

Review papers

Re-evaluating mortality statistics: a Sri Lankan case study

Prasanna S. Cooray¹

Abstract

Sri Lanka's health statistics appear to be among the best in South Asia. Mortality figures in particular appear to be far better than those of the other countries in the region. According to these figures the life expectancy of a Sri Lankan is the highest in the region. Based on health (and some other socio-demographic) indicators, an assumption that Sri Lanka's health status is superior to other countries in the region is made by some. This paper looks critically at the accuracy of some of the commonly highlighted health statistics, e.g. Maternal Mortality Ratio (MMR), Infant Mortality Rate (IMR), Crude Death Rate (CDR) and Life Expectancy.

Key words:- Crude Death Rate, Maternal Mortality Ratio, Infant Mortality Rate, Life expectancy, underreporting, sources

Introduction

According to currently available health statistics, Sri Lanka shows a better health status than the other countries in the (South Asian) region and many other developing countries (Table 1). This has led to the widespread assumption that Sri Lanka's health status is superior to that of many developing and developed countries in the world (1).

It is true that according to the official statistics Sri Lanka has the lowest mortality (including infant and maternal mortality) rates and the highest life expectancy in the South Asian region (Table 1). However, inaccuracies in the collection, analysis and presentation of these statistics may create an erroneous impression of the state of the nation's health.

In this paper, a critical look at the accuracy of these statistics is undertaken along with some

speculation as to their implications.

With regards to comparisons, it is also worthwhile raising questions as to whether it is of any value in technical and political terms to compare the health status of developing countries in this way. Jockeying for places in international league tables may not be the best way to assess a nation's health. We know that there are considerable differences with regards to the size, population, geography, climatic conditions, political situation and the culture between the countries in South Asia. In view of such differences comparison of gross statistics may lead to distortion unless there is careful evaluation of the way in which the data is generated and analyzed.

Discussion

Health and health related statistics in Sri Lanka are generated from many sources, for example the Registrar General, the Department of Census and Statistics, the Medical Statistician and the Family Health Bureau of the Ministry of Health. Even the same statistic put out by these sources tends to differ from one another and sometimes quite appreciably.

For example, while the Maternal Mortality Ratio (MMR) in Sri Lanka for 1996 according to the Medical Statistics Unit of the Ministry of Health is 3.9 per 10,000 (hospital) live births (2), the same computed by the Family Health Bureau of the Ministry of Health for that year reads as 6.0 per 10,000 live births (3). The latter includes all maternal deaths notified to the Bureau by institutional and field staff and thus gives a higher, and a more accurate figure than that of the Medical Statistics Unit. Maternal Mortality Ratio for 1996 (the latest available) according to the Registrar General (which is usually regarded internationally as the official statistic of the country) gives a much lesser value than the above two, 2.35 per 10,000 live births (4). Some of the reasons identified for low MMR of the Registrar General's Department include incorrect recording of the cause of death in death certificates and incorrect coding due to insufficient information received (2).

¹Lecturer, Department of Community Medicine, Faculty of Medicine, University of Colombo

Table 1 Some selected geographic, demographic and health indicators for countries in the South Asian region

	Sri Lanka	India	Pakistan	Bangladesh	Nepal	Bhutan	Maldives
Land area (sq.km.)	65,610	3,287,590	803,943	143,998	147,181	47,000	298
Population (Millions) 1998	18.455	982.223	148.166	124.774	22.847	2.004	0.271
Life expectancy at birth (in years) 1998	73	63	64	58	58	61	65
Crude Death Rate (per 1,000) 1998	6	9	8	10	11	10	7
Maternal Mortality Rate (per 100,000 live births) 1980-98	60	410	NA	440	540	380	350
Infant Mortality rate (per 1,000 live births) 1998	17	69	95	79	72	84	62
Under 5 Mortality Rate (1998)	19	105	136	106	100	116	87

NA:- Not Available

Source:- UNICEF, State of World's Children, 2000

However, Reproductive Age Mortality Surveys have shown the actual maternal mortality to be much higher than all these official figures. Such a study has shown that in the Western Province of Sri Lanka, which is the most urban of all provinces of the country, the actual number of maternal deaths is 24% more than that of the Family Health Bureau's figure, which could be considered the more accurate of all official statistics with regards to MMR (5).

According to the Registrar General the Infant Mortality Rate (IMR) for 1996 is 17.3 per 1,000 live births (4). IMR by districts for that year ranged from 1.4 (Trincomalee) to 27.5 (Anuradhapura) per 1,000 live births. Fifteen out of 25 districts in the country recorded IMRs that were lower than the national figure (2). Interestingly, most of the

districts that report low IMRs are the ones that are directly affected by the civil war and in which health services are badly disrupted. Except for Jaffna (17.5) all the other districts in the war stricken North-East Province of the country recorded IMRs lower than the national figure, and some as low as 1.4 (Trincomalee), 5.4 (Ampara), 7.2 (Mannar), 7.8 (Mullativu) and 8.4 (Vavuniya) (4). Poor registration of infant deaths is well known as a reason for low IMR (6,7). Studies on completeness of death registration in respect of infant deaths have shown that 64% of the infant deaths in Kopay, Jaffna in 1982-83 (6), 90.9% in Jaffna district in 1985 and 71.4% in Polonnaruwa district in 1994 have not been registered (7). Since the IMR of a country or region is considered a good indicator of the socio-economic status of that place (6), it is

timely that we look critically at these statistics with regard to the local situation. The key question is whether they serve as indicators conventionally regarded to reflect high socio-economic status, effective health services etc. or merely as a reflection of poor registration that takes place in a country.

With the decline in Infant Mortality Rate in some countries, the Peri-natal Mortality Rate has assumed greater significance as a yardstick of obstetric and paediatric care before and around the time of birth (8). Unfortunately this data is not collected in Sri Lanka. The known and possible deficiencies attached to the Infant Mortality Rate has led the Under Five Mortality Rate of children being increasingly used as an indicator of child survival and therefore is a more useful indicator of a country's health situation. In this respect Sri Lanka is ranked 136 out of 189 countries in the world, (rank 1 for worst and 189 for the best) (9). However, under-reporting of deaths in this age group is also apparent. Under-reporting of deaths among preschool aged children (1 to 4 years) has been 66% in Kopay, Jaffna (6), and 55.6% in the Polonnaruwa district (7).

Low Crude Death Rate and High Life Expectancy are two other statistics that Sri Lanka sets great store by. The Crude Death Rate for 1991-95 stands at 5.6 per 1000 population and the projected Life Expectancy for 1995-2000 are 73.5 years (with 71.1 years for a male and 75.8 years for a female) (10). These statistics indicate in no uncertain terms that the average Sri Lankan male and female live much longer than their counterparts in the region and even up to the same age that people in some developed countries live. However, studies done on completeness of death registration in various parts of the country have revealed systematic under registration. Again the rates of under registration of deaths given by government sources appear to be quite different to that found by individuals. While the surveys done by the Department of Census and Statistics on completeness of births and death registration in Sri Lanka has reported over 94% death registrations in 1967 and 1981 (11,12), the figures revealed in studies done by individual researchers give much lower rates. While such a study done in Jaffna in 1985 reported only 46.3% registration rate for deaths (13), another done in Polonnaruwa district in 1994 reported 72.5% registration (7). This discrepancy would suggest that although registrations of deaths and births are compulsory by law, it is not happening to the degree expected.

At the same time there are many thousands of Sri Lankans, particularly the youth, who are categorized as "disappeared". This non-status may be enforced or voluntary and is due to the various episodes of violence and displacements that have occurred, especially in the last two decades. The "disappeared" include victims of the ongoing civil war in the North-East of Sri Lanka and the civil unrest that took place in the South of Sri Lanka in the latter part of the 1980s. Exact figures for the dead and "disappeared" from the two major factions involved in the civil war, that is, the Sri Lankan security forces and Liberation Tigers of Tamil Eelam (LTTE) are not known to the public. However, in the armed conflict in the North-East of the country it is estimated that over 10,000 civilians have died between 1987 and 1990 alone (14). Conservative estimates put the number of deaths during the civil unrest in the South in the late 1980s to be over 40,000 (14). The three Presidential Commissions of Inquiry into the Involuntary Removal of Persons (PCIIRP), which started work in 1995 to investigate past disappearances, reported 16,742 such cases from various parts of the country (including North-East) from 1 January 1988 to August 1997. Even then there were at least 6,000 more cases, especially from some the Northern and Eastern parts of the country that were submitted to the commissions but remained to be investigated (15).

Subsequently with the enactment of the Registration of Deaths (Temporary Provisional) Act No.2 of 1995 aimed to register deaths in order to issue death certificates and award compensation to the immediate family members of the disappeared persons, some of these disappearances were later included in the national death statistics. Effects of this on national CDR figures were evident in the immediate years after the enactment. In 1995 and 1996 there was a definite upward trend in CDR as many disappearances were registered as dead (Table 2). However, we should bear in mind that these

Table 2
Crude Death Rate in Sri Lanka, 1994-98

	1994	1995	1996	1997	1998
No. Of registered deaths	100,394	104,707	122,161	113,078	11,400
CDR (Per 1000)	5.6	5.8	6.7	6.1	5.9

Source:- Department of Census and Statistics, Sri Lanka

disappearances were only the ones which were reported to the above Commissions and for which death could be established without any doubt. Considering the large number of lives that continue to be lost as a direct consequence of the war in the country, it is timely that we begin to look at the possible (negative) effect of this factor on the present level of CDR and Life Expectancy that we claim to have achieved.

Conclusion On the basis of vital statistics, mortality statistics for Sri Lanka appear to be the best in the region. However, many sources generate these statistics, and their figures tend to differ from one to the other.

Surveys done on completeness of registration of deaths show under-reporting. A continuing war for the past two decades in the North-East of the country results in many deaths, some of which go unreported. Civil disturbances that have occurred in the other parts of the country from time to time too have lead to disappearances of persons and exact numbers of these are not known. Therefore, true mortality statistics in the country are likely to be in excess of what is formally recorded. If these deficiencies are not taken into consideration, there is a danger of creating an over inflated picture of the true health of the nation, particularly in relation to other developing countries.

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