

---

**Title : A Dual Nation Study: Comparison of Risk Factors for Osteoporosis and Availability Calcium Rich Foods in the markets in India and Australia**

**Author(s) :** Dr. Anjana Agarwal, Sharon D'Souza,

**Institution :** NIOS, Noida. IGNOU, Mumbai

---

**Background:**

Osteoporosis is a non-communicable, silent bone disease and a public health problem. Its occurrence is not realized till a fracture episode or diagnosed otherwise. Osteoporosis poses a heavy financial toll on the sufferers, their families and the health services in the communities around the globe. The disease is commonly found in postmenopausal women. Main cause of the disease is poor nutrition in addition to poor lifestyle practices for years together.

**Objective:**

The objectives are to study the risk factors and to understand the ways of tackling the chronic disease like osteoporosis among postmenopausal women in a developed country like Australia in comparison to India.

**Methodology:**

200 postmenopausal women subjects (> 45 years of age), 100 from each country was selected from the medical records from hospital in Mumbai, India and Melbourne, Australia. There were 45 non-osteoporotic (NOI) and 55 osteoporotic subjects from India (OSI), who were categorised on the basis of serum calcium level (< 8.9mg/dl). In Australia there were 38 non-osteoporotic (NOA) and 62 osteoporotic subjects from Australia (OSA) who were differentiated on the basis of DXA (Dual energy X-ray absorptiometry) assessment. Information on the risk factors was gathered through phone calls based on the tested questionnaire.

Since calcium and vitamin D supplementation is the first line of treatment for osteoporosis, hence a market survey for calcium-rich (CR) or calcium-fortified (CF) foods was done by personal visits to malls and other places in both the countries, where the subjects used to visit frequently. Data was statistically analysed for test of significance.

**Results:**

Risk factors like age, gender and energy intake did not vary significantly but BMI as the risk factor was significantly different in two geographical regions. OSI subjects significantly consumed less milk products, less non-vegetarian food, no soy products; and did not indulge in smoking, alcohol drinking and exercise. OSI were found consume less protein (47.3g +-7.4 vs 53.0g +-8.0) and calcium 595+-193.63 vs 787mg +- 114.21) as compared OSA. However, protein and calcium intake was below RDA for respective countries. About 73% OSI and 40% OSA take calcium supplements and 57.8% OSI and 69.4% NOA choose rest, exercise and medication as preventive measures. Only 23.6% NOI and 37.1% NOA perform some exercise. Family support was 100% for backache and other health problems among OSI and NOI, whereas only 30% OSA received family support.

According to market survey, more brands and varieties of CR and CF foods were available in Melbourne. CR foods available in Mumbai were labelled to provide approximately 50% of RDA of calcium.

**Conclusion:**

Indian women had low BMI and lower intake of protein and calcium. They suffered from backache and other health problems and got full family support rather than taking preventive measures such as exercise, calcium supplements or testing the bone density. Market availability of calcium rich foods and was relatively less in India as compared to Australia in terms of brand and variety. OSA women underwent BMD test and took preventive measures and consumed non-vegetarian foods, higher intake of protein and calcium, eventually better osteoporotic care among postmenopausal women.