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Reduction in menopause symptom severity following a personalised app-based dietary intervention program: a pre-post longitudinal analysis of the ZOE PREDICT 3 study

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Digital health technologies delivering dietary and lifestyle advice^{1,2} may offer a contemporary approach to menopause symptom mitigation in a large population base³. This study aimed to evaluate alterations in both diet quality and menopause symptom burden following the implementation of an app-based, personalised dietary intervention in peri- and postmenopausal participants.

Baseline and follow-up data (mean follow-up time, 207 ± 72 days) on diet, menopause symptom number (from 20 vasomotor, sexual, psychological and somatic symptoms), symptom severity (0-not at all, 1-a little, 3-quite a bit and 5-extremely) and other characteristics of 4,287 UK based participants of the ZOE PREDICT 3 study (1,000 perimenopausal and 3,287 postmenopausal) were analysed (NCT04735835). Dietary assessment was performed through an app-based food frequency questionnaire (PREDICT-FFQ)² and diet quality assessed using the Healthy Eating Index-2020 (HEI, score 0-100)⁴. A novel Menopause Symptom Tracker Score (MSTS 0-100, Copyright © 2024 Zoe Limited) was used to capture symptom number and severity.

There was a modest increase in diet quality after the intervention in both peri- and postmenopausal participants; mean HEI from 76.4 ± 8.4 to 79.7 ± 6.8 (P<0.001) and from 78.7 ± 7.8 to 81.1 ± 6.4 (P<0.001), respectively. Baseline MSTS was higher in peri- versus postmenopausal participants 28.9 ± 15.1 vs. 18.1 ± 15.0 (P<0.001). However, both groups showed a significant decrease in mean MSTS after the intervention compared to baseline; mean change (95%CI) in perimenopausal was -8.7 (-9.5, -7.9; 30.1% reduction) and in postmenopausal was -6.6 (-6.9, -6.2; 36.5% reduction) (P for both <0.001).

The reduction in the overall MSTS was greater in perimenopausal compared to postmenopausal (P<0.001). Reductions in domain-specific MSTS for peri- and postmenopausal groups respectively, were as follows: vasomotor -0.56 (-0.71, -0.40; 24.9% reduction) and -0.47 (-0.54, -0.41; 31.8% reduction), sexual -0.72 (-0.87, -0.57; 18.6%) and -1.08 (-1.16, -0.99; 28.7%), psychological -2.3 (-2.5, 2.0; 35.0%) and -1.2 (-1.3, -1.1; 44.2%), somatic -5.1 (-5.6, -4.7; 31.5%) and -3.8 (-4.0, -3.6; 37.5%) (P for all <0.001). The reduction in the psychological and somatic domain-specific MSTS was greater in peri-compared to postmenopausal group (P for both <0.001).

This study supports the potential of personalised app-based dietary interventions in the mitigation of menopausal symptoms during menopause transition and its potential to affect the health and quality of life of millions. Further studies should investigate their efficacy in a randomised, controlled dietary intervention setting.

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