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Educational differentials in male mortality in Russia and northern Europe

A comparison of an epidemiological cohort from Moscow and St. Petersburg with the male populations of Helsinki and Oslo

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Abstract

Background: Prior estimates of the Russian mortality by socio-demographic group revealed significant differentials around the censuses of 1979 and 1989, but these studies were based on different sources of information on education for the deceased and the population at risk, leading to a potential numerator-denominator bias. To eliminate this problem, and to compare with the corresponding differentials in Nordic countries, an epidemiological cohort from Moscow and St. Petersburg is used for estimation of mortality in this study, along with similar register-based data from Helsinki and Oslo. Data and Methods: The Russian data include 7815 men from Moscow and St. Petersburg born in 1916-35 who participated in the Lipid Research Clinics (LRC) program, with a follow-up period from 1975 to 1997. Data with a similar structure, covering complete cohorts, were established for men born 1916-35 cohorts and living in Helsinki (1976-1995) or Oslo (1975-1991). Three educational categories were used: low (less than 10 years of schooling), middle (11 to 12 years) and high (13+ years). Results: In the LRC cohort, mortality of men with high education is close to the city average for Helsinki and Oslo. Absolute inter-group differences are much greater in the Russian sample than in the two other populations. Differences in temporary life expectancies (40-74) between men with high and low education are 5.2, 3.5, and 3.2 years in the LRC cohort, Helsinki, and Oslo, respectively. Also relative differences are larger in the LRC cohort, although less markedly. Low/high education ratios of standardized death rates are 2.2, 2.0, and 1.9 in the three populations. Educational mortality differences measured by a relative index of inequality are 3.1, 2.7, and 2.6 (using the all-Russia educational distribution in the calculation for the LRC cohort.) A similar pattern appears, of course, in Poisson regression models where it is controlled not only for age, but also calendar time. Consideration of causes of death shows that the larger relative difference between educational categories in the LRC cohort than in the Nordic capitals stems from particularly sharp gradients in mortality from cerebrovascular diseases and, more clearly, external causes. Whereas all-cause mortality has increased over time for men in the LRC cohort with low or middle education, there are indications that those with high education have experienced a decline (i.e. differentials have increased). In contrast to this, the development in Oslo and Helsinki has been more similar for the different educational groups. Implications: The educational gaps in mortality of the Russian population and its extreme levels in the low education group should be addressed by adequate health policies. Trends in inequalities in health and their determinants require careful monitoring and further analyses.

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