

Understanding the toll of premature death among men in eastern Europe

Martin McKee, Vladimir Shkolnikov

The policies pursued by the Soviet Union and its satellites in central and eastern Europe have had profound implications for health.^{1,2} By 1990 the probability of people dying before the age of 65 in the Soviet Union was twice that for western Europe, and for the communist countries of central and eastern Europe it was 70% higher compared with western Europe.³

Men were especially susceptible to dying prematurely. Although men in all industrialised countries live shorter lives than women, in the Soviet Union the gap between the sexes was especially large. In 1990 the life expectancy of men living in the Soviet Union was only 64 years—nine years less than in western Europe. Soviet women could expect to live to 74 years—10 years longer than men and only six years less than women in western Europe. The disadvantage in life expectancy relative to western Europe was less for countries of central and eastern Europe, but even there the gap was six years for men and five years for women. The travel writer Colin Thubron, after meeting an old woman in a village in western Siberia, observed for himself the reality that “in her experience, men died young.”⁴

Understanding why men die

The present review draws on mortality data supplied by the World Health Organization and on the findings of a collaborative programme of research on health in central and eastern Europe.⁵ Mortality was higher in eastern Europe than in western Europe for men and women alike, suggesting that some factors contributing to death were common to both sexes, whereas other factors especially disadvantaged men. Considerable

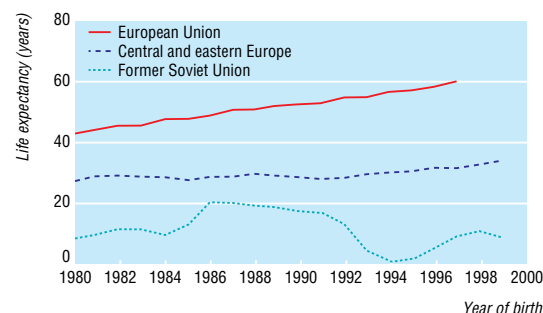


Fig 1 Life expectancy of men in Europe³

Summary points

Young men were especially vulnerable to the consequences of the policies pursued by the communist regimes in eastern Europe before 1990

The leading causes of the high mortality were injuries and violence and cardiovascular diseases

High levels of alcohol consumption, especially binge drinking, were an important underlying factor, but smoking and poor nutrition also played a part

Men who have experienced a rapid economic transition, who have least educational resources and least social support have been affected the most

The pattern of premature mortality seen among men in eastern Europe is not unique and there are many parallels among disadvantaged communities in western Europe

European Centre on Health of Societies in Transition, London School of Hygiene and Tropical Medicine, London WC1E 7HT

Martin McKee
professor of European public health

Max Planck Institute for Demographic Research, Doberaner Str 114, 18057 Rostock, Germany

Vladimir Shkolnikov
head of the laboratory of demographic data

Correspondence to: M McKee
Martin.mckee@lshtm.ac.uk

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national diversity was also evident. For example, the life expectancy of men was lower in countries of the former Soviet Union than in the other Soviet block countries of central and eastern Europe (fig 1).³ A further division separates countries in central and eastern Europe that have seen marked improvements in health, such as Poland and the Czech Republic, from those that have not, such as Romania and Bulgaria. Similarly, in the former Soviet Union there are differences between the republics of Europe and central Asia.¹

The variation between countries regarding the difference in life expectancy between men and women is shown in figure 2.³ A disadvantage for men, although more common in eastern Europe, is not unique to that region. Indeed, the eight year sex difference in France exceeds that of many central European countries. Sex differences in life expectancy are especially large in Poland, Hungary, Russia, and the European post-Soviet republics. In other countries, especially those in the southern part of the region or in central Asia, the difference is similar to that in western Europe. Interest-

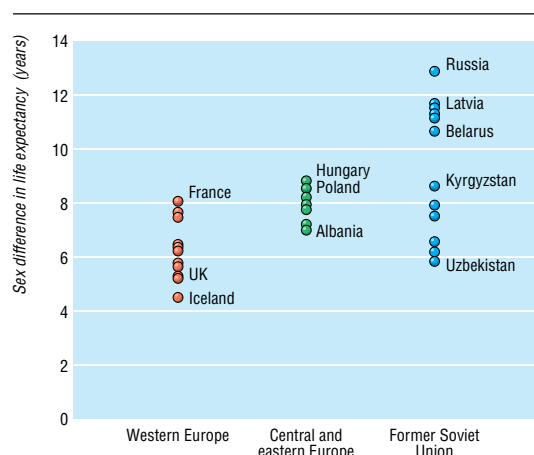


Fig 2 Sex difference in life expectancy at birth in Europe (women–men).³ Named countries show top and bottom of ranges and several other examples

ingly, the sex difference in some western countries has narrowed since the early 1990s and reflects, predominantly, a rising level of smoking related mortality among women.⁶ Similarly, in some central Asian countries, it reflects a particularly low level of health among women, especially in rural areas.⁷

Immediate causes

Some clues as to why men have shorter lives than women can be found from the age distribution of mortality in men. Mortality relative to western Europe is highest in the age group 35–44 years (fig 3). Many factors contribute to this peak but injuries, violence, and cardiovascular diseases make the greatest impact. Deaths in this age group, and deaths from these three causes of death, have also been extremely important in explaining the changes in overall mortality associated with the transition to democracy.^{8,9}

Injuries and violence

By 1997 mortality from all external causes in men before the age of 65 was five times higher in the countries of the former Soviet Union than in western Europe; in central and eastern Europe it was double that in western Europe. All causes of injury are more common in the former Soviet Union than in western

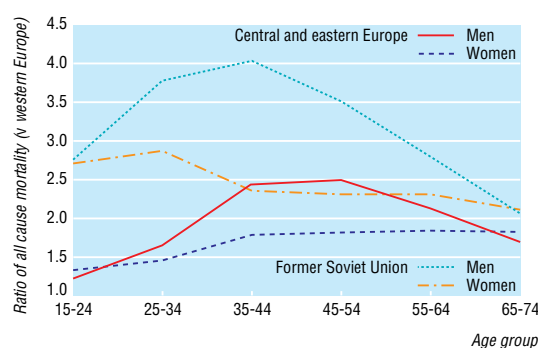


Fig 3 Ratio of age specific all cause mortality in men in central and eastern Europe and the former Soviet Union to mortality in the European Union, 1997. Source: WHO³

Europe. For road traffic accidents, however, the difference between the two regions (50% higher in the Soviet Union) is small compared with the 3.4-fold difference for suicide and 19-fold difference for homicide.³ Other common causes of death in the former Soviet Union include drowning and deaths in fires.

Unfortunately, injuries and violence have received relatively little attention from policymakers in central and eastern Europe,¹⁰ and many factors underlie the high levels of injuries in this region.¹¹ One factor is that these countries lack many of the design features promoting safety that are found in western Europe, such as adequate lighting and enforcement of regulations on building and equipment. Another is the weakness in the healthcare system, including poor communications, especially in rural areas, resulting in slow responses of ambulances to emergency calls. Trauma care is often of poor quality.

A key contributing factor to the high level of injuries and violence is the large consumption of alcohol. In Russia, the number of deaths from external causes closely reflects the number of deaths from alcohol poisoning, both geographically and over time.^{9,12} Many men who commit suicide show evidence of intoxication, and intoxication of at least one of the parties involved in a homicide is almost universal.¹³

Cardiovascular disease

Mortality due to cardiovascular disease is greatest, relative to western Europe, in the age group 35–44. Cardiovascular disease is understood differently in Russia, in several important aspects, than in western Europe. Thus, mortality for cardiovascular disease is especially high at young ages. Deaths are also more likely to be sudden,¹⁴ and many people who die show little evidence of the expected coronary artery lesions.¹⁵ The traditional risk factors identified in western epidemiological research, such as smoking, lipid levels, and physical activity, have little predictive value.¹⁶ Indeed, lipid metabolism appears to differ in Russians and Americans.¹⁷ Instead there is growing evidence that other factors are involved. Eastern European diets, for example, are characterised not only by large amounts of fat but also by very low quantities of fruit and vegetables. Correspondingly, antioxidant activity in the blood is extremely low.^{18,19} The role of micronutrients in macrophage adhesion and passage of cholesterol through arterial walls provides a mechanism by which this could cause heart disease.²⁰ The rapid reduction in cardiovascular deaths in some countries, coinciding with changes in diet, offers support for this hypothesis.^{21,22} Poor nutrition is thus likely to be important in explaining the overall difference in mortality compared with western Europe. Although there are some differences in the diets of men and women,²³ the differential impact on health is likely to be small.

Another factor that contributes to increased mortality due to cardiac disease is alcohol. Across northern Europe, but especially in Russia and some of its neighbours, alcohol is typically drunk as vodka and in binges,²⁴ in contrast to a more steady consumption in southern and western Europe. A possible link with cardiac death was suspected following the observation that deaths in Moscow from cardiovascular disease increased at weekends, a finding incompatible with the

effects of the traditional risk factors.²⁵ (This was later replicated in Scotland,²⁶ indicating the wider implications of research in eastern Europe). Binge drinking is associated with a marked increase in the risk of cardiovascular death, and in particular sudden cardiac death,²⁷ reflecting different physiological responses to binge drinking and regular moderate consumption.²⁸ A third factor, although one whose role is less well defined, is the high level of psychosocial stress.²⁹

Alcohol and tobacco

Injuries and cardiovascular diseases account for a large part of the difference in mortality between eastern and western Europe, but several other causes, although less important numerically, are much more frequent in eastern Europe than in western Europe. These include various causes directly or indirectly associated with alcohol consumption. Direct causes include acute alcohol poisoning and cirrhosis; indirect causes include conditions such as stroke³⁰ and pneumonia.³¹ High mortality from injuries, cardiovascular deaths, and acute alcohol poisoning is seen in countries where the drinking culture favours vodka. These countries also tend to have relatively low mortality from cirrhosis, possibly because death from other causes occurs before cirrhosis can develop. In southern parts of the region, however, in particular in a band stretching from Slovenia to Moldova, the acute effects of alcohol are less apparent (with the exception of deaths from road traffic accidents), but deaths from cirrhosis are extremely common. The reason for this is unclear. One possible explanation is found in the pattern of drinking, with many heavy drinkers drinking from early morning. Another is a low level of dietary micro-nutrients from fruit and vegetables, which could otherwise provide some protective effect.

The health effects of tobacco also contribute to the difference in mortality in men between eastern and western Europe,³² although these health effects have had less impact on recent changes than have alcohol and nutrition. Caution is required, however, because the effects of smoking become apparent only after many years. Mortality from lung cancer is currently falling in many former Soviet countries, reflecting the fact that fewer men began smoking during the austere period of the late 1940s and early 1950s.³³ This fall will, however, be short lived. Tobacco contributes substantially to the sex difference in mortality in eastern Europe, especially in the former Soviet Union, where mortality from lung cancer is almost nine times higher among men than women, compared with a difference of 4.5 times in western Europe. It has traditionally been uncommon for women of the former Soviet Union to smoke, although this is now changing rapidly in response to massive marketing efforts by western tobacco companies.³⁴

Abstinence from alcohol and tobacco often characterises the religious beliefs of populations in which mortality in men and women is similar.^{35 36} This indicates that basic biological differences, although clearly important in the aetiology of many specific diseases, may not be the most important factor in determining excess mortality in men. That alcohol and tobacco might contribute to sex differences in mortality is intuitive because the use of both is closely related to gender in most societies. In western societies,



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women are adopting behaviour traditionally associated with men, such as high rates of smoking. This means that the sex difference in life expectancy is narrowing, primarily because of a break in the previously upward trend in female life expectancy.

Other causes

Finally, there are some specific conditions that, although not numerically as important as those discussed above, also impact disproportionately on men in this region. The most important is tuberculosis, with mortality from this disease being more than nine times among Russian men than among women. A major factor is the high level of transmission of the disease in prisons,³⁷ which have a population predominantly consisting of men. Worryingly, the prevalence of HIV infection is also increasing rapidly and although it is not yet a major cause of premature mortality, it probably will be within a few years. The emergence of large numbers of people with compromised immune status will exacerbate the effects of other infections, in particular the increasing level of drug resistant tuberculosis.

Underlying factors

The preceding paragraphs discuss the contribution of lifestyle related factors to the burden of premature death in men. Lifestyle choices are, however, heavily influenced by social circumstances and they can only be understood fully by considering the context in which they are made.

Not all men have been affected equally by the communist system and the subsequent transition. In Russia, when overall mortality was increasing rapidly in the early 1990s, the greatest increases in mortality were in regions experiencing the most rapid economic transition, as measured by gains and losses in employment.¹² Men with poor education were especially vulnerable to the changes. Indeed, mortality among Russian men who were well educated was similar to levels in western countries in the 1980s and early 1990s. Overall mortality was much higher among men with the least education, the difference between the two groups being primarily due to external causes and cardiovascular diseases.³⁸ The sex difference in mortality was also widest for men with poor education. The link between alcohol and

mortality is also evident here, given that the gradient in mortality in relation to levels of education was especially steep for causes directly related to alcohol consumption.³⁹ Other research emphasises the importance of lack of control over one's life⁴⁰ and low levels of social support. Watson has explored the reasons why men, and particularly those who were unmarried, were rendered especially vulnerable in communist societies.⁴¹ They were confronted with a relentless feeling of impotence in a hostile and unresponsive world, unlike women, who could find fulfilling roles within the home.⁴² Thus the increase in mortality in men in central and eastern Europe in the 1980s was greatest among unmarried men.^{43 44}

These findings paint a picture of societies in which young and middle aged men face social and economic disruption on a large scale, for which they are poorly prepared. For many, their options are constrained by low levels of education, and the societies of which they are a part have few systems of social support. Poor nutrition and high rates of smoking have already reduced their chances of a long life. The availability of cheap alcohol, however, provides a pathway not only to oblivion but often to premature death. To be drunk anywhere can be dangerous, but especially so in a society in which there are few people on whom one can depend and where many elements of the environment present lethal hazards. The dangers are exacerbated by an unwillingness by society to challenge a high level of violence.

Wider implications

The burden of premature mortality in men in the former communist countries stands out on account of its magnitude, but this phenomenon is not unique. In several western countries mortality among young men is rising. Mortality is driven to a considerable extent by injuries and other alcohol related causes, with the additional effect of AIDS.^{45 46} Elements of the pattern of premature mortality in eastern Europe can also be seen in certain disadvantaged minorities in otherwise affluent countries. Examples include native and African Americans and Australian aborigines. The east-west gradients in mortality from different causes and the social class gradient in the United Kingdom are strikingly similar.⁴⁷

There are also millions of men in developing and middle income countries whose deaths are never recorded. The few studies that have provided insight into their lives suggest that they too face high levels of adult mortality.^{48 49} Those studies are important but are an inadequate substitute for the effective systems of vital statistics that will be needed to make their plight visible.

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Effect of sex and gender on psychosocial aspects of prostate and breast cancer

Alexander Kiss, Siegfried Meryn

Being male or female is an important basic human variable that affects health and illness throughout life.¹ Men and women differ not only with regard to their reproductive organs and bodies but also in the way they think, feel, and behave. The physical difference is called sex, influenced by genes and biology; the psychological difference is called gender, in which environmental, cultural, and psychosocial factors also have a prominent role. Researchers are just beginning to unravel the complex interactions between sex and gender, and the roles of nature and nurture are still unclear.

In the case of cancer it is obvious that only men can get prostate cancer and breast cancer occurs predominantly in women. How gender matters is not so obvious. In this article we describe the effect of gender on psychosocial differences in men and women with prostate and breast cancer, respectively.

Methods

We reviewed the recent literature concerning psychosocial aspects of prostate and breast cancer. We also incorporated our experiences as a psycho-oncologist and a general internist practising in sex and gender medicine as well as discussions and scientific exchange with colleagues and nurses in these specialties. There are several limitations—for example, both authors are male, which means there is a gender bias; we may be unaware of some aspects of the recent gender research in the social sciences; and the space for references is limited. The cited literature therefore mainly focuses on prostate cancer.

Table 1 Biology and epidemiology

	Prostate cancer	Breast cancer
Main cancer in men/women	Yes (after skin cancer)	Yes
Lifetime risk (%)	19.8*	12.6*
Increasing frequency	Yes	Yes
Environmental factors involved	Yes	Yes
Main cause of cancer death	Yes (after lung cancer)	Yes
Living with metastasis	Frequent	Frequent
Screening possible	Yes	Yes
Screening improves survival	??	?

*Data from *Cancer Facts and Figures, 2000*. Atlanta, GA: American Cancer Society, 2000.

Summary points

Sex and gender based differences have a profound effect on health and disease

The biology and epidemiology of prostate and breast cancer share many similarities

Differences in psychosocial aspects of prostate and breast cancer are mainly based on gender issues

Gender differences are evident not only in the physical impact but also on sex, quality of life, psychosocial differences, coping, and patients' partners

Differences in doctors' attitude and behaviour in the care of men with prostate cancer and women with breast cancer seem to be based on gender

Psychosomatic Division,
Department of Internal Medicine,
University Clinics Basel, Petersgraben
4, CH-4031 Basel, Switzerland

Alexander Kiss
psycho-oncologist

Centre for Advanced Medical
Education and Health
Communication,
Medical Faculty of the University of
Vienna,
Borschkegasse 8B,
A-1097 Vienna, Austria

Siegfried Meryn
general internist

Correspondence to:
A Kiss
akiss@uhbs.ch

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Biology and epidemiology of prostate cancer and breast cancer

The biology and epidemiology of prostate and breast cancer share many similarities (table 1). For example, the lifetime risk for both cancers is high, and the frequency of both is increasing. Environmental factors seem to affect the risk of both cancers. In contrast to other cancer types, it is common for people with breast or prostate cancer to live with metastases for months and years. Screening for both cancers is possible, although much controversy exists over whether screening improves survival. Both cancers have a large effect not only on affected individuals but on the costs to national healthcare systems.

Physical effect of treatment on patients

Men with localised prostate cancer have four treatment choices: watchful waiting, radical prostatectomy, external beam radiation, and radioactive seed implants (brachytherapy). All options other than watchful waiting may