

Emerging Challenges in Healthcare in Central Asia

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Introduction

Central Asia is a geographic region with a rich history, stretching from the Caspian Sea in the west to central China in the east, and from southern Russia in the north to northern India in the south. Central Asia includes Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan, Uzbekistan, northern-Pakistan, northeastern Iran, northwestern India, and western parts of the People's Republic of China (Xinjiang). Southwestern and middle China (Tibet Autonomous Region, Qinghai, Gansu and Inner Mongolia), and southern parts of Siberia may also be included in Central Asia. The countries of this region have historically been closely related through its nomadic peoples, the Silk Road, and the Mongol and Russian Empire. Later in the 20th century, influence of the Soviet Union was strong in this area.

The average life expectancy is around 60 years for males and 70 for females. Total expenditure on health as a percentage of GDP is minimum 2% (Turkmenistan), maximum 8.1% (Afghanistan) and total expenditure on health per capita is \$392 in the average Central Asian country, except China and Russia, which partly belong to Central Asia. The lowest amount of health expenditure as a proportion of GDP was observed in Turkmenistan regardless of the relatively high-gross national income per capita (2% vs. 12 PPP international dollar, 2013). China (5.6 PPP international dollar, 2013) and the Russian Federation (6.5 PPP international dollar, 2013) have quite comparable expenditures with other Central Asian countries [1].

Burden of disease and challenges related to health systems

Central Asia is being faced with a double burden of communicable and non-communicable diseases. Overall, communicable diseases have decreased over the years in this region, but there are still of significant socioeconomic importance due to their potential for causing outbreaks and health emergencies.

The main immediate causes of adult mortality/morbidity are diseases of the circulatory system, respiratory and digestive tract, cancers, and external causes such as injuries, violence and self-harm. Moreover, maternal and child health continues to be an ongoing public health concern in this region. Among the top ten causes of death are ischemic heart disease, lower

respiratory tract infection, stroke, road injury and cirrhosis of the liver, chronic obstructive pulmonary disease have been the most notable causes of death in all countries of Central Asia [1].

In terms of disability adjusted life years (DALYs) and years of life lost (YLLs) in 2012, non-communicable diseases such as maternal, neonatal disorder, nutritional deficiency, cardiovascular diseases and diabetes, neuro-psychiatric conditions, unintentional injuries, and cancer have been the highest ranking causes in Central Asian countries. Although the non-communicable diseases noted above dominate the overall burden of disease in the region, there is also a persisting threat from infectious disease, in particular, acute respiratory infections, HIV/AIDS, TB, and malaria [1].

Among infectious disease, viral hepatitis comprises a large proportion of the total infectious diseases according to current estimates, followed by high prevalence of liver cirrhosis in this area [2, 3]. Moreover, most parts of Central Asia are also known to have burden by rheumatic fever and rheumatic heart disease [4, 5]. After privatization in the 1990s, small farms in Central Asia were left largely without veterinary inspection, and the rise of zoonotic, or animal-borne, helminth infections became an emerging challenge of health sector [6-8].

Many other challenges continue to exist in this region, as all countries experienced an economic decline, which directly affected the health sector after the collapse of the Soviet Union. Health-care reforms had different rates of success across the Central Asian region. Current weaknesses of the health sector include low public expenditure on health, shortage of adequately trained and motivated health care workers, and inadequate supply of essential medicines, medical products, technologies, etc. These are coupled with low health service coverage and the vulnerability of health systems to natural disasters and outbreaks of emerging and/or pandemic diseases [9].

Opportunities for research

Central Asia is an interesting and under-investigated region from not only a public health view, but also a scientific view. This area is culturally and demographically diverse, both between and within its respective countries. Multiethnic and multicultural populations living in this area have dramatic genetic and life style variations, which has made populations vulnerable for unique health risk factors. The medical and social burden of many

diseases was underestimated until recent times in this region.

Despite the scientific research demand in these countries there is a relatively lower number of research projects and publications with quality. Scientists have difficulty with not only financial insufficiency in scientific research, but also language barriers, low motivation, high publication fees for peer reviewed journals, etc. Therefore, the majority of Central Asian scientists tend to publish in local journals.

The data on peer-reviewed publications in medicine in Central Asian countries is presented in Figure 1 and Table 1 (based on SCImago data, which is derived from the Scopus® database) [10]. Figure 1 shows a significant increase in the number of publications in medicine starting from 2010. In the overall SCImago ranking of scientific contribution to health-related disciplines, Central Asian countries ranked from 126 (Kazakhstan) to 213 (Turkmenistan, Table 1). Despite the overall increase in the number of published documents, the publishing pattern of Central Asian medical sciences is uneven, and publishing indexes vary significantly between years.

A vast number of medical research articles produced in Central Asian countries is unknown to the international scientific community, and is not cited in international databases. Evidence-based medicine is not always practiced due to the slow transition of scientific medicine into medical and public health practice in this region.

Therefore, the Central Asian Journal of Medical Sciences (CAJMS) (<http://www.cajms.mn/>), a new English language scientific journal has been initiated with the hope of improving scientific productivity in the region. An aim of the journal is to advance knowledge in medicine, dentistry, public health, nursing, pharmacy and traditional medicine and promote contact between basic and clinical medicine and dentistry.

Conclusion

This editorial outlined some of the public health challenges faced by Central Asian countries and current situation of scientific research in this region. Central Asia is a diverse region with a mix of upper middle and low-income countries and these countries are experiencing an epidemiological and demographic transition, with declines in morbidity and mortality from communicable diseases and an increase in burden due to chronic and non-communicable diseases, as reflected in the ten leading causes

of mortality. Despite steady progress in improving the health of its population in recent decades, several key challenges still need to be addressed in this region. Moreover, there is a big demand for public health and basic scientific research and scientific data from this area that has limited access to international scientific and medical community. CAJMS is a newly launched international

journal that focuses on publishing peer-reviewed research data, reviews, and other important issues relevant to various fields of public health and biomedicine in the region. Allowing Central Asian scientists to publish their research findings will help to build the research capital of the region. However, CAJMS welcomes contributors and readers from all countries.

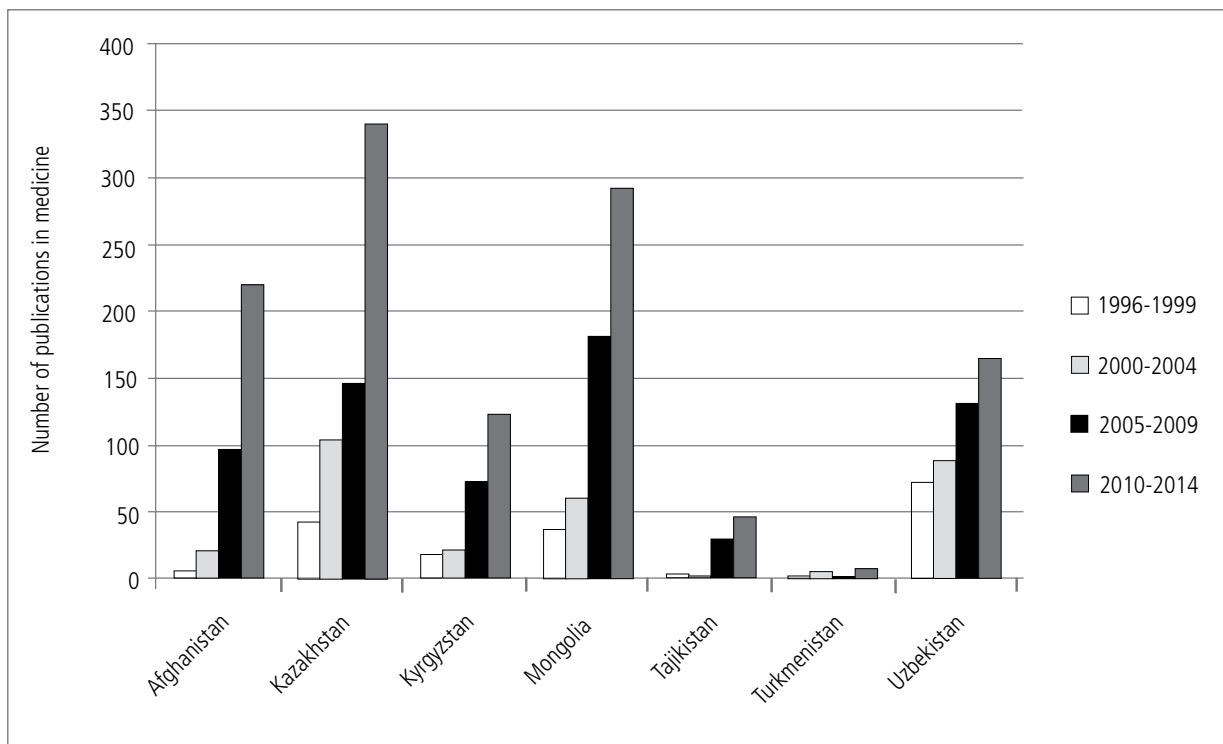


Figure 1. Number of Central Asian publications in medicine for 1996–2014 [10].

Table 1. SCImago ranking and publication information by country for medicine

| Country ^a | Documents | Citable documents | Citations | Self citations | Citations per document | World rank |
|----------------------|-----------|-------------------|-----------|----------------|------------------------|------------|
| Afghanistan | 345 | 300 | 3,074 | 365 | 9 | 147 |
| Kazakhstan | 635 | 616 | 4,391 | 471 | 7 | 126 |
| Kyrgyzstan | 236 | 212 | 2,715 | 110 | 12 | 161 |
| Mongolia | 574 | 558 | 7,657 | 552 | 13 | 133 |
| Tajikistan | 82 | 81 | 710 | 56 | 9 | 184 |
| Turkmenistan | 16 | 15 | 208 | 0 | 13 | 213 |
| Uzbekistan | 460 | 441 | 3,669 | 288 | 8 | 139 |

^a Data compiled from 1994-2014 from [10]

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