

Lifestyle factors influencing bone mineral density in postmenopausal Malaysian women

ABSTRACT

Reduced bone mineral density (BMD) and subsequent osteoporosis is a major public health problem affecting millions of people, especially elderly and postmenopausal women worldwide. Although the key role of a healthy lifestyle on chronic diseases has been established, the importance of these characteristics along with other factors influencing BMD is still controversial. Further, previous studies addressing this issue in postmenopausal Malaysian women are very limited. This study aimed to determine the lifestyle habits that may affect BMD in postmenopausal Malaysian women. In a cross-sectional study, a total of 201 healthy postmenopausal women were interviewed to obtain information on their socio-demographic, reproductive, and lifestyle status. Calcaneal BMD was measured by quantitative ultra sonography (QUS) and was expressed in broadband ultrasound attenuation (BUA) as well as T-score. Food frequency questionnaire (FFQ) was used for calcium intake evaluation and visual analog scale (VAS) was applied for activity level assessment. Correlations of lifestyle factors with BMD were investigated using Pearson's correlation test and multiple regression analysis. A chi-square test and an independent-sample t-test were conducted to compare categorical and continuous lifestyle variables, respectively, in subjects. A hierarchical multiple regression analysis was employed to explore independent variables associated with BMD. All tests were two-tailed, and a 5 percent level of statistical significance was chosen. In a total of the 201 postmenopausal women, 28.4 percent of individuals were osteoporotic and 71.6 percent were normal. BMD was correlated with calcium intake and physical activity while there was no correlation between BMD and coffee consumption. Significant relationships were found between BMD and most investigated socio-demographic and reproductive factors. However, results from a two-step hierarchical multiple regression analysis revealed that the factors that remain significant after adjustment were age, BMI, osteoporosis history, lactation, calcium intake, and physical activity. On the basis of our data, calcium intake and physical activity seem to be major determinants of BMD in post-menopausal Malaysian women.

Keyword: Bone mineral density; Lifestyle; Osteoporosis; Physical activity; Calcium intake; Postmenopause