FACTORS ASSOCIATED WITH OSTEOPOROSIS

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ABSTRACT

Background: Osteoporosis is the most common and serious age-related skeletal disorder. Osteoporosis is influenced by genetic, behavior, and environmental factors. The purpose of this study was to examine factors associated with osteoporosis, using National Health and Nutrition Examination Survey (NHANES) data.

Subjects and Method: This was a cross sectional study. A sample of 4,424 was selected for this study. The dependent variable was osteoporosis. The independent variables were age, gender, parathyroid hormone level, calcium level, BMI, alcohol consumption, and smoking. The data were obtained from NHANES 2013-2014. The data were analyzed by path analysis.

Results: The risk of osteoporosis directly increased with older age ($b = 0.77$; 95% CI = 0.62 to 0.92; $p < 0.001$), BMI ($b = 0.84$; 95% CI = 0.43 to 1.24; $p < 0.001$), high parathyroid hormone level ($b = 0.16$; 95% CI = -0.01 to 0.33; $p = 0.055$), and low calcium ($b = 0.99$; 95% CI = 0.35 to 1.66; $p = 0.002$). The risk of osteoporosis directly decreased with male ($b = -1.51$; 95% CI = -1.67 to -1.36; $p < 0.001$) and alcohol consumption ($b = -0.31$; 95% CI = -0.47 to -0.16; $p < 0.001$). It was indirectly affected by parathyroid hormone level and smoking.

Conclusion: The risk of osteoporosis directly increases with older age, BMI, high parathyroid hormone level, and low calcium, but decreases with male and alcohol consumption. It is indirectly affected by parathyroid hormone level and smoking.

Keywords: osteoporosis, risk factor, NHANES 2013-2014

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