BOLIVIA

OVERVIEW

Bolivia, located centrally within the South American continent, shares borders with Brazil, Paraguay, Argentina, Chile and Peru. It has a land area of 1,098,581 km², of which 65% is plains where 26% of the country’s population is concentrated. 62.4% of Bolivia’s population lives in urban areas and 47.3% in rural areas. Fifty point sixteen per cent (50.16%) of the country’s population is female.

Bolivia’s geography is varied, ranging from the peaks of the Andes in the West, to the Eastern Lowlands, situated within the Amazon Basin. It is a developing country, with a Medium Human Development Index score, and a poverty level of 53%. Its main economic activities include agriculture, forestry, fishing, mining, and manufacturing goods such as textiles, clothing, refined metals, and refined petroleum. Bolivia is very wealthy in minerals, especially tin.

The Bolivian population, estimated at 10 million, is multiethnic, including Amerindians, Mestizos, Europeans, and Africans. In the last 50 years, Bolivia’s total population has tripled in size. This increase has been accompanied by an intense urbanization process. Between 1950 and 2000, the rural population decreased from 65% to 35% of the national population. In 2007, the urban population increased to 47.3%. In 2000, 15% of the population was under 5 years of age, 40% under 15 years, and 59% less than 25 years. The total fertility rate remains high: between 1995 and 2000, women had 4.4 children on average.

The indigenous population is marginalized and lacks access to health care and basic services. In a study of 50 municipalities (of the country’s 327) with high levels of extreme poverty, where the monolingual native population lives, infant mortality is twice as high as in the 138 municipalities where poverty is the lowest.

According to the information reported, the current distribution of mortality, within the population as a whole, reveals a predominance of cardiovascular causes (40%), followed by communicable diseases (13%) and external causes (12%). Mortality is higher in men than in women (1102 versus 897 per 100,000).

In 2003, 27% of children suffered from chronic malnutrition and of these, 8% from severe malnutrition. Only 26% of the population is covered by the health insurance system, and over half the population practices traditional medicine. The private sector meets only 5 to 10% of the demand for services, which means that the remaining 70% of the population must be covered by the public sector. Limitations on access to the system leads to the conclusion that only half the population that should be served by the public sector actually has access to it; leaving the remaining 35 to 40% of the country’s population without coverage.

Despite the fact that non-communicable chronic diseases (NCD’s) have a great impact on the quality of life of the ageing population, today NCDs also affect younger populations, poor and low-income countries in Latin America and the Caribbean. The lower income countries, such as Bolivia and the Andean region, face the dual challenge of their limited resources to best accommodate both the control of communicable and non-communicable diseases and to reduce infant and maternal mortality.

NCDs are already recognized as a growing public health problem, but its contribution to social inequities as a determinant of premature mortality is not yet well recognized.

In order to capture the attention of the public and governments, Pan American Health Organization offices have a publication that includes an exploratory ecological analysis of the relationship only between premature mortality due to cerebrovascular disease and potential determinants of socio-economic inequality, in the countries of the Andean region: Bolivia, Colombia, Ecuador, Peru, and Venezuela.

Furthermore, there are still no studies on osteoporosis or other musculoskeletal diseases.
KEY FINDINGS

Population growth statistics

The present population of Bolivia is estimated to be 10 million, of which 14% (1.4 million) is 50 years of age and older and 2.9% (292,000) is 70 years and over. By 2050, it is estimated that the total population will rise to 16 million, of which 29% (4.6 million) will be 50 years and older and 8% (1.3 million) will be 70 years and older (fig 1).

FIGURE 1 Population projection for Bolivia until 2050

![Population Projection](image)

SOURCE US Census Bureau

Epidemiology

No available information.

Hip fracture

No available information.

Vertebral fracture, other fragility fractures

No available information.

Diagnosis

According to the Asociación Boliviana de Osteología y Metabolismo Mineral (ABOMM) there are nine DXA machines in Bolivia. This allows for approximately one DXA machine for every 1.1 million inhabitants. It is estimated that the length of wait for a DXA scan is two to three weeks and one day for an ultrasound scan. Equipment is not widely available.

Reimbursement policy

The cost of a DXA scan is 50 USD. The cost of this test is not reimbursed by the government’s universal health insurance for the elderly (Seguro Para el Adulto Mayor, SPAM). Only a few private health care insurance providers reimburse the cost of a DXA scan. The cost of an ultrasound scan is 10-20 USD and is not covered by SPAM or any other type of insurance. Treatment and follow-up is paid for individuals over the age of 60. Osteoporosis medications are reimbursed by SPAM and some private health care plans only if DXA is performed, and only in urban areas.

Calcium and vitamin D

Calcium and vitamin D supplements are available in Bolivia, but laboratory tests to evaluate vitamin D levels are not. These supplements and fortified foods are available only in urban areas.

PREVENTION, EDUCATION, LEVEL OF AWARENESS

Osteoporosis is not recognized as a major health problem in Bolivia and there are currently no official government public awareness programmes covering prevention, diagnosis or management of osteoporosis. There are no governmental health professional training programmes for osteoporosis, but there are approved basic governmental guidelines for prevention, diagnosis and treatment of osteoporosis prepared by the Bolivian Prevention Ministry of Health.

Some private health centers offer programmes in lifestyle prevention of osteoporosis. ABOMM actively provides osteoporosis awareness, prevention and education to physician and patient support groups. Public health awareness programmes are supported via advertisements, public lectures and other public awareness activities organized by associations across the country. Members of the ABOMM, the Rheumatology Society, and the National Chronic Diseases Committee cooperate with physicians and surgeon colleagues in cities throughout Bolivia to provide osteoporosis educational services to aid in diagnosis and treatment.
The level of osteoporosis awareness among the public has not yet been evaluated. There is some corporate involvement in osteoporosis awareness and education via pharmaceutical companies.

Osteoporosis awareness among physicians is increasing due to the efforts of ABOMM but in general, all medical practitioners are not well trained in diagnosis and treatment osteoporosis. Currently, osteoporosis training is not integrated into the medical school curriculum and there are no other accredited training programmes in Bolivia. In general, allied health professionals are poorly trained in this area. Few laboratories can perform biomarker testing and it is unclear how many physicians actually use this testing method.

The ABOMM and the Bolivian Patient Society of Osteoporosis, in cooperation with the Department of Health Services, Universities, OPS (Panamerican Health Organization) and the WHO, provide educational programmes for prevention and management of osteoporosis. These organizations are working hard to bring the issue of osteoporosis to the top of the health care agenda.

During World Osteoporosis Day 2011, ABOMM and its branches conducted various education activities for physicians, patients and the public with the support of local hospitals, universities and health centres. They conducted exhibitions in public schools, seven educational workshops for children, “how to” prepare foods rich in nutrients like calcium, and a “race for nutrition” at the University where two hospitals were involved in teaching physiotherapy exercises.

**RECOMMENDATIONS**

- Greater involvement and awareness of national and international authorities such as the ministries of health, government, OPS, and other organizations are needed. Recognition of osteoporosis as a major national health burden will be important in bringing the problem before major organizations that can provide guidance and assistance in order to effectively educate health professionals and the public alike.

- Decision makers need to be motivated to recognize osteoporosis as a major health issue.

- Health professionals need training in the field of osteoporosis prevention, diagnosis and management with more emphasis on training primary physicians to identify patient risk factors.

- Easier accessibility to DXA is required, with more machines distributed throughout the country.

- More funding for research and training is needed to address the dearth of epidemiological information on the status of osteoporosis in Bolivia.

- Finally, it is important to find cooperation and partnership with medical professionals and international organizations that are willing to facilitate global initiatives to create a world free of fracture and osteoporosis for men, women and children.

**REFERENCES**

1. U.S. Census Bureau, International Data Base 2011
2. Kanis JA, Data on file 2011