Predictors of the Osteoporosis Preventive Behaviors and Bone Mineral Density among Asian Premenopausal Female Workers: An Empirical Study in Taiwan

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Background: Osteoporosis has been regarded as a global problem. Preventive behaviors and risk factors associated with osteoporosis have been widely studied. However, little is known about the contributing factors of the osteoporosis preventive behaviors and bone mineral density (BMD) among Asian premenopausal women. **Purpose:** To investigate the predictors of the osteoporosis preventive behaviors and the relationship between the preventive behaviors and BMD. **Conceptual Framework:** Health Belief Model in combined with the concepts of health motivation and self-efficacy. **Subjects:** 357 female workers from an electronic company in Taiwan (response rate: 84%; 30-49 years old with a mean age of 37). **Method:** A cross-sectional survey study. The Sahara clinical bone sonometer (measuring the BMD of the calcaneus of the dominant side) and a survey questionnaire developed by the researchers were used. Multiple regression analyses were used. **Results:** 9.8% of the participants exercised regularly. 90% of these participants' BMD was within the normal range. Their daily mean calcium intake was 465 mg. The results of the multiple regression analyses showed that health motivation and self-efficacy related to calcium intake were significant predictors of the calcium intake amount (R-square = .204). Joining group exercise, their perceived severity of osteoporosis, benefits/barriers of exercise and self-efficacy of exercise were significant predictors of their exercise behaviors (R-square = .209). Exercise behavior and the levels of the osteoporosis risk factors (age, height, being sports representative, and amount of coffee intake) were significant predictors of these women's BMD (R-square = .122). **Conclusions:** Self-efficacy of calcium intake ($\beta = .34$, $p < .001$) and self-efficacy of exercise ($\beta = .17$, $p < .01$) were the two most significant predictors of these Asian premenopausal women's osteoporosis preventive behaviors. Exercise behavior ($\beta = .21$, $p < .001$) was the most significant predictor of BMD. Practical implications to the occupational health of Asian premenopausal women were discussed.

Key words: osteoporosis preventive behaviors (i.e., calcium intake & exercise behavior), health beliefs, bone mineral density.