. Of the 78 life tables, 29 refer to the 1960-1969 decade and 37 to the 1970-1979 decade; only five are for periods prior to 1960, and seven refer to 1980 or later (table 2).

The life tables refer to a broad range of life expectancies, distributed within each region in a way roughly similar to the current distribution of life expectancies in developing countries. Half of the life tables show life expectancies at birth between 60 and 69 years, about 15 per cent show life expectancies of 70 years or more, and just over a third show life expectancies under 60 years (table 3). The distributions vary among the regions, as would be expected from the differing levels of mortality they are known to have.

Table 1. Distribution of countries in the data base by
region and number of life tables included

Region	1	2	3+	Total
Africa	6	2	1	9
Americas	6	9	4	19
Asia	7	5	3	15
TOTAL	19	16	8	43

Table 2. Distribution of life tables in the data base
by region and reference date

Region	Before 1950	1950-59	1960-69	1970-79	1980-83	Total
Africa	0	0	6	7	0	13
Americas	1	1	17	15	3	37
Asia	1	2	6	15	4	28
TOTAL	2	3	29	37	7	78

Table 3. Distribution of life tables in the data base by
region and life expectancy at birth

Region	Life expectancy at birth (in years)							
	Less than 45	45-49	50-54	55-59	60-64	65-69	70+	Total
Africa	2	1	5	1	4	0	0	13
Americas	1	1	3	3	12	12	5	37
Asia	2	3	2	3	7	4	7	28
TOTAL	5	5	10	7	23	16	12	78

As can be noted from tables 4, 5 and 6, the life expectancies at birth presented in the data base are consistent with those of the United Nations 1984 assessment of the world population situation (United Nations, 1986).

For those researchers who wish to enter the life tables into the computer in a machine readable form the final section contains a listing of the $_n m_x$ values for the entire data base and a FORTRAN source listing which can be used to read the $_n m_x$ values and produce the life tables.

To those research institutions that send a diskette and a formal request to the Director of the Population Division, the Division will provide an IBM PC-compatible listing of the data and FORTRAN program presented in chapter III.

The Division would be pleased to receive comments from researchers on the life tables and on whether future publications of this type would be useful.

Table 4. Comparison of life expectancy at birth for countries
in the data base with life expectancy at birth from
the United Nations 1984 assessment: a/ Africa

Country	Reference date		Life expectancy at birth	
	Data base	Assessment	Data base	Assessment
Algeria	1969-71	1965-75	53	51-54
Burundi	1970-71	1965-75	44	44-45
Cameroon	1958-65	1955-65	38	38-41
Egypt	1965-67	1965-70	51	50
	1975-77	1975-80	55	56
Liberia	1970-71	1965-75	48	43-45
Mauritius	1961-63	1960-65	60	60
	1971-73	1970-75	63	63
Morocco	1972	1970-75	52	53
Réunion	1961-62	1960-65	57	58
	1967-68	1965-70	61	61
	1970	1965-75	62	61-64
Tunisia	1968-69	1965-70	53	52

a/ World Population Prospects: Estimates and Projections as Assessed in
1984 (United Nations publication, Sales No.: E.86.XIII.3).

Table 5. Comparison of life expectancy at birth for countries
in the data base with life expectancy at birth from the
United Nations 1984 assessment: a/ Americas

Country	Reference date		Life expectancy at birth	
	Data base	Assessment	Data base	Assessment
Argentina	1959-1961	1955-1965	65	65-66
	1969-1970	1965-1975	66	66-67
	1979	1975-1985	70	69-70
Chile	1959-1961	1955-1965	57	56-58
	1969-1971	1965-1975	62	61-64
Colombia	1963-1965	1960-1965	58	56
Costa Rica	1962-1964	1960-1965	62	63
	1972-1974	1970-1975	69	68
Cuba	1969-1971	1965-1975	72	69-71
El Salvador	1970-1972	1970-1975	57	59
Guadeloupe	1966-1968	1965-1970	65	66
	1981-1983	1980-1985	72	72
Guatemala	1963-1965	1960-1965	47	47
	1972-1973	1970-1975	55	54
Guyana	1959-1961	1955-1965	61	59-61
	1969-1971	1965-1975	64	63-64
Honduras	1960-1962	1960-1965	42	48
	1973-1975	1970-1975	52	54
Jamaica	1959-1961	1955-1965	64	61-64
	1969-1971	1965-1975	68	66-68
Martinique	1960-1962	1965-1970	65	65
	1966-1968	1965-1970	67	66
	1981-1983	1980-1985	73	73
Mexico	1969-1971	1965-1975	61	60-62

Table 5. (continued)

Country	Reference date		Life expectancy at birth	
	Data base	Assessment	Data base	Assessment
Panama	1960-1970	1960-1970	66	62-64
	1970-1980	1970-1980	69	66-69
Puerto Rico	1949-1951	-	60	-
	1959-1961	1955-1965	69	69-70
	1969-1971	1965-1975	72	71-73
	1979-1981	1975-1985	74	73-74
Suriname	1963-1964	1960-1965	64	62
Trinidad and Tobago	1945-1947	-	54	-
	1959-1961	1955-1965	64	62-65
	1969-1971	1965-1975	66	66-67
Uruguay	1962-1964	1960-1965	69	68
	1974-1976	1970-1980	69	69-70
Venezuela	1970-1972	1970-1975	65	66

a/ World Population Prospects: Estimates and Projections as Assessed in 1984 (United Nations publication, Sales No.: E.86.XIII.3).

Table 6. Comparison of life expectancy at birth for countries
in the data base with life expectancy at birth from
the United Nations 1984 Assessment: a/ Asia

Country	Reference date		Life expectancy at birth	
	Data base	Assessment	Data base	Assessment
Bangladesh	1964-1965	1960-1970	48	41-43
	1981	1980-1985	51	48
Hong Kong	1960-1962	1960-1965	67	66
	1970-1972	1970-1975	71	70
	1976	1970-1980	73	70-72
	1981	1975-1985	75	72-76
India	1971-1976	1970-1975	48	50
Iran	1973-1976	1970-1980	57	56-57
Israel	1960-1962	1960-1965	72	69
	1971-1973	1970-1975	72	72
Kuwait	1974-1976	1970-1980	68	67-69
	1979-1981	1975-1985	71	69-72
Malaysia (Peninsular)	1969-1971	..	64	..
Nepal	1974-1976	1970-1980	43	42-44
Pakistan	1962-1965	1960-1965	49	44
	1968-1971	1965-1970	52	46
Philippines	1969-1971	1965-1975	61	56-58
	1974-1976	1970-1980	60	58-60
Republic of Korea	1971-1975	1970-1975	63	62
Singapore	1956-1958	1955-1960	64	63
	1969-1971	1965-1975	69	68-70
	1979-1981	1975-1985	72	71-72
Sri Lanka	1945-1947	-	44	-
	1952-1954	1950-1955	58	57
	1962-1964	1960-1965	62	63
	1970-1972	1970-1975	65	65
Syrian Arab Republic	1976-1978	1975-1980	62	60
Thailand	1969-1971	1965-1975	59	57-60

a/ World Population Prospects: Estimates and Projections as Assessed in
1984 (United Nations publication, Sales No.: E.86.XIII.3).