Health, Morbidity, And Mortality Working Group
European Association of Population Studies

Association of Major Chronic Non-Communicable Diseases and Life Expectancy In India by gender,2017-18

Jhumki Kundu (PhD Scholar)
International Institute For Population Sciences, Mumbai, India

Background

- A persistent and firmly held belief that women's health concerns are solely determined by their reproductive capacity (Bustreo et al.,2012). However, two-thirds of all fatalities and impairments in women are caused by chronic diseases, violence, and other types of injuries.
- NCDs, particularly CVDs, have historically been seen as diseases disproportionately affecting men (Doyal,1995; Freedman and Maine,1993; Salomon et al.,2012).
- Chronic obstructive pulmonary disease (COPD) is also believed to primarily affect men and this misconception may lead to an increased likelihood of underdiagnosis in women (Chapman, et al.,2001; Ntritsos et al.,2018).
- In order to demonstrate how NCDs affect life expectancy across genders, it is crucial and necessary to track their effects on potential gains in life expectancy (**PGLE**). However, there is hardly any study in India that estimates the impacts of NCDs on gain in life expectancy by gender.

Objective

- The objective of this study is to estimate potential life expectancy gains from eliminating deaths due to CVD, Cancer, and COPD by gender in India,2017-18

Data Sources

- Medical Certification of Cause of Death Report(MCCD),2018
- Population Projections reports from the RGI and the Census Commissioner of India
- Sample Registration System (SRS,2018) Report

Data Evaluation

- The MCCD report is based on hospital deaths (public or private) that have received medical certification and that too mostly from urban areas, so at the national level, the reliability and quality of this information is a major issue.
- Although MCCD information has some limitations at all India levels, it is the only regularly available data source providing consistent annual information on the cause of death by age and sex which can help in evidence-based monitoring of India's progress towards preventing avoidable mortality since the 1970s (Radkar, Kanitkar, and Talwalkar,2010; Koli, Goli, and Doshi,2014).
- Therefore, prior to the main analysis, we present a robust statistical assessment of MCCD information providing the patterns of cause of death by age and gender in India (2017-18).

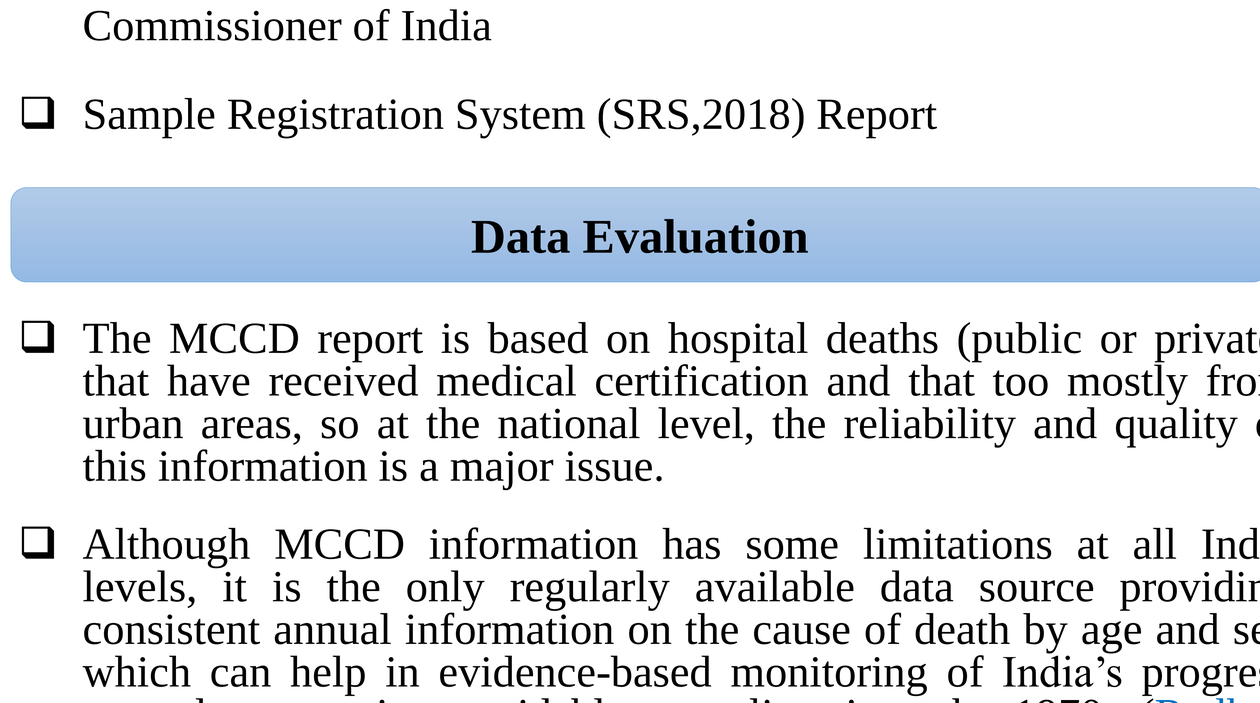

Figure 1: Comparison between GBD and MCCD estimated number of deaths per 100000 population by major Non-communicable diseases (CVD, Cancer & COPD) in India,2017-18

Methodology

- Multiple decrement life tables were constructed to estimate the Potential Gain in life expectancy (PGLE).
- PGLE represents years of life lost resulting from a certain disease in an age group. So, life expectancy could be extended for these years. The greater the impact of the disease on life expectancy, the higher the PGLE.
- The independence of **competing risks** was assumed for the construction of multiple decrement life tables.

Findings

Table: Life expectancy of the Indian population,2017-18

Age group	Life expectancy (2017-18)		
	Total	Men	Women
0-1	69.29	68.43	71.23
1 -5	70.90	69.97	72.96
5 -10	67.32	66.24	69.27
10 -15	62.48	61.37	64.47
15-20	57.60	56.52	59.63
20-25	52.87	51.73	54.83
25-30	48.23	47.03	50.06
30-35	43.59	42.39	45.30
35-40	39.07	37.81	40.58
40-45	34.56	33.32	35.88
45-50	30.16	28.99	31.34
50-55	25.97	24.79	26.87
55-60	22.06	20.77	22.70
60-65	18.34	17.23	18.88
65-70	15.20	13.95	15.30
70-75	12.39	11.14	12.17
75-80	10.01	8.75	9.47
80-85	7.61	6.43	7.01
85+	5.62	4.49	5.08

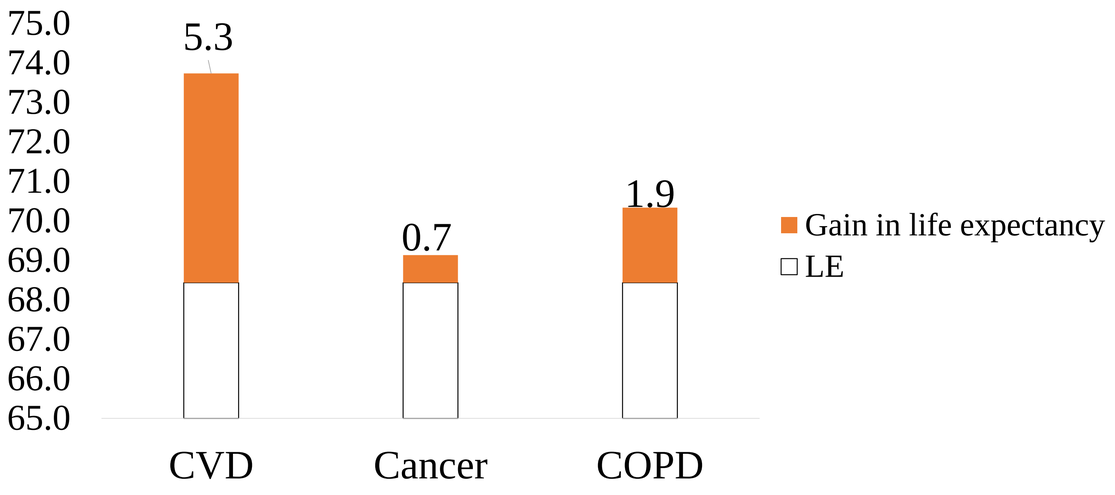

Figure 2: Gain in life expectancy after elimination of deaths due to CVD, Cancer & COPD at birth among Men in India,2017-18

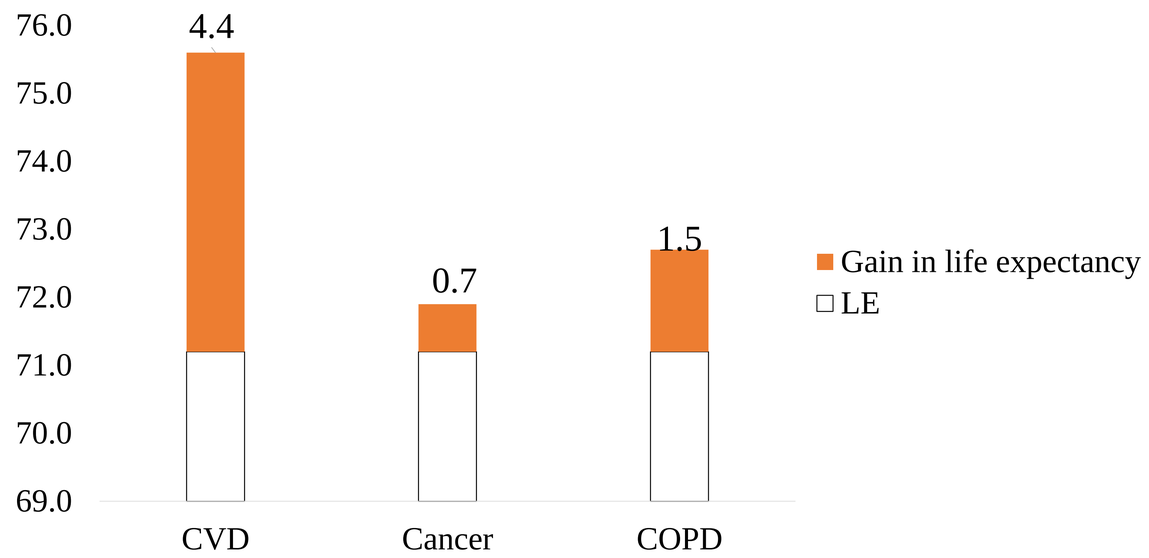

Figure 3: Gain in life expectancy after elimination of deaths due to CVD, Cancer & COPD at birth among women in India,2017-18

Conclusion

This study suggests the imperative of adopting more comprehensive research and healthcare strategies for non-communicable diseases (NCDs), taking into account the distinct health requirements of both men and women.