

## **Reproductive period and the association with handgrip strength among postmenopausal women: a nationwide cross-sectional study**

### **Abstract**

**Introduction:** early menarche or late menopause results in less muscle loss and higher muscle strength. However, it remains unknown whether the reproductive period considering both menarche and menopause is related to muscle strength in postmenopausal women.

**Methods:** a total of 2,354 postmenopausal women aged 45 to 70 years were analyzed. The reproductive period was divided into 3 quartiles. Handgrip strength (HGS) was measured to evaluate muscle strength. Multiple logistic regression analysis was conducted to assess the association between the reproductive period (exposure) and low HGS (outcome).

**Results:** we found the longer reproductive period, the lower low absolute HGS, low relative HGS, and low HGS of 18 kg or less based on AWGS. This pattern persisted even after adding other variables[low absolute HGS Tertile 1 = 1 (reference); Tertile 2, (odds ratio (OR), 95% confidence interval (CI) = 0.761, 0.570-1.015]; Tertile 3, (OR, 95% CI = 0.694, 0.526-0.915), low relative HGS Tertile 1 = 1 (reference); Tertile 2, (OR, 95% CI = 0.750, 0.553-1.044); Tertile 3, (OR, 95% CI = 0.692, 0.513-0.933), low HGS by AWGS Tertile 1 = 1 (reference); Tertile 2, (OR, 95% CI = 0.814, 0.571-1.160); Tertile 3, (OR, 95% CI = 0.662, 0.432-1.016)].

**Conclusion:** in postmenopausal women, a longer reproductive period is positively associated with low HGS.