

COMMENTARY

Assessing Cancer Burden in Rural India : An Analysis by Cause of Death Statistics

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Abstract

India lacks nationwide cancer registration and systematic death registration. Gaining insight into the magnitude of the cancer problem in India depends mainly on 14 population based cancer registries, which provide relatively accurate statistics although the area and population cover by these registries is minimal at about 7% (20% Urban and 1 % Rural). With estimation of cancer burden from other sources, paucity of adequate data on the one hand and the complex pathogenesis of disease on other makes for complexity in dealing with rural populations. However, surveys of cause of death do reveal some interesting patterns that may very well be of use for international comparisons. In this paper an attempt has been made to estimate the cancer burden in rural India using the information available from surveys of cause of death for rural populations conducted by the Government of India.

Key Words: Cancer - survey - cause of death - rural and urban

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Introduction

Knowing the burden of cancer and its variation in pattern between the regions is important for cancer control. In India, the National Cancer Registry Program (NCRP) was established to collect data on incidence and patterns of cancer through population based cancer registries in 1982. Until recent years NCRP reported cancer surveillance from five urban registries at Bangalore, Bhopal, Chennai, Delhi and Mumbai and only one rural registry at Barshi (National Cancer Registry Program, 2001). These estimates are on the basis of defined populations and there is no adequate coverage from rural India. In order to estimate cancer burden from other sources, paucity of adequate data on the one hand and the complex pathogenesis of disease on the other make for complexity in rural populations. In this vast country, major death registration sources are neither reliable nor complete; a large percentage of cases go unregistered and out of registered cases only 10% of deaths are medically certified. However, some sources like Surveys of Causes of Death do reveal interesting patterns that may very well be useful for international comparisons. Table 1 shows variation in percentages of deaths from different causes according to the (SCD) survey of cause of death in rural residents compared to the medically certified cause of death (MCCD) for urban residents (Government of India, 1994;

Table 1. Comparison of Percentage Distributions of Deaths Recorded in the Survey of Causes of Death (rural) and Medical Certification of Causes of Death in India (Urban), 1994, According to the ICD Classification

Disease Type	SCD (rural)	MCCD (Urban)
Infectious and parasitic	16.4	16.9
Of blood and blood forming organs	3.0	2.1
Neoplasms	3.9	3.7
Respiratory system (*)	15.1	7.7
Digestive system	1.6	4.4
Circulatory system (*)	8.2	21.3
Nervous system	5.0	3.7
Genitourinary system	0.6	1.5
Mental disorders	0.4	0.2
Accident and injury (*)	6.8	11.4
Prenatal period	9.0	9.3
Metabolic	0.8	3.4
Pregnancy related	0.9	2.1
Congenital malformations	0.3	0.5
Symptoms, signs ill defined (*)	24.3	12.8
Other medically certified deaths	4.0	-

Registrar General of India, RGI 1966-94). Although there are noteworthy differences for a few causes, percentage deaths from neoplasms are comparable, so whatever information is available in SCD thus may be reliable and hence this paper aims to estimate the cancer burden in rural

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Table 2. Percentage Distribution and Rank of Cancer During 1971-91

Other causes			Other causes			Other causes		
symptoms	1971	Rank	symptoms	1981	Rank	symptoms	1991	Rank
a.Cancer	2.12	9	a.Cancer	2.48	9	a. Cancer	3.89	6
b.Diseases-urinary tract	0.46		b.Tetanus	1.75		b. Jaundice	1.29	
c.Hypertension	0.45		c.Cirrhosis-liver	0.87		c. NA	—	

Table 3. Age-specific Cancer Mortality Rates for Selected Status of India,1995(per 100000)

State(s)	0-4	5-14	15-44	45-59	60+	All Ages
All India	2	2	18	58	238	32
Andhra Pradesh	2	1	14	47	216	27
Gujarath	0	0	36	87	508	61
Harayana	6	3	10	60	351	37
Karnataka	0	0	23	129	371	50
Kerala	0	5	13	141	553	62
Maharashtra	4	4	14	55	185	27
Punjab	4	2	11	25	224	25
Rajasthan	0	3	8	22	277	26
TamilNadu	0	0	16	43	233	28

India. The data were mainly extracted from the “Survey of Causes of Death (rural)” annual reports of Registrar General of India (RGI) between 1966-95.

For age-standard mortality rates, state wide populations and their age distributions were taken from the Census and Sample Registration Systems (SRS), respectively. Age standard mortality rates (ASMR) were calculated using India’s population distribution as a standard. This paper only presents estimates for the selected nine major states where data are available as a first endeavor to use cause of death data in an applied way. No attempt was made to consider recent redistributions of state boundaries for comparison purposes.

The percentage distribution of cancer and its rank during 1971-91, in these two decades the ranks has been progressed from 9 to 6 and the percentage distribution has increased two-fold which clearly indicates that cancers in rural India are on the rise. It is also clear that cancer burden is more among the elderly as shown by highest mortality in Kerala, where one-tenth of the population is aged above 60 years. These ASMR shown above national average in the rural population of Gujarath, Karnataka, Haryana followed by Rajasthan, Tamilnadu and Punjab. Cancer burden increases with age; the onset of cancer is high in Karnataka, Kerala and Gujarat before age 60 years. In general cancer mortality jumps as they cross 60 years, which divulges the progression of age as a strongest risk factor.

Affluence, progressive aging of population (older people), upward socio-economic conditions and changed life styles may cause increase in cancer. The other possible reasons might increase in life expectancy, more accurate medical diagnosis, tobacco use, pan masala and alcohol consumption, air and water pollution and excessive use of pesticides. India ranks one among top five countries in tobacco consumption, as smoking cigarette consumption per adult is one of the highest in India, at 236 per adult in 1990-

92, much higher than the world average (AVRamana, 2001). Tobacco control measures are important to control specific cancers, early detection of cervical and breast cancer should be encouraged through health education, promoting early diagnosis. Cost effective procedures like visual inspection with acetic acid (VIA) and physical examination of the breast will be useful tools in this regard (Sankaranarayanan, 2000).

From the population based rural registries the crude incidence rates are 38.1 for male and 48.5 for female in Barshi rural registry (Maharashtra) during 1990-96 and these rates are 89.2 and 72.2 for male and female respectively for Karunagappally rural cancer registry (Kerala) during 1990-96 (National Cancer Registry Program, 2001; Cancer Incidence in five continents, 2002). The age adjusted mortality rates are available for Barshi, among male is 46.2 and for female it is 57.7. According to SCD, the rate is 27 for rural Maharashtra, which clearly marks that a major proportion of cancer deaths are not registered. However, this may help us to understand the amount of under registration and provide an approximate for other states where there is no information for registries. Though there is minor concern about adequate quality of the data, it cannot be ignored that the findings of this attempt will help the health planners to identify the dominance intensity and variations of this disease.

From January 1999, the survey of cause of death was integrated with SRS (Registrar General of India, 1999). It is understood that the SCD-Rural guidelines have been extended to the SRS-COD components par with WHO cause of death report format, which is based on verbal autopsy (VA). The approach of structured questionnaires and lack of the symptoms record (SCD-Rural Form-7) has been a major departure from the SCD-Rural design. As a major implication, steps should be taken to improve detection and treatment of cancer at the field level and to examine the feasibility of area specific programs to combat cancer.

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