Burden of Disease Sri Lanka

Using disability adjusted life years for Sri Lanka

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Sri Lanka

Coimbatore
Chalakudi
Pudukkottai
Madurai
Kerala
Tiruneveli
Trivandrum
Nagercoil
Sri Lanka
Colombo
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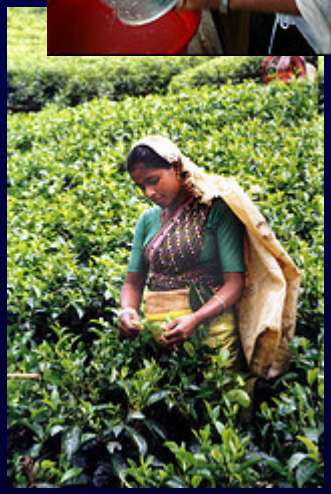
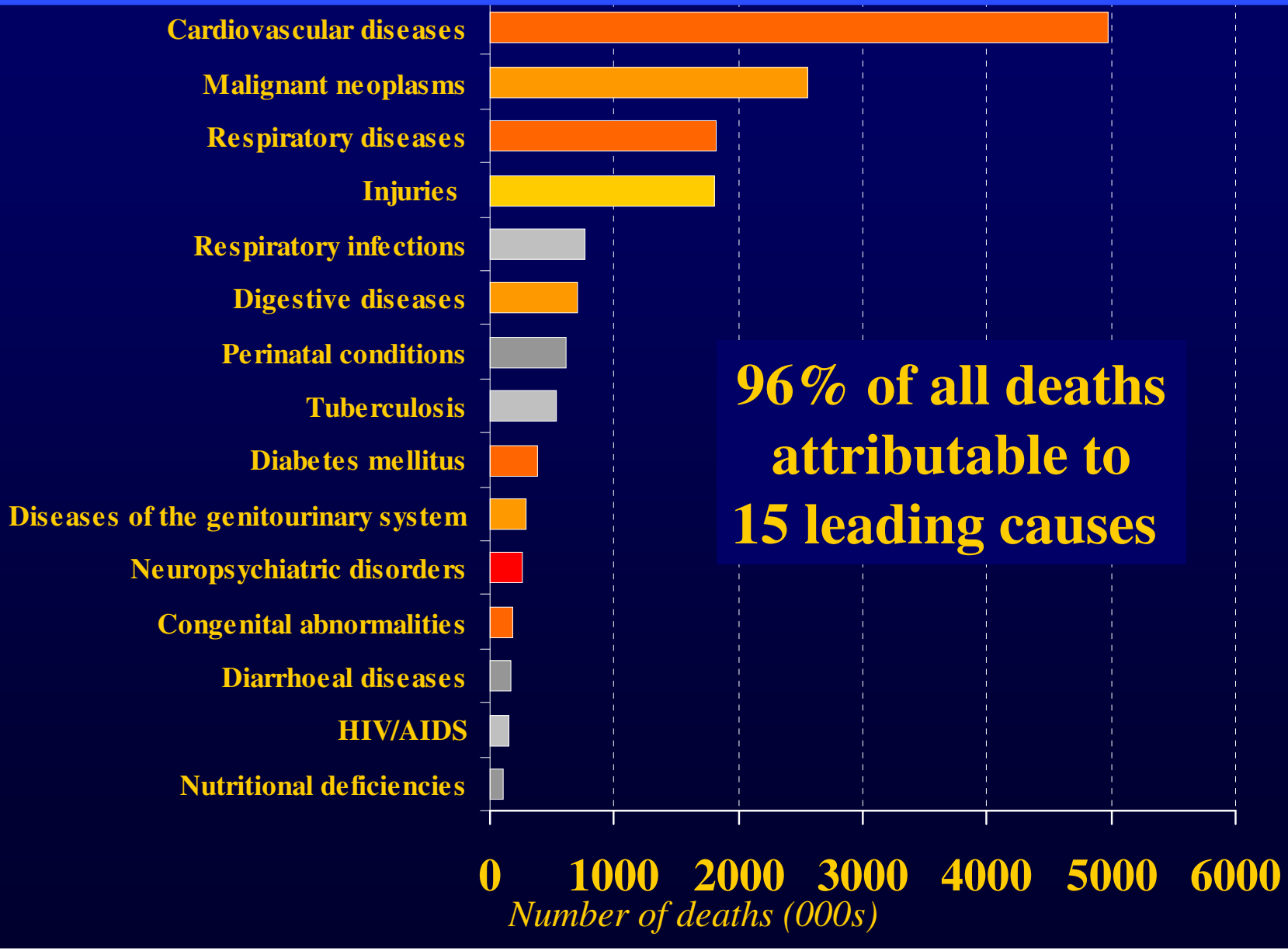


Vital statistics --- Sri Lanka	year	data
Total population	2005	19.668
Crude birth rate (per1000 population	2005	18.83
Crude death rate (per1000 population	2005	6.6
Life expectancy at birth Female Male	2001 to 2006	 76.4 71.7
Infant Mortality rate (per 1000 live births)	2005	11.17
Maternal mortality rate ((per 100,000 live births)	2005	14.3

ICD Code (10th Revision)	Causes of Death	Number of Deaths	Proportionate Mortality	Rate 100 Popu
I20-I25	Ischaemic heart disease	3,762	11.4	:
I26-I51	Pulmonary heart disease and diseases of the pulmonary circulation	2,991	9.1	:
K20-K92	Diseases of the gastrointestinal tract	2,804	8.5	:
C00-D48	Neoplasms [1]	2,753	8.3	:
I60-I69	Cerebrovascular disease	2,549	7.7	:
J20-J22 J40-J98	Diseases of the respiratory system, excluding diseases of the upper respiratory tract	2,408	7.3	:
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings	1,767	5.3	
S00-T19	Traumatic injuries	1,637	5.0	
J12-J18	Pneumonia	1,417	4.3	
A29-A49	Zoonotic and other bacterial diseases	1,379	4.2	
N00-N39	Diseases of the urinary system	1,272	3.8	

DEVELOPING COUNTRIES, DEATHS IN 2001 ATTRIBUTABLE TO 15 LEADING CAUSES



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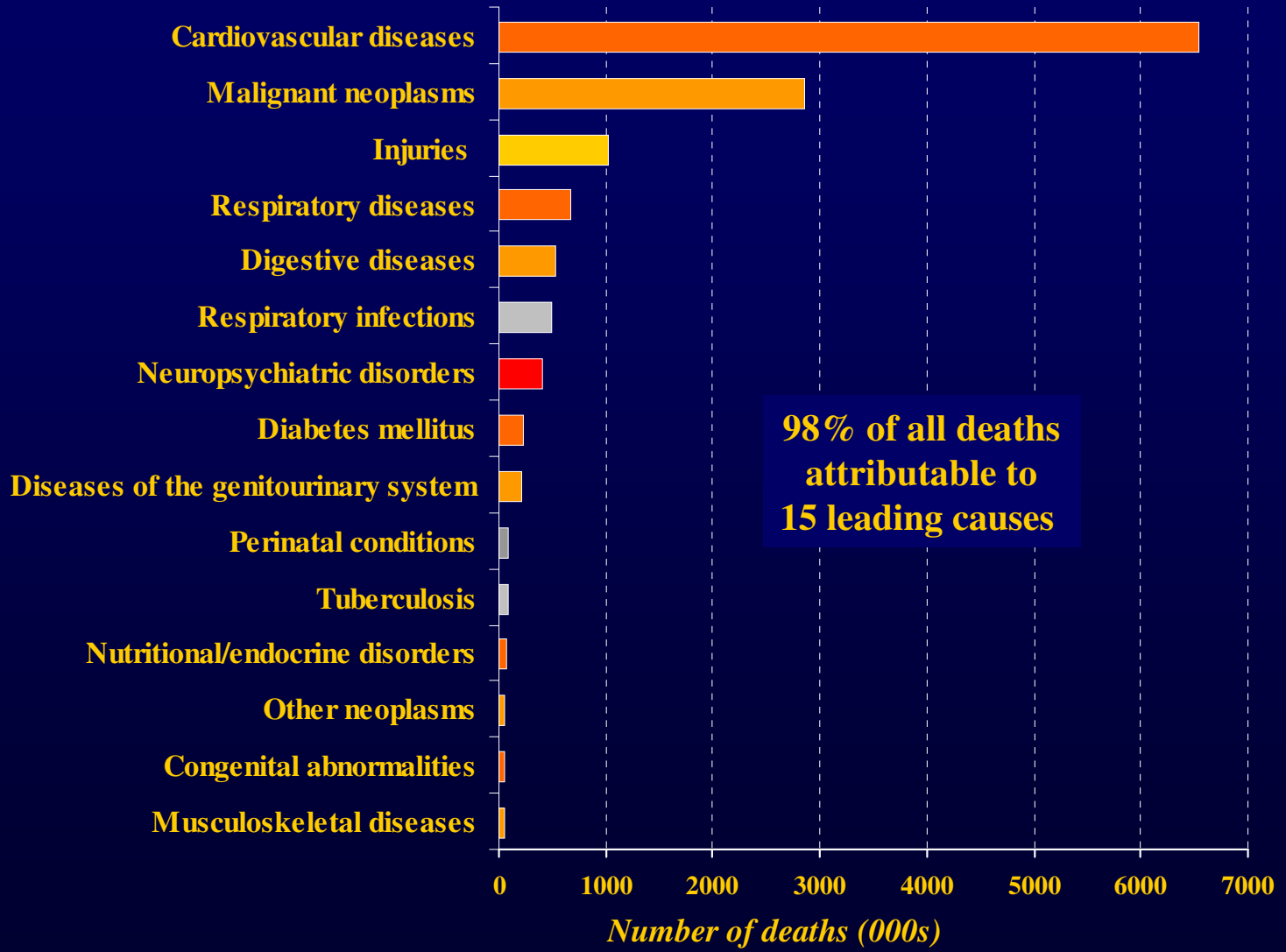

Source: WHR 2002

Rank Order	ICD Code (10th Revision)	Causes of Hospitalization	Number of Cases	Proportionate Morbidity	Rate per 100,000 Population.
1	S00-T19	Traumatic injuries	550,108	16.2	2,797.0
2	J20-J22, J40-J98	Diseases of the respiratory system, excluding diseases of upper respiratory tract	314,532	9.3	1,599.2
3	R00-R99	Symptoms, signs and abnormal clinical and laboratory findings	259,205	7.7	1,317.9
4	K20-K92	Diseases of the gastrointestinal tract	199,680	5.9	1,015.3
5	A80-B34	Viral diseases	170,849	5.0	868.7
6	O10-O46, O48-O75, O81-O99, Z35	Direct and indirect obstetric causes	160,782	4.7	817.5
7	N00-N39	Diseases of the urinary system	135,533	4.0	689.1
8	A00-A09	Intestinal infectious diseases	131,923	3.9	670.7
9	L00-L99	Diseases of the skin and subcutaneous tissue	116,378	3.4	591.7
10	M00-M99	Diseases of the musculoskelital system and connective tissue	115,091	3.4	585.2
11	I10-I15	Hypertensive diseases	90,016	2.7	457.7

DALY

- The disability adjusted life

Factors considered

- Incidence of disease
- Degeree of disability
- Duration of illness
- Age of onset

$$-[DCe\beta a/(\beta+r)2.\{e-(\beta+r)(L)(1+(\beta+r)(L+a)-(1+(\beta+r)a)\}]$$

D is the disability weight (or 1 for premature mortality),

r is the discount rate, (0.03)

C is the age weighting correction constant, (0.1624)

B is the parameter from the age-weighting function, (0.04)

a is the age of onset,

L is the duration of disability or time lost due to premature mortality

Definitions

- **Impairment**
  - Loss or abnormality of structure or function
- **Disability**
  - Restriction or lack of ability to perform an activity in the manner of within the range considered normal for a human being
- **Handicap**
  - Disadvantage results from an impairment or disability that prevents the fulfillment of a normal role
- Note that current definition mixes prior version of disability and handicap (http://www.who.int/icidh/)

Examples

Disease/ Disorder	Impairment	Disability	Handicap
Polio	Paralyzed muscles of the legs	Inability to walk	Unemployed due to belief that person cannot work
Brain injury retardation at birth	Mild mental retardation	Difficulty learning	Social isolation

Disability

- Several definitions over time

- Murray and colleagues there were distinct definitions for impairment, disability, and handicap

  - Handicap is still separate from quality of life

The disability classes and weights used for each class		
	Description	Weight
Class 1	Limited ability to perform at least one of the activity in one of the following areas; recreation, education, procreation or occupation	0.096
Class 2	Limited ability to perform most activities in one of the following areas; recreation, education, procreation or occupation	0.220
Class 3	Limited ability to perform activities two or more of the following areas; recreation, education, procreation or occupation	0.400
Class 4	Limited ability to perform most activities in all of the following areas; recreation, education, procreation or occupation	0.600
Class 5	Needs assistance with activities of daily living such as meal preparation, shopping or housework	0.810
Class 6	Needs assistance with activities of daily living such as eating, personal hygiene or toilet use.	0.910

Discounting

- The value of years lost in future was discounted at 3% annual rate
- How ever life lost at different ages have different value and this was adjusted for age

Burden of disease by DALY	
Disease name	DALY/100,000
Injuries	1436.5
Ischaemic heart disease	1099.6
Asthma	901.9
Diseases of the pulmonary circulation	571.4
Burns	513.7

Burden of disease by DALY

Disease name	Max years lost	Incidence/ 100,000	DALY/10 0,000	% of total	
Injuries	1.000	2486.040	1436.5	14.51	
Ischaemic heart disease	99.000	141.50	1099.6	11.11	
Asthma	99.000	142.80	901.9	9.11	
Diseases of the pulmonary circulation	99.000	45.20	571.4	5.77	
Burns	20.000	61.00	513.7	5.19	
Arthropathies,rheumatism, osteopathies	99.000	132	480.9	4.85	
Alcohol and drug dependence	99.000	40.55	465.6	4.70	
Disorders of thyroid gland	5.000	458.66	278.3	2.90	
Liver,biliary,pancreas disease	99.000	30.10	271.8	2.74	
Cerebrovascular disease	99.000	58.30	257.1	2.59	

55% of BOD in Sri Lanka

injuries,
ischaemic heart disease,
asthma,
disease of the pulmonary circulation
burns

For all other Asian countries the leading causes for BOD were 2000

injuries,

lower respiratory tract infection

cardiovascular diseases

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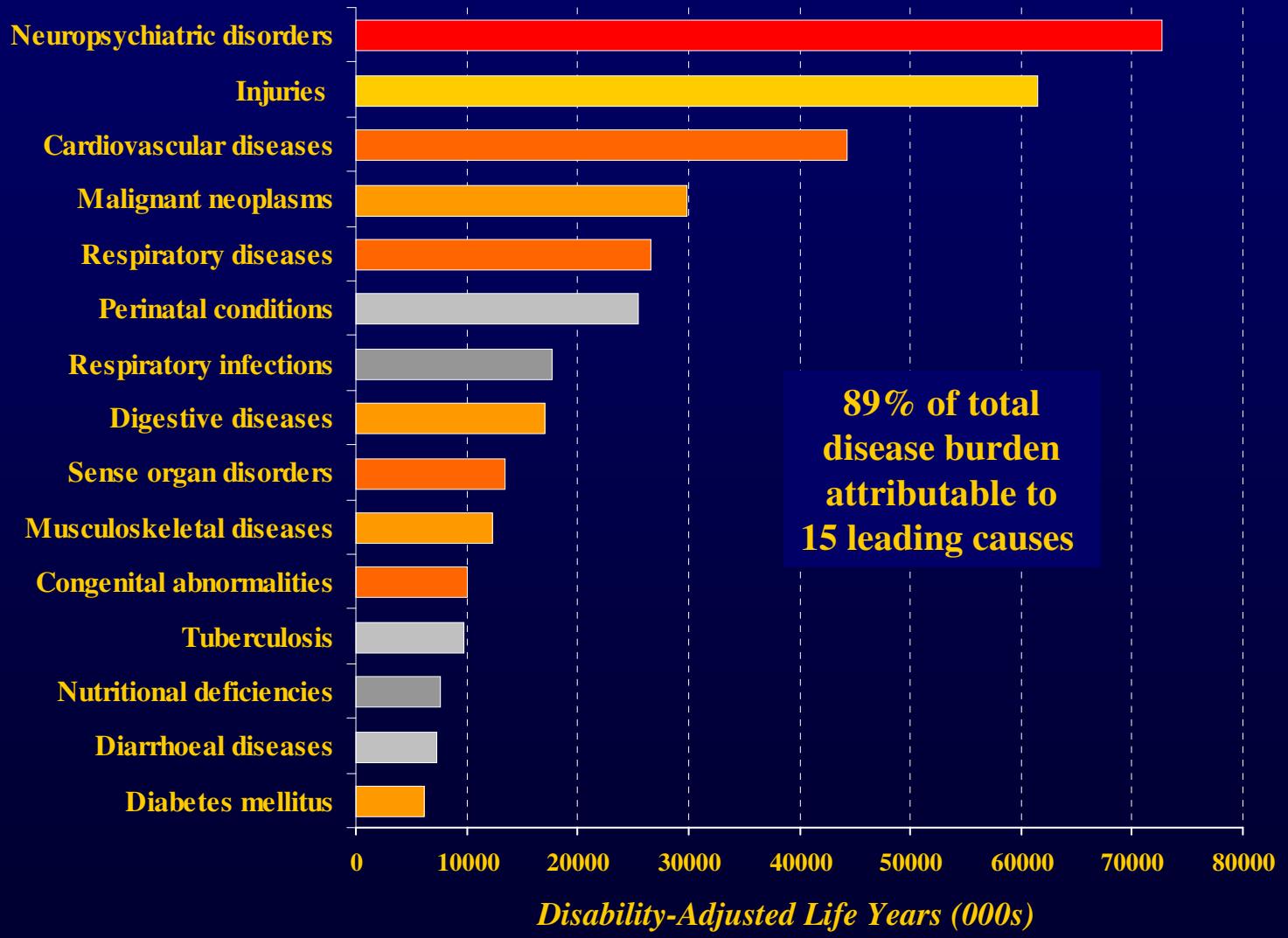

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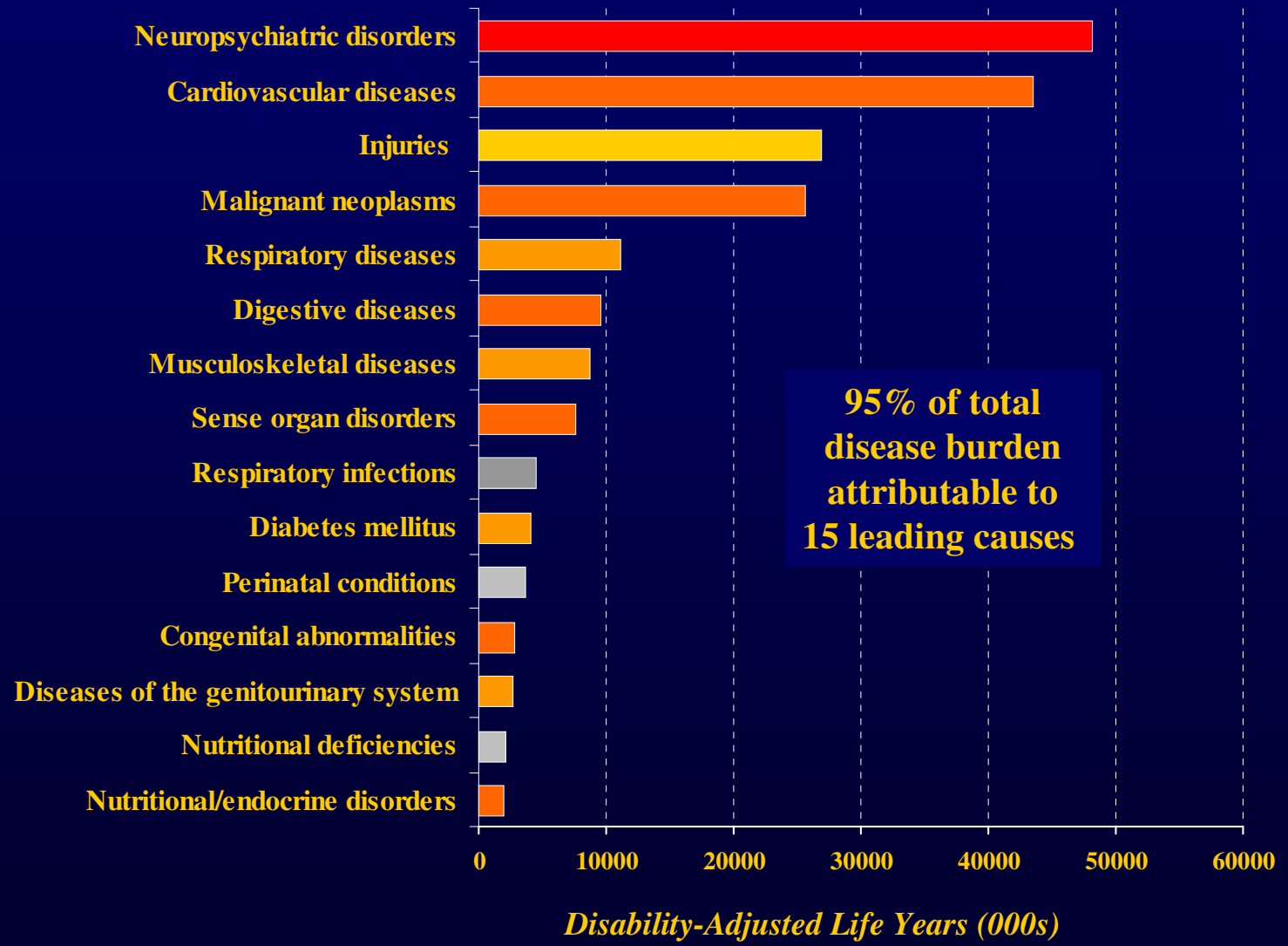


Source: WHR 2002

Limitaions

- Age \ sex specific rates
- No proper statistics
- Multiple illness
- Cutural, social, emotional dimension of burden

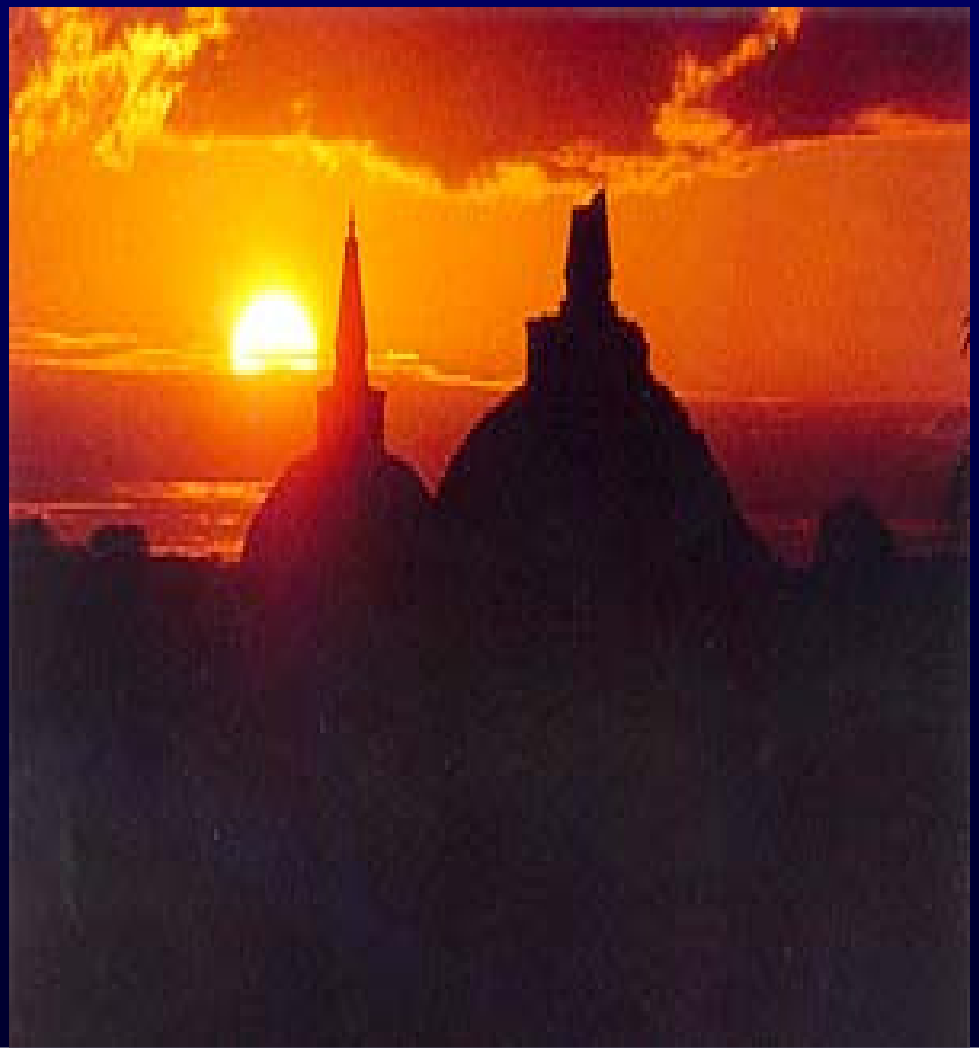
What was the burden before

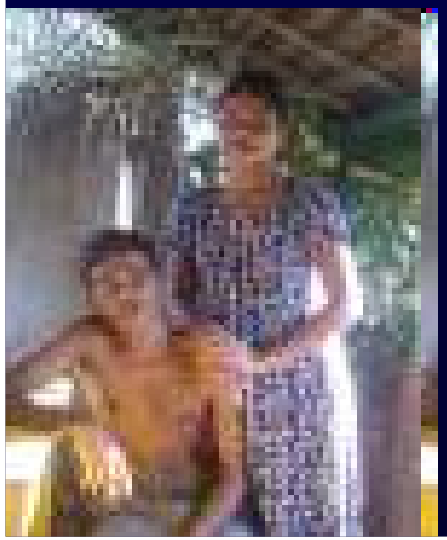
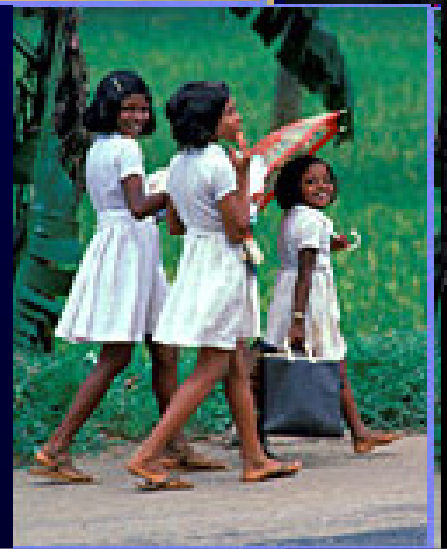
- Malaria
- Infectious diseasesa
- Diarrhoea
- Maternal deaths

Health services Required

- District hospitals with better care
- Better patient follow up
- District nurses
- Social workers , physiotherapists
- Better screening
- Life styly modifications –
- Health preventive \ pomotive progrmmes

Will the burden narrow or flow ?



Spiritual meditation will help reduce stress life style and the burden ?

Thank you for giving me an oppertunity to share my thoughts regarding burden of diseases in Sri Lanka