Available online at www.sciencedirect.com

Public Health

journal homepage: www.elsevier.com/puhe

Original Research

Ethnic differences in all-cause mortality rates in Kazakhstan

K. Davletov [a], M. McKee [b], S. Berkinbayev [a], Z. Battakova [c], B. Zhussupov [a], B. Amirov [a], G. Junusbekova [a], B. Rechel [b,*]

[a] Republican Research Institute of Cardiology and Internal Diseases, Almaty, Kazakhstan
[b] European Observatory on Health Systems and Policies, London School of Hygiene & Tropical Medicine, London, United Kingdom
[c] National Centre for Problems of Healthy Lifestyles Development, Almaty, Kazakhstan

ARTICLE INFO

Article history:
Received 13 August 2015
Received in revised form
20 November 2015
Accepted 28 November 2015
Available online 21 January 2016

Keywords:
Kazakhstan
Mortality
Ethnic groups
Alcohol consumption
Smoking

ABSTRACT

Objectives: This article explores mortality rates in Kazakhstan by ethnic group and some of the potential lifestyle factors that might help to explain the observed differences on a population level.
Study design: Repeated cross-sectional data analysis.
Methods: We calculated age-standardized mortality rates from all causes by ethnic group, gender and age for 2009–2012. We analysed data on self-reported alcohol and tobacco consumption and other lifestyle factors from the nationally representative 5th National Behavior Study, conducted in 2012.
Results: Age-standardized all-cause mortality rates are generally much higher among ethnic Russians than among ethnic Kazakhs, both among women and men and in rural as well as urban areas. These differences are most pronounced in the age group 20–59 years. Information on self-reported alcohol consumption and smoking by ethnic group, gender and age shows major differences between ethnic groups, with consistently higher rates of alcohol consumption and smoking among ethnic Russians, both in women and men and across all adult age groups.
Conclusions: Policies to improve the health of the population of Kazakhstan must take account of ethnic differences.

Introduction

Statistics on a country's general health status can hide the differences that exist in ethnically diverse populations. Kazakhstan, which became independent in 1991 following the dissolution of the Soviet Union, is a large, geographically diverse and multi-ethnic country. It was estimated that in 2013, from a total population of 17 million, ethnic Kazakhs comprised 65.2%, with ethnic Russians comprising 21.8%,

* Corresponding author.
E-mail address: Bernd.Rechel@lshtm.ac.uk (B. Rechel).
http://dx.doi.org/10.1016/j.puhe.2015.11.026

ethnic Uzbeks 3%, ethnic Ukrainians 1.8%, ethnic Uigurs 1.2%, ethnic Tatars 1.2%, ethnic Germans 1.1%, while the remaining ethnic groups made up 4.5% of the population.[1] In the south and west of the country ethnic Kazakhs and other Turkic groups (in particular ethnic Uzbeks and Uigurs) form the vast majority of the population, while in the north and east, historically the main destination of Russians and other ethnic groups, ethnic Kazakhs make up less than 50% of the population.[1] Although almost 50% of ethnic Kazakhs now live in cities, almost half of them are recent migrants from rural areas and Kazakhs typically have a lower socio-economic status (SES) than ethnic Russians, 75% of whom are living in urban areas.[1]

Kazakhstan has among the highest cardiovascular disease (CVD) and all-cause mortality rates in the WHO European region and while there has been a presumption that the reasons are similar to those in neighbouring Russia, compared with Russia, which has been studied in depth, there has been little attention from researchers to geographical and ethnic inequalities there. It is, however, known that ethnic Russians in Central Asia have higher adult mortality than native ethnic groups[2–4] and, within Kazakhstan, CVD mortality is higher in regions with the highest densities of ethnic Russians than in regions predominantly populated by ethnic Kazakhs.[5] It is also known that, as in Russia, CVD mortality and mortality from external causes are particularly high among men of working age, accounting for much of the 13.5-year difference in life expectancy between males in Kazakhstan and those in the EU in 2010. The gap between female life expectancy in Kazakhstan and that in the EU is also substantial, reaching 9.5 years in 2010.[6] Both causes of death are known to be associated with hazardous alcohol consumption, which is more frequent among ethnic Russians[7] and has been linked to the corresponding mortality differences.[4]

However, a first step in understanding Kazakhstan's ethnic and regional differences is to determine the extent to which the observed differences are not simply an artefact of the age composition of the different groups. The higher fertility of Turkic groups, such as Kazakhs and Uzbeks, means that they have a younger age structure than Slavic groups (including ethnic Russians and Ukrainians). Thus, the median age of ethnic Kazakhs is 26 years, while for ethnic Russians it is 37 years and for ethnic Ukrainians 45 years.[1] Clearly this is a factor in the much higher crude mortality of ethnic Russians and Ukrainians compared with that of Turkic ethnic groups. Thus, the crude mortality rate from all causes is approximately 15 per 1000 population for ethnic Russians and 30 for ethnic Ukrainians, while ethnic Kazaks, Uzbeks and Uigurs have crude mortality rates of just above five per 1000 population.[1]

Recently, data have been made publicly available that permit insights into Kazakh regional and ethnic mortality. In 2013 the Kazakh State Agency of Statistics published crude mortality rates from all causes for each main ethnic group, covering the years 2009–2012, although it did not perform age standardization. However, the Kazakh State Agency of Statistics also published information on life expectancy at birth by ethnic group (Appendix Table 1), including age-specific all-cause mortality.[1] These data reveal life expectancy at birth to be lowest (63.7 years) among ethnic Ukrainians and ethnic Germans (64.9 years) and highest among ethnic Kazakhs (71.3 years) and ethnic Uzbeks (70.7 years). Uzbek males living in rural areas not only live three years longer than their urban counterparts, but also have the highest male life expectancy among all ethnic groups. The gap between them and urban Ukrainian males reaches almost 12 years. Among women, Kazakh females living in urban areas have the highest life expectancy, almost six years more than that of ethnic German and Ukrainian females who have the lowest female life expectancy.

The aim of our study was to examine ethnic differences in overall mortality in Kazakhstan in 2009–2012, using direct age standardization, and, to inform interpretation of our findings, to explore potential behavioural factors that might help to explain the observed differences at a population level. Our analysis focuses on ethnic Kazakhs and ethnic Russians, the two largest population groups, accounting jointly for 87.0% of the population.

Methods

Data on all-cause mortality in 2009–2012 by 5-year age group, ethnicity, gender and place of residence were extracted from the online Ethno-demographic Yearbook of the State Agency for Statistics of Kazakhstan.[1] Annual age-standardized mortality rates from all causes were calculated per 100,000 mid-year population separately for men and women by the method of direct standardization using the European standard population. We examined differences in two broad age categories: 25–64 years and 65–85+ years, allowing us to assess rates of premature mortality in those under the age of 65 years.

We obtained additional information on behavioural parameters: self-reported alcohol and tobacco consumption; overweight and obesity; physical activity; and consumption of fruits and vegetables. These were from the nationally representative 5th National Behavior Study, conducted by Kazakhstan's National Healthy Lifestyle Centre in 2012, with a total of 18,000 adult respondents aged 18 years and above (1200 in each region and 600 in the cities of Almaty (former capital) and Astana (current capital)). The reference population was all men and women aged 18 and above living in Kazakhstan. Multistage random sampling was used. Primary sampling units were all 14 oblasts (further sub-divided into urban and rural areas) and the cities, Astana and Almaty, yielding 30 units, the second stage involved random sampling from a list of polyclinics, with the final stage of random sampling from those registered with each polyclinic. The total sample size was 18,000 respondents, who were categorized into the following age groups: 18–19, 20–29, 30–39, 40–49, 50–59, and 60 years and older and including men and women.

Respondents were asked whether they currently smoke or consume alcohol, being given the options of answering 'yes' or 'no'. They were also asked questions about their height and weight, allowing the calculation of their body mass index. The questionnaire further asked whether they engaged in at least 30 min of physical activity a day and whether they consumed at least 400 g of fruits and vegetables a day. We calculated the prevalence ratio of these various lifestyle factors among ethnic Russians as compared to ethnic Kazakhs in different