

## Introduction

Osteoporosis (OP) increases the risk of fractures. In Colombia, there is little information on the prevalence of these fractures discriminated by anatomical site, in addition to the differences between men and women..

## Materials and methods

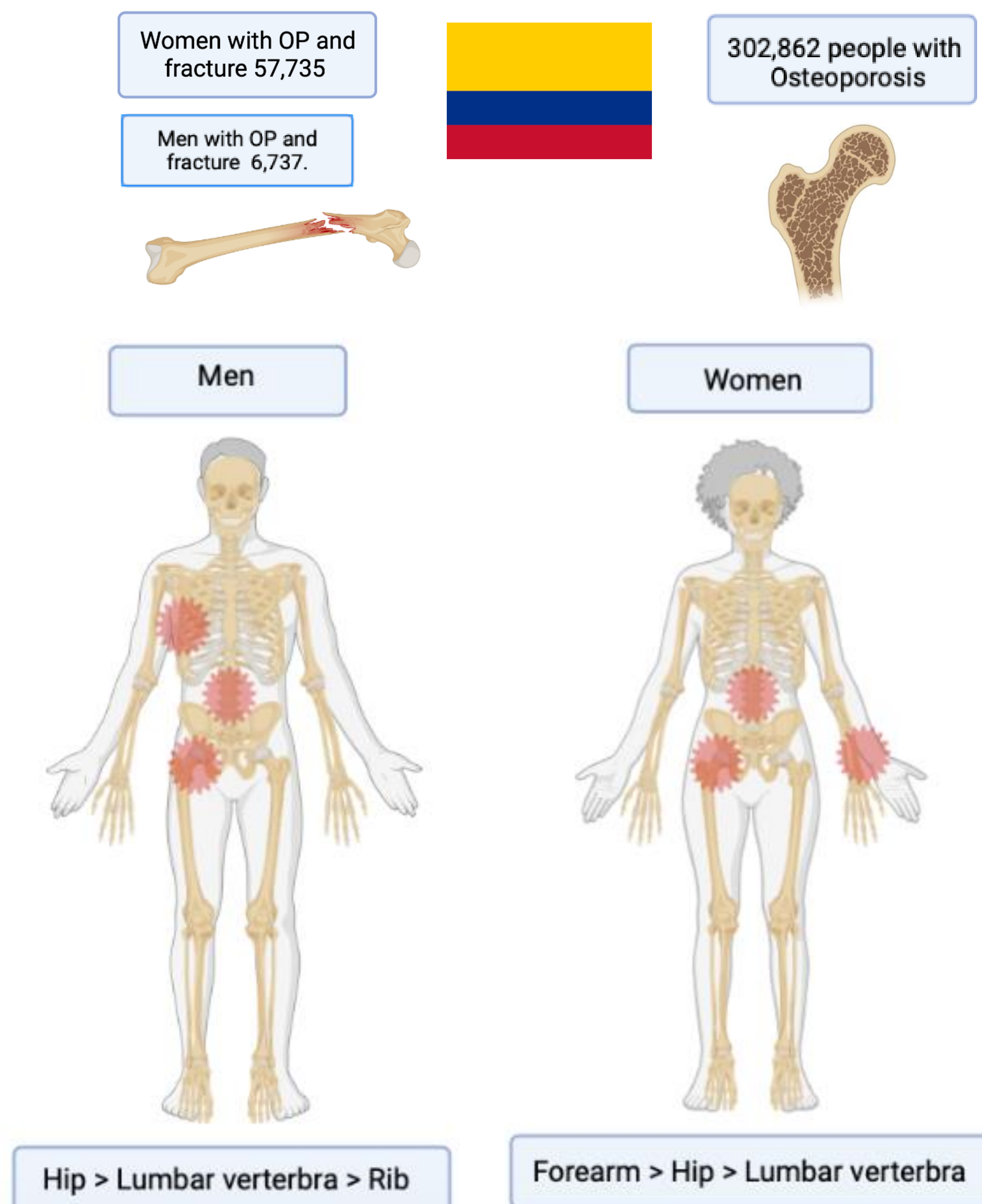
Cross-sectional study. The objective of this study was to establish the frequency of all bone fractures in people over 50 years of age (excluding those of the skull and face), and to estimate how many of these fractures occurred in subjects diagnosed with osteoporosis, based on the database of the Ministry of Health and Social Protection of Colombia (SISPRO) which was reviewed between January 1, 2017 and December 31, 2021. In this way, we estimate the frequency of all types of fractures in men and women with osteoporosis, as well as the increase relative risk or prevalence ratio (PR) of each fracture compared to the general population of the same age group.

## Results

In total, 302,862 people were diagnosed with OP in Colombia, of which 278,902 were women (92.1%) and 23,960 men (7.9%). Women with OP had 57,735 fractures, while men with OP had 6,737.

In men with OP, the most commonly reported fractures were hip (902), followed by lumbar vertebrae (842), ribs (648) and forearm (538). Fractures of the dorsal vertebrae (21.9), lumbar vertebrae (21.3) and ribs (11.83) have the highest PR. It is important to highlight that the PR for a hip fracture is 7.7.

In women, the most commonly reported fractures were of forearm (11,001) followed by hip (6,885), lumbar vertebra (4,813) and thoracic vertebra (2,701).



The highest PR was in fractures of the thoracic vertebrae and lumbar vertebrae. It is noteworthy the PR of hip fracture of 3.3 while that of the forearm was 2.2.

In the total number of women and men with OP, forearm fractures are the most frequent (11,539), followed by hip (7,787), lumbar spine (5,655) and humeral (4,645) fractures.

The highest prevalence ratio was that of dorsal vertebrae (17.7) and lumbar vertebrae (14.4). The prevalence ratio for hip fracture was 4.1.

Table: Total number of fractures in patients older than 50 years in Colombia 2017-2021; number of fractures in patients with osteoporosis, percentage of fractures in patients with osteoporosis and percentage of patients with osteoporosis who suffered fractures in the five-year period.

Fracture	Total fractures	In OP	% of Fx	% of OP	PR
Rib	19,282	1,381	7.2%	0.5%	2.87
Ribs (one or more)	23,227	2,305	9.9%	0.8%	4.09
Sternum	589	51	8.7%	0,0%	3.52
Clavicle	22,542	964	4.3%	0.3%	1.66
Humerus	57,375	4,645	8.1%	1.5%	3.27
Thoracic vertebra	9,900	3,165	32,0%	1,0%	17.47
Lumbar vertebra	20,240	5,655	27.9%	1.9%	14.41
Any vertebra	37,801	9,491	25.1%	3.1%	12.46
Forearm	166,567	11,539	6.9%	3.8%	2.77
Scaphoid	4,801	251	5.2%	0.1%	2.05
Bones of the hand	62,574	2,689	4.3%	0.9%	1.67
Foot	58,654	3,981	6.8%	1.3%	2.71
Calcaneus	5,685	226	4,0%	0.1%	1.54
Astragalus	989	58	5.9%	0,0%	2.32
Hip	78,105	7,787	10,0%	2.6%	4.12
Femur without hip	23,820	2,320	9.7%	0.8%	4.01
Tibia	59,566	2,825	4.7%	0.9%	1.85
Fibula	35,965	1,708	4.7%	0.6%	1.85
Patella	11,325	785	6.9%	0.3%	2.77
Ankle	27,354	1,557	5.7%	0.5%	2.24

OP: osteoporosis; Fx: fractures. PR: prevalence ratio (Colombians with/without osteoporis)

## Discusion

This is the first study in Colombia that describes the frequency of fractures in patients 50 years of age or older with OP, showing the anatomical sites affected, analyzed by gender. The door is opened to discuss whether we are diagnosing OP in a timely manner. This information can be taken as an input for health decision makers.

## Conclusion

In Colombia, OP increases the risk of fracture, especially of the forearm, hip, lumbar spine, and humerus. Men and women with OP have a different risk profile for fractures.

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