

Study of life expectancy in urban Pondicherry

Sir,

Life expectancy at birth is one of the indicators of the health status of a community in addition to being a proxy measure for several dimensions like adequate nutrition, good health, and education. It is used in the construction of a dimensional index of health in Human Development Index (HDI) and Gender Development Index (GDI). Hence, the estimates of life expectancy at birth are largely required in formulating the national and sub-national human development reports.

Pondicherry, a Union Territory in the eastern coast of India, has the highest per capita expenditure on health, Rs. 2342, for the year 2010-2011 and HDI ranking of sixth among all the states and Union Territories of India.^[1,2] The life expectancy in Pondicherry was 68.35 years compared to an all India average of 63.5 years as per the Registrar General of India, Ministry of Home Affairs, and Economic Survey 2009-2010.^[3]

But, Pondicherry also has the dubious distinction of having the second highest rates of suicide in the country; 45.5/lakh population, next only to Sikkim, with suicide rate of 45.9/lakh against the Indian average of 11.4/lakh.^[4] The other major medico-social problem in Pondicherry is the high prevalence of alcoholism. Alcohol-dependence syndrome was reported to be 66.2 per 1000 males in 1988-1989^[5] compared to 4.8/1000 in Vellore^[6] and 2.36/1000 in Bangalore^[7] in the neighboring states of Tamil Nadu (TN) and Karnataka. More recent estimates show a prevalence of around 42% among men aged more than 25 years in rural area of Pondicherry.^[8] With this background, there was an assumption that these social problems affecting health directly and indirectly ultimately have an impact on the life expectancy of the population in Pondicherry. A record-based study was done to identify the causes of mortality over a 1 year period, in a population of 8500 under the service area of Urban Health Centre (UHC) of JIPMER, Pondicherry, and to calculate the life expectancy of this population.

Death statistics for the year 2011-2012 from the register of vital events maintained at the UHC were collected to calculate the age-specific mortality rates (ASMRs). These ASMR were used for calculation of life expectancy by using the method of abridged life table. The mathematical

calculations were done manually as a post-graduate learning exercise in the principles of making a life table. Details of the causes of all deaths in this population during this period were collected.

The life expectancy at birth of this population in year 2011-2012 was 72.1 years; 68.8 years for males and 74.68 years for females. The gender difference in life expectancy was highest at birth and decreased with increase in age [Table 1]. There were no deaths in females less than 20 years of age, whereas ASMR among males <1 year was 52.63/1000. However, there were no deaths in males from 1 to 20 years of age. Between 20 and 30 years, ASMR was higher among males, especially in the age group of 25-30 years, where it was almost double than that of females (4.37 vs. 2.21). In the middle age group of 30-50 years, there were no female deaths compared to the highest ASMR in any age category of males being in 45-50 years, higher than for those above 70 years of age [Figure 1].

Analysis of the causes of death revealed that the three male infant deaths were due to pre-term sepsis – two and Sudden Infant Death Syndrome (SIDS) – one. Out of the 20 deaths among men in the 30-50 years category, eight (40%) were due to alcohol. Out of which, 75% (6) were directly due to alcoholism and 25% (2) were indirectly related, as death was due to default in TB treatment because of alcoholism. Further seven deaths in the 40-50 years age group (three – TB, two – CVA, one – kidney failure, and one – respiratory failure), where the underlying and associated factors were not mentioned could have been related to alcohol. Other deaths were due to suicides – two, homicide – one, unknown – one, and mental disorder – one.

Table 1: Life expectancy in urban Pondicherry

Age groups in years	Life expectancy in years			
	Total	Male	Female	Female-male difference
0-1	72.1	68.8	74.68	5.88
1-5	72.66	71.6	73.68	2.08
5-10	68.66	67.6	69.68	2.08
10-15	63.66	62.6	64.68	2.08
15-20	58.66	57.6	59.68	2.08
20-25	53.66	52.6	54.68	2.08
25-30	48.78	47.7	49.78	2.08
30-35	43.92	42.9	44.87	1.97
35-40	39.12	38.35	39.87	1.52
40-45	34.16	33.44	34.87	1.43
45-50	29.4	28.9	29.87	0.97
50-55	24.77	24.69	24.87	0.18
55-60	19.87	19.8	19.96	0.16
60-65	14.97	14.9	15.03	0.13
65-70	10.04	10.03	10.05	0.02
>70	5.05	5.06	5.05	0.01

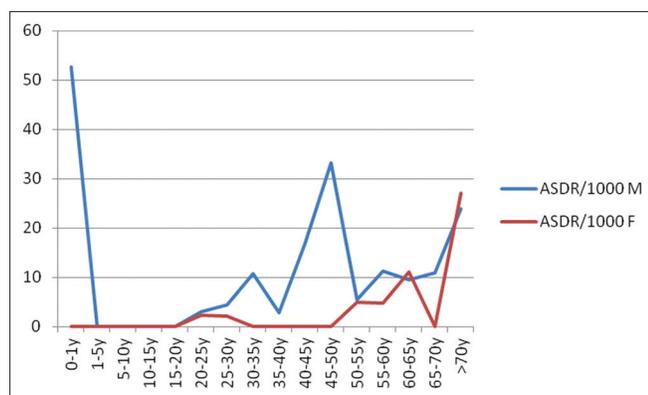


Figure 1: Gender-wise age specific death rate

Overall, among the 30 deaths above one year of age in men, 11 (36.6%) were directly attributed to alcohol and 5 were due to TB (16.67%).

Suicide rate in this area during 2011-2012 was 35.3/lakh population (32 years and 49 years men and 23 years female). Among the females of reproductive age group (15-45 years), there were two deaths; one due to suicide and other due to accidental burn. None were due to maternal causes. Proportional mortality due to accidental burns in females was 18.18% (2 out of 11 female deaths).

This urban population consisted of a combination of all socio-economic strata. Along with the urban slum and fisher men colony were also areas having the elite sections of Pondicherry. The overall and gender wise life expectancy was better than the Indian average and all other states of India excepting Kerala. The neighboring state of TN which has similar ethnic population had the overall, male, and female life expectancy of 68.9, 66.9, and 71.0 years, respectively, in the urban area.^[9] The gender difference in life expectancy at birth was almost 6 years, which was much higher than the 2 years difference in the average life expectancy of males and females in India and comparable to developed countries where females outlive men by seven years. The women have benefitted from the advancements and better access to health care through reductions in maternal mortality. The preponderance of male deaths in the 30-50 years, especially between 45-50 years, was related to alcohol. If there is proper recording of all underlying and associated factors, this proportion may go up. It is known that the life of men is shorter than women because of socio-environmental factors: Men, on average, consume more tobacco, alcohol, and drugs than females in most societies and are more likely to die from some associated diseases such as lung cancer, tuberculosis (TB), and cirrhosis of the liver. Men are more likely to die from injuries, whether unintentional (automotive accidents, etc.) or intentional (suicide, violence, and war).

The overall better life expectancy of this population hides the fact that the mortality among middle-aged men was heavily influenced by alcohol causing death directly and indirectly through its vicious relationship with infectious disease like TB. This should be an area of concern for the Government of Pondicherry, if there has to be further improvement in the health of its people and especially to control TB in this Union Territory.

ACKNOWLEDGMENT

Staff of JIUHC

Sonali Sarkar, A. M. Veerakumar , Umakant Shidam

Department of Preventive and Social Medicine, JIPMER, Pondicherry, India

Address for correspondence:

Dr. Sonali Sarkar, Department of Preventive and Social Medicine, JIPMER, Pondicherry, India.

E-mail: sarkarsonaligh@gmail.com

REFERENCES

1. Comptroller and Auditor General of India. Union and State Finances at a Glance; 2010-11; Available from: http://www.saiindia.gov.in/english/..11/CFRA_at%20Glance_2010-11.swf. [Last cited on 2013 Jan 24].
2. Pondicherry Vision 2020 (India): Ministry of Human Development. India. 2010; Available from: <http://www.unpan1.un.org/intradoc/groups/public/./UNPAN013200.pdf>. [Last cited on 2013 Jan 24].
3. BPL (Planning Commission and NSSO data, 61st Round), Life Expectancy at birth. Office of the Registrar General of India; Ministry of Home Affairs; Economic Survey 2009-10; Available from: <http://www.saiindia.gov.in/english/home/./Pondicherry/./Appendix.pdf>. [Last cited on 2013 Jan 24].
4. Suicides in India. 2010; Available from: <http://www.ncrb.nic.in/ADSI2010/suicides-10.pdf>. [Last cited on 2013 Jan 24].
5. Premarajan KC, Danabalan M, Chandrashekar R, Srinivasa DK. Prevalence morbidity in an urban community of Pondicherry. *Indian J Psychiatry* 1993;35:99-102.
6. Varghese A, Beig A, Senseman LA, Rao SS, Benjamin. A social and psychiatric study of a representative group of families in Vellore town. *Indian J Med Res* 1973;61:608-20.
7. Gopinath PS. Epidemiology of mental illness in an Indian village. *Transactions of All India Institute of Mental Health*. 1968;8:68-73.
8. Majgi SM, Soudarssanane BM, Roy G, Das AK. Risk factors of diabetes mellitus in rural Puducherry. *Online J Health Allied Sci* 2012;11:4.
9. Estimation of Life Expectancy at Birth. India. 2002; Available from: http://www.iipsindia.org/pdf/05_b_09cchep5.pdf. [Last cited on 2013 Jan 24].

Access this article online

Quick Response Code:



Website:

www.jnsbm.org

DOI:

10.4103/0976-9668.127350