

Adult Mortality in a Rural Area of Senegal: Trends and Causes of death

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Adult mortality in developing countries, particularly in sub-Saharan Africa is difficult to estimate because of the lack of reliable data. This is true for the overall level of mortality (Hill and Choi, 2005) and also for mortality due to specific causes of death. In this presentation, we provide original estimates of adult mortality in a rural population of Senegal which has been monitored for twenty years.

Population and data

The demographic surveillance system started in 1985 in Mlomp (Pison et al., 2001) with an initial census listing the inhabitants of the area and recording information on the union and reproductive histories of adult women. The demographic events (births, deaths, migrations and unions) are recorded yearly. Furthermore, for persons who have died, detailed information about symptoms and diseases prior to death are obtained from a close relative through verbal autopsies. On the basis of these reports, physicians establish the cause of the death whenever possible.

Mlomp is located in south-west Senegal, in the Casamance area. At the end of 2003, the population totalled close to 9,000 persons. The population is rural. Most people belong to the Diola ethnic group. They are animist or Catholic. Rice cultivation is the main local economic activity during the rainy season. The majority of male adults migrate during the dry season to earn money through palm wine harvesting or fishing. Young women also move, but only before marriage, to work as domestic servants in urban areas. The local health care system has been functioning since the early 60s, with a dispensary and a maternity clinic.

Mortality trends

During the period 1985 - 2003, life expectancy at birth reached 56.4 years for men and 64.6 years for women. That is high for a rural area of sub-Saharan Africa. One explanation for this is the relatively low mortality of children aged under 5, whose probability of dying was 105 ‰ during the period 1985-2003, compared with a risk of more than 170 ‰ in rural Senegal during the period 1989-1998 (Sow et al., 1999). But since the early 90s, overall mortality has slightly increased again, not only among children but also among adults (figure 1). In 1985-1989, the probability of dying between the ages of 15 and 60 was 209 ‰. Ten years later, it was near 260 ‰ and in 2000-2003, it was above 300 ‰. Mortality is particularly high for men, compared with women, with a risk of 334 ‰ in 1995-1999 (table 1). Analysis of the causes of death helps to shed light on the reasons for this increase.

Causes of death

Figure 2 presents the mortality rate by age group from age 15.

On-going research

The paper will be updated with a presentation of the causes of death over a twenty-year period (1985-2004).

Points which will be presented:

- Large proportion of deaths for which the symptoms are ill-defined (increases with the age) and which may bias the estimation of cause-specific mortality from certain causes.
- Few deaths due to AIDS, because of a low HIV prevalence among adults (Diop et al. 2000), while other infectious diseases persist among the elderly.
- A maternal mortality level which is relatively high for the local health context, but low for a rural area in sub-Saharan Africa (Pison et al., 2000).
- External causes (trauma and poisoning) are frequent because of everyday working activities, the civil war, and the sinking of the ferry “Joola” in 2002 (Pison et al., 2005).
- Mortality from circulatory disorders become high after age 60.
- Cancers have a major impact on adult mortality and seem to be increasing (figure 3), though low diagnosis specificity makes estimation difficult.
- Large difference in mortality levels between men and women.

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Figure 1. Probabilities of dying between different ages, by period (Mlomp, 1985-2003)

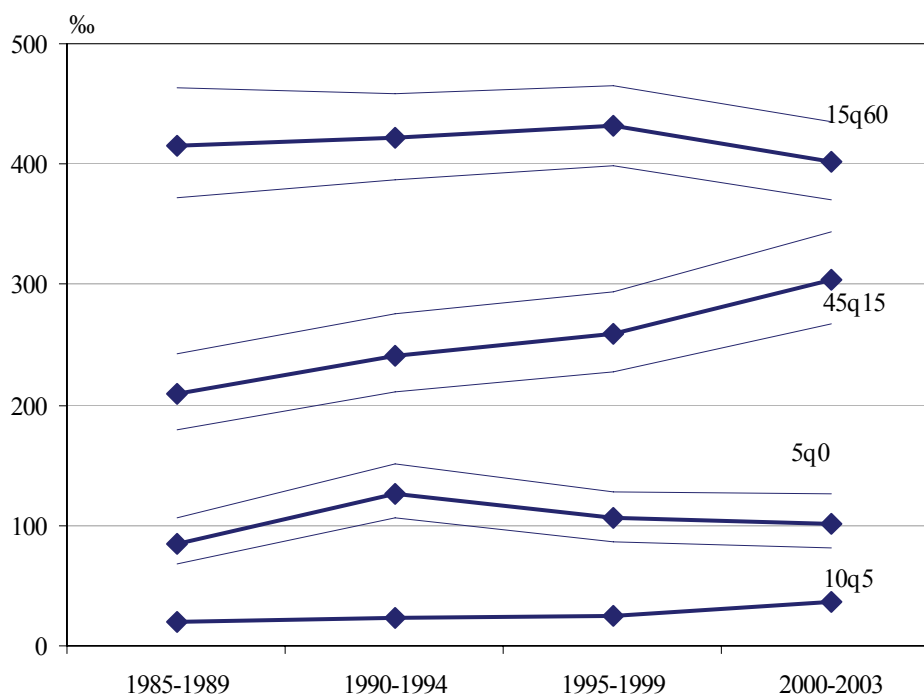


Table 1. Probability of dying (%) by age group between 15 and 75, by period, for men and women (Mlomp, 1985-2003)

	1985-1989	1990-1994	1995-1999	2000-2003
Men				
45q15	269	299	334	368
30q15	90	131	145	179
15q45	197	193	221	231
15q60	502	525	524	466
Women				
45q15	140	186	170	240
30q15	71	95	60	129
15q45	74	101	117	128
15q60	343	303	338	346

Figure 2. Mortality rate after age 15 and distribution of causes of death, by age group (Mlomp, 1985-1999)

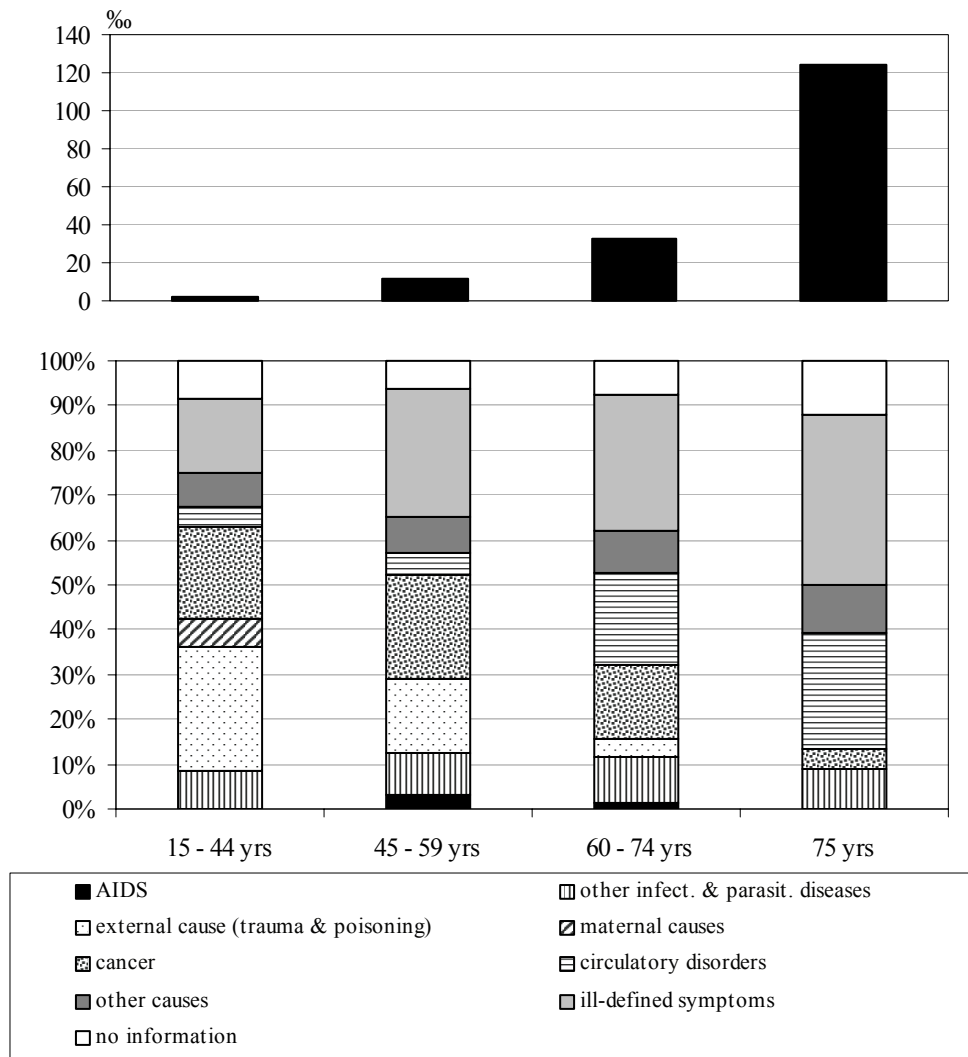


Figure 3. Probability of dying of cancer (of liver, digestive system, and all cancers), for male adults by period and age group (Mlomp, 1985-1999)

