Journal of Medical Sciences at NEOMED
Volume 4, Issue 1, March 2025

An Updated Review of Bone Mineral Density and Osteoporosis Prevalence in Postmenopausal Hispanic Women

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ABSTRACT

Background: Osteoporosis is characterized by a loss of bone mineral density (BMD) and bone mass, causing an increased risk of fractures associated with greater morbidity and mortality.[1-4] Aged women are at an increased risk of osteoporosis due to loss of ovarian estrogen following menopause.[5] Older studies suggest that Hispanic women (HW) have a higher BMD on average than non-Hispanic White (NHW) women and are at less risk for osteoporotic fractures.[7-10] The purpose of this literature review is to summarize recent studies on BMD in postmenopausal HW in the United States and to promote bone health education and osteoporosis prevention in this understudied population.

Methods: PubMed and CINAHL searches were conducted using the search terms "bone mineral density", "osteoporosis", "Hispanic", and "women." Inclusion criteria for articles were peer-reviewed, published within the last 20 years, evaluated HW at least 40 years-old in the United States, and measured BMD using dual x-ray absorptiometry (DXA). Studies were excluded that did not fit these criteria: included patients with serious health conditions, involved a specific intervention, or did not include BMD or osteoporosis prevalence as the primary outcome.

Results: Of the 1,216 total articles found, 13 were included in this review based on our criteria. There is a gap in the literature regarding BMD and risk factors for osteoporosis in postmenopausal HW. Nonetheless, there were minimal differences in total body BMD between HW and NHW women, with some evidence of greater prevalence of osteoporosis and osteopenia among HW than NHW women.[11,17,21-23] When assessing BMD with DXA and high-resolution peripheral quantitative CT (HRpQCT), Caribbean HW had significantly lower BMD and poorer microstructural properties at the lumbar spine than NHW women.[12,13] Data from the 2005-2010 and 2013-2014 National Health and Nutrition Examination Survey (NHANES) demonstrated that osteoporosis prevalence is highest amongst individuals who are not U.S. citizens, are unemployed, have lower income and less than a high school education.[15] Additionally, increased abdominal fat mass was associated with poorer bone health in Puerto Rican older adults.[18]

Discussion: Bone health in Hispanic populations involves a multifaceted interplay between various factors, including genetics, hormones, socioeconomic conditions, cultural factors, and lifestyle behaviors, many of which are not fully understood.[14,19,21-22] Osteoporosis exhibits varying prevalence among different Hispanic ethnic groups, revealing notable disparities in comparison to NHW women. Many studies focused on specific Hispanic groups, such as Mexican Americans and Puerto Ricans,[7,9,14,16-19], but there is a broader category of "Hispanics" as defined by the U.S. Census Bureau with notable cultural differences.

Conclusion: This review demonstrated that HW have similar, or in some cases, lower BMD than NHW women in contrast to what older literature may suggest. Future studies that include HW and stratify by cultural subgroups are needed to better assess BMD and risk factors for osteoporosis in this population to prevent a substantial increase in morbidity and mortality associated with osteoporotic fractures in the U.S. Hispanic community.

Keywords: osteoporosis, bone mineral density, Hispanic, women, aging, health education, prevention

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ACKNOWLEDGMENTS

No acknowledgements.

CONFLICTS OF INTEREST

All authors declare no conflicts of interest.