



## A Smart-Technology-Based Multi-Level Circuit Training Intervention for Workplace Obesity and Health Promotion.

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### Background and objective

This study assessed a workplace health promotion program combining multi-level circuit training and smart monitoring to improve employees' body composition and health behaviors. Screenings revealed abnormal waist circumference, hypertension, and high BMI as key risks, reflecting rising workplace obesity and chronic disease.

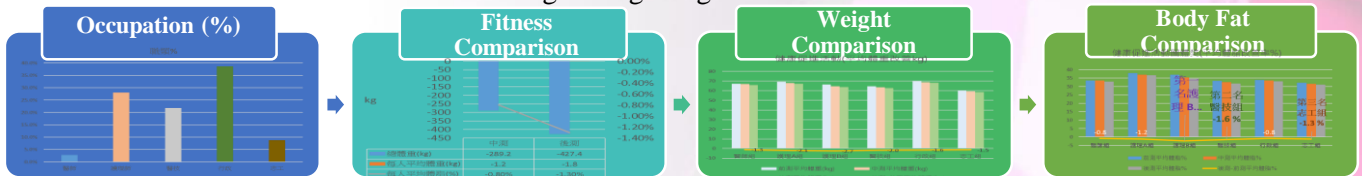
### Methods

The 2025 program delivered 23 sessions on exercise, nutrition, and stress management, engaging 1,659 participants, including 285 in a weight-loss challenge. The exercise component used multi-level circuit training to improve muscular endurance and cardiopulmonary fitness, supported by smart monitoring for real-time heart rate and intensity tracking. Small-group and home-based formats enhanced accessibility and motivation. Nutrition education focused on balanced diets and healthier eating-out choices, while involving employees' families and volunteers to extend community impact.



### Results

Participants lost a total of 490.6 kg (avg. 2.62 kg/person) with a mean body fat reduction of 2.46%. The top three losses were 15.6, 14.0, and 13.2 kg. Overall, 64.8% completed all sessions. Most participants lost 1–3 kg (56.2%), while 17.2% lost 3–6 kg and 7% lost over 6 kg. Fat reduction was 0–3% in 45.1%, 3–6% in 17.2%, and over 6% in 5.1%. Real-time feedback improved motivation, exercise consistency, and dietary habits, though motivation declined after six months with slight weight regain.



### Conclusions

Smart-monitored, multi-level circuit training improved employees' fitness, healthy behaviors, and workplace wellbeing. This integrated approach—combining technology, education, and social support—offers a scalable model for corporate health promotion. Future programs should incorporate diverse challenges, continuous feedback, and motivation strategies to sustain results and prevent weight regain.

### Relevance to HPH

Multi-level training with smart monitoring boosts health awareness and reduces disease risk.