

ABSTRACT

ASSOCIATION BETWEEN CALCIUM INTAKE, PHYSICAL ACTIVITY, PARITY, BODY MASS INDEX AND BONE DENSITY ON POSTMENOPAUSAL WOMEN

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Background : Osteoporotic on postmenopause women are risk from bone density decrease because no adequate calcium intake, the low of physical activity, too large parity, and the low of Body Mass Index. The other risk factor of osteoporotic on postmenopause women is estrogen decrease.

Objective : To explore the association of calcium intake, physical activity, parity, BMI and bone density on postmenopausal women.

Method : This cross sectional study was conducted in a survey method. Sample were taken by nonprobability quota. The total number of postmenopausal women involved in this research were 97. Data on calcium intake were collected by interview using food frequency questionnaire, physical activity data were collected by asking daily activities questionnaire, parity data were collected by questionnaire. Data on bone density were collected by Quantitative Ultrasounds Bone Densitometry. Association between various variable : calcium intake, physical activity, parity, BMI and bone density, were analyzed using Pearson Bivariate Correlation Analysis. The impact of the those variables on bone density was further analyzed by Linear Regression Method.

Result : 50,5 % of postmenopausal women has adequate physical activity with the average 717 ($\pm 122,4$) Cal/day. 63,9 % of postmenopausal women has normal Body Mass Index with a mean 22,3 ($\pm 3,41$). The mean calcium intake was 783 ($\pm 185,7$) mg/day. The mean parity was 4 (± 2), and the mean bone density was 0,7 (± 0.15) g/cm². The study showed that 84,7 % bone density variation can be explained by calcium intake, physical activity, and parity. The final regression model was bone density = $0.156 + 4.7 \cdot 10^{-4}(\text{calcium intake}) + 3,1 \cdot 10^{-4}(\text{physical activity}) - 1,5 \cdot 10^{-2}(\text{parity})$.

Conclusion : There was positive association between calcium intake, physical activity, and negative association between parity and bone density on postmenopausal women.

Key word : calcium intake, physical activity, parity, BMI, bone density, postmenopausal