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## Review

### Reviewing disease burden among rural Indian women

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#### Abstract:

The disease burden of rural Indian women is reviewed by utilizing the data from the ' Survey of Causes of Death (rural)' annual reports of Registrar General of India supplemented with National family health survey (NFHS-II). The review indicates that bronchitis and asthma are the leading causes while prematurity and heart attacks are second and third respectively. Most of the maternal deaths are concentrated in the age group 20-24 and bleeding is the main cause of maternal death. Tuberculosis of the lungs, malaria and burns are also important causes of death in the early reproductive ages. Rate of suicide, burn, and anaemia diminishes with age. Though nationwide health plans have succeeded in reducing the fatality of women' s diseases to a certain extent, there is however, a great need for improved and effective area-specific health programs to achieve the desired goals.

**Key words:** Disease burden, women, reproductive age, maternal mortality

#### Introduction:

India has achieved satisfactory enhancement in social indicators such as life expectancy, infant mortality, child mortality and literacy levels. However, women in rural areas are largely at disadvantage as infectious diseases, malnutrition and maternal problems still account for most of the disease burden. India is one of the few countries where

maternal mortality rates in rural areas are among the world' s highest i.e. 570 per 100000 women.(1) Women in rural India live in lower status (except in a few states) and experience more episodes of illness than males and also are less likely to access health care facilities before the illness is well advanced. (2,3) This situation is directly linked to poverty; a vast majority

of poor women caught in this vicious circle are the young mothers in the reproductive age, who are deprived of their basic right to be healthy.(4)

Precise studies are not available to estimate reproductive health related disease burden in India to help proper area-specific public health interventions. Reliable data on mortality and morbidity during pregnancy are scarce, and for female morbidity in general, they are almost nonexistent in rural areas (5) Paucity of adequate data makes the understandings more complex, for a knowledge of the causes of death that may reveal the sickness load. Although major registration sources are reliable and complete, a good percentage of cases will go unregistered and only 10% of deaths are medically certified. But some sources like Survey of Causes of Death (SCD) do reveal interesting findings that may very well be true.(6) Keeping these in view, this review will discuss about the disease burden with focus on reproductive mortality and morbidity, using the ' cause of death data' in an intricate way.

**Method:**

Data have been abstracted from the Survey of Causes of Death (rural) (SCD),

Registrar General of India annual reports.(7) For prevalence calculations, state wise population and their age distributions are borrowed from Census and Sample Registration Systems (SRS) respectively. In spite of a few limitations like improper medical certification, high proportion of recorded cause of death as 'senility' and reclassification of disease groups overtime, SCD is by far the most reliable source of mortality statistics in rural areas of India; previously this data was analysed for accident and violence related mortality for international comparisons.(6) SCD data is steadily improving with time and one of the most important improvements is the classification of SCD data as par ICD-10 and mentioning of the list of symptoms for each cause. Age-specific death rates were calculated with the help of the projected census population of reference period (1991). To supplement the discussions the results from the National Family Health Survey (8) was used. The analysis is mainly critical and explanatory in nature. Rank distribution of male and female population and urban rural health morbidity patterns was reviewed. Special emphasis was given to highlight main cause of maternal deaths and female deaths in reproductive ages.

**Results:**

Leading causes of death among rural males and females is shown in Table-1. (Ref-5)

Causes of mortality	As a per cent of all deaths (%)		Ranking	
	Female	Male	Female	Male
Bronchitis and asthma	7.7	9.6	1	1
Prematurity	5.1	4.7	2	4
Heart attack	4.9	7.3	3	2
Pneumonia	4.7	4.4	4	5
Cancer	4.2	3.6	5	7
Tuberculosis of lungs	4.2	6.4	6	3
Anemia	3.6	2.5	7	8
Paralysis	3.4	3.8	8	6
Non classifiable	2.5	—	9	—
Gastroenteritis	2.3	—	10	—
Vehicular accidents	—	2.9	—	9
Suicides	—	2.1	—	—

Bronchitis and asthma are recorded as the leading cause while and prematurity (as classified) and heart attacks are second and third respectively. Pneumonia, cancer and tuberculosis of the lungs are ranked fourth, fifth and sixth among causes of female deaths in rural India while vehicular accidents and suicide are not

among leading causes for females. Table-2 (Source Ref: 5) shows that the urban women reported higher levels of morbidity and showed the symptoms of high blood pressure and heart ailments which does not feature among conditions reported by rural women.

**Table 2. Leading causes of morbidity in rural and urban women, India, 1993**

Rank	Rural-Females	Urban-Females
1	Non-specific fever	Non-specific fever
2	Indigestion, gas, acidity, constipation	Respiratory infections
3	Serious communicable diseases	Serious communicable diseases
4	Respiratory infections	Indigestion, gas, acidity, constipation hear
5	Headache/bodyache/ backache	High blood pressure, heart ailments and paralysis
6	Other morbidities	Other morbidities
7	Eye/ear problems	Headache/bodyache/ backache
8	Diarrhoeal diseases	Diarrhoeal diseases
9	Weakness, dizziness, anaemia	Eye/ear problems
10	Breathing problems, asthma	Weakness, dizziness, anaemia

Female population in reproductive ages draw more attention as most of the health intervention programmes are undertaken in this age group, so the review gives special emphasis in table 3 and 4 to the women in the reproductive age (14-44

years). Table-3 presents the age-wise prevalence of maternal cause of death. Among teenage mothers (15-19) death due to abortion is highest, followed by bleeding of pregnancy, anaemia and toxemia.

**Table 3. Age distribution of prevalence (per 100,000 rural women) of major causes has maternal deaths in rural India, 1994 (Ref. 7)**

Causes of maternal death	Age Group (years)					
	15-19	20-24	25-29	30-34	35-39	40-44
Bleeding of pregnancy	11.7	19.6	16.1	12.0	9.9	3.5
Anemia	10.1	19.0	13.0	9.7	5.4	1.1
Abortion	16.8	12.4	9.7	3.0	0.0	1.1
Toxemia	10.1	6.5	11.9	11.3	0.9	0.0
Puerperal sepsis	1.6	9.0	6.5	5.3	7.2	0.0
Malposition of child	0.2	3.3	7.1	3.8	2.7	0.0
Not classifiable	11.7	12.4	9.7	7.5	3.6	0.0

In the rest of the age groups bleeding is the main cause of maternal death and its prevalence gradually decreases with age. Most of the maternal deaths are concentrated in age 20-24. It is quite interesting to note that (Table 4) suicide is the main cause of female death in teenage

and 20 to 24 ages. Tuberculosis of the lungs, malaria and burns are also important causes of death in the early reproductive ages. Rates of suicide, burn, anaemia and acute abdomen diminish with age.

**Table 4. Prevalence rate (per 100,000 rural women) of main causes of female death in reproductive ages, 1994 (Ref. 7)**

Causes of female deaths	Age Group (years)					
	15-19	20-24	25-29	30-34	35-39	40-44
Tuberculosis of lung	46.9	31.2	49.1	42.0	62.0	53.8
Suicide	87.0	46.3	27.7	25.5	13.4	3.5
Heart attack	28.5	22.9	29.7	20.3	42.2	12.6
Burns	33.7	38.5	30.9	21.1	18.0	9.9
Cancer	14.9	10.7	13.4	9.9	21.0	28.9
Anemia	18.5	18.7	16.1	16.5	15.3	10.7
Bronchitis and asthma	10.0	13.1	9.03	9.7	22.4	31.4
Malaria	41.9	16.3	8.37	12.0	16.1	12.6
Gastro enteritis	15.2	20.9	10.3	7.2	16.1	21.5
Acute abdomen	25.1	10.4	19.3	9.0	11.7	10.7

**Discussion:**

While reviewing the burden estimates, it should be kept in mind that subgroups under different causes of death category are mixed up and change over a period of time. The recent data on morbidity and mortality required a separate analysis due to the impact of HIV/AIDS (after year 1994) and reclassification of state boundaries. Only the data available before 1995 was considered for this analysis with an aim to sketch a picture on the level of mortality and morbidity among rural women.

Tuberculosis of the lung and pneumonia account for the heavy toll among the communicable diseases. About one-third of rural women use wood as fuel for cooking; that coupled with poor ventilation and bad housing conditions may be the cause for prevalence of asthma- bronchitis.(9) The prevalence of tuberculosis, one of the major killers in rural areas, is 130.8 per 100,000 in India, while the world average is only 59.7.(10) Reduction of tuberculosis has a negative relation with poverty. It was estimated that 52.2% of population in rural India are below international poverty line (that is, below \$1per day) in 1992 (11), which is the root cause of ignorance, poor sanitation, malnutrition and irregular treatment, the last being also due to high cost of drugs.(12) A large scale analysis from National Family Health Survey clearly shows that among the women aged 30 years and older, 53% of the active

tuberculosis cases are related to cooking smoke and suggests that the use of biomass fuel for cooking substantially increases the risk of tuberculosis in India.(13)

Affluence, progressive aging of the population (more older people), upward socio-economic conditions and changed life styles lead to an increase in non-communicable diseases. It has been projected that while the infectious diseases would decline from 56% in 1999 to 25% by 2020, non-communicable diseases would increase from 29% in 1990 to over 57% in 2020.(14) The most remarkable increase among the non-communicable diseases are observed in heart attacks, cancer and paralysis. The possible reasons for the rising trend of cancer may be increase in life expectancy, more accurate medical diagnosis, rise in the use of tobacco, pan masala and alcohol, air and water pollution and excessive use of pesticides. India is one among the top few countries in tobacco consumption; non-smoking tobacco consumption per adult is very high among women (15) in India.

Deaths due to gastro enteritis have seen a reduction, but diarrhoea remains one of the major killers of young girls and a formidable challenge to the health system as the suggested measures of preventing diarrhoea are greeted with skepticism and a certain disinterest in India.(16) Respiratory infections and fever, as well

as polluted drinking water, all of which accompany monsoons, is believed to be conducive to digestive disorders in rural areas.

The proportion of deaths due to suicide is a point to ponder; illness and family problems together accounting for 40% of total suicidal deaths, other factors being love affairs, poverty, failure in exams and dowry disputes according to the National Crime Records (1996). Many of the women choose to die by hanging, self-immolation, drowning, by consuming sleeping pills and poisons.(17) More gender related issues are emerging in the polity recently: empowerment of women and mobilization of men to change their attitudes towards women, family and community interventions. Small enterprise efforts are working on these issues; help lines; call centers and action teams have also been tried in a few states to prevent the suicides through counseling. But these interventions are yet to reach rural areas.

Of all the social indicators, the largest gap between the rich and poor nations is seen in maternal mortality levels. Developed countries have achieved a Maternal Mortality Ratio (MMR) as low as 10, whereas India reports more than 500 deaths per 100000 women. Nine in ten maternal deaths occur in developing countries and India shares one fourth of such deaths worldwide. MMR is also an indicator for general socio-economic status, nutrition level as well as maternal health care in the community. Estimation of MMR requires information on the cause of death as well as the status of pregnancy at the time of death. In the absence of complete and reliable vital registration and cause-of-death data, this estimation in India is less accurate.

More than half of women suffer from anemia, caused by malaria, hookworm infestation and/or from inadequate intake of iron and folic acid. The anemia control program that provides iron and folic acid tablets to pregnant women is a key component of antenatal care, but the

scheme has met several supply and demand problems at the field level as only 50.5% of women have been able to receive them. Only one-fourth of the deliveries take place in the health institutions;(18) delivery at home increases the risk of infections and maternal deaths. About three million marriages involve girls in the 15-19 years age group. Girls bearing their first baby in teenage are at obstetric risk and subsequently of low birth weight babies and perinatal complications. The upsurge of female deaths in the age group of 15-19 years bears testimony to the high mortality rate of women.(19)

In summary, not only biological factors but social and economic status, cultural, environmental, familial, occupational and political factors affect women's health and any intervention should address these problems.

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