

Thesis Title	Effects of Whole Food Plant Based Program on Body Composition, Pain, Disability and Physical Capacity in Overweight Patient with Osteoarthritis
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ABSTRACT

Knee osteoarthritis is a chronic musculoskeletal disorder commonly found among overweight patients. In 2019, it was reported that the prevalence exceeded 50% of the global population, and in Thailand, approximately 46% of the population is affected. Overweight and obesity are important risk factors associated with disease progression. Increased body weight leads to greater mechanical loading on the knee joint, while excess adipose tissue is associated with chronic low-grade inflammation, which may accelerate cartilage degeneration and increase pain severity. Lifestyle modification, particularly dietary intervention, has therefore gained attention as a non-pharmacological strategy for disease management. However, randomized controlled trials evaluating the effects of a Whole-Food Plant-Based (WFPB) diet on clinical and functional outcomes in patients with knee osteoarthritis remain limited.

To evaluate the effects of a Whole-Food Plant-Based dietary program on body composition, pain severity, disability, and physical capacity in overweight patients with knee osteoarthritis.

This randomized controlled trial included 38 overweight older adults diagnosed with knee osteoarthritis in Chiang Rai Province, Thailand. Participants were randomly assigned to either a WFPB diet intervention group ($n = 19$) or a control group receiving dietary advice based on the Thailand Dietary Guidelines ($n = 19$) for 12 weeks. Body composition was assessed using bioelectrical impedance analysis. Pain severity and

disability were evaluated using the Visual Analog Scale (VAS) and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), respectively. Physical capacity was assessed using the Five-Times Sit-to-Stand Test (FTSST). Data were analyzed using descriptive statistics, repeated-measures ANOVA, and ANCOVA.

The intervention group showed significant reductions in body weight, body mass index, body fat percentage, and visceral fat compared with the control group ($p < 0.001$). In addition, VAS pain scores and WOMAC scores decreased significantly in the intervention group, whereas the control group showed a tendency toward worsening symptoms. Physical capacity also improved significantly in the intervention group, as indicated by reduced completion time in the FTSST ($p < 0.001$).

A Whole-Food Plant-Based dietary program significantly improved body composition, reduced pain and disability, and enhanced physical capacity in overweight older adults with knee osteoarthritis. These findings suggest that a plant-based dietary approach may serve as a promising non-pharmacological strategy for managing knee osteoarthritis in community settings.

Keywords: Whole-food Plant-based Diet, Nutritional, Knee Osteoarthritis, Functional Limitation, Obesity, Degenerative Joint, Pain, Weight Loss