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The association between stress level in daily life and age at natural menopause in Korean women: outcomes of the Korean National Health and Nutrition Examination Survey in 2010-2012

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Background: Although several risk factors associated with reduced age at natural menopause (ANM) have been investigated, the results are inconsistent. Excessive stress, which leads to elevation of stress hormones, can also negatively affect reproductive ability, including by accelerating menopause. However, a direct association between stress level and ANM has not yet been demonstrated. Therefore, the object of this study was to investigate the association between stress level and ANM in Korean women.

Method: Study participants were Korean women between 40 and 70 years old who were in natural menopause during the 5th Korean National Health and Nutrition Examination Survey (n=3,176). The level of stress in daily life was estimated based on data from the mental health topics of the survey. We used the t-test and one-way analysis of variance to analyze the correlation between stress level and ANM. Regression (β) coefficients calculated by multiple regression analysis were used to estimate various factors affecting ANM.

Results: Women who experienced a high level of stress in daily life had a lower mean ANM than women with a low stress level (50.17 ± 3.7 and 50.58 ± 3.5 years, respectively), with a statistically significant correlation ($P < 0.05$). This correlation was still observed after adjusting for age, body mass index, menstrual regularity, and personal income ($P < 0.05$ for variables).

Conclusions: in Korean women between 40 and 70 years of age who are in natural menopause, there is a statistically significant correlation between stress level and ANM. in particular, women who experience a high level of stress in daily life have reduced ANM.