

The 48th Annual Scientific Meeting of the Nutrition Society of Australia, 3-6 December 2024

Participation in a community-based food cooperative improves self-reported food security status and dietary intake in a large sample of Australian adults

K. Kent^{1,2}, C. Brooks^{2,3,4}, T. Attuquayefio⁵, N. Morrison⁶, A. Ewald⁵, G. Alhassani², R. Khosa², J. Wu⁷ and F. MacMillan^{3,4,8}

¹School of Medical, Indigenous and Health Sciences, University of Wollongong, Wollongong, New South Wales, Australia

²School of Health Sciences, Western Sydney University, Sydney, New South Wales, Australia

³Translational Health Research Institute, Western Sydney University, Sydney, New South Wales, Australia

⁴Diabetes Obesity Metabolism Translational Research Unit, Western Sydney University, Sydney, New South Wales, Australia

⁵School of Psychology, Western Sydney University, Sydney, New South Wales, Australia

⁶Urban Transformations Research Centre, Western Sydney University, Sydney, New South Wales, Australia

⁷School of Population Health and The George Institute for Global Health, University of New South Wales, Sydney, New South Wales, Australia

⁸Office of Research, Enterprise and International, Western Sydney University, Sydney, New South Wales, Australia

A growing number of Australians are experiencing challenges accessing and affording healthy food due to climate-related disasters, global supply chain disruptions, and rapid inflation that is affecting the cost of healthy food⁽¹⁾. There is limited understanding of how participation community-based food cooperatives can address these challenges and improve food security and dietary intake. This study investigated the motivations for joining and impact of participation in a community-based food cooperative called Box Divvy on self-reported food security status and intake of fruits and vegetables among a sample of Australian adults. A cross-sectional online survey was conducted among Box Divvy members, that measured sociodemographic characteristics, motivations for joining, self-reported fruit and vegetable intake (serves/week), and food insecurity status (USDA 6-item short form⁽²⁾) before and while using Box Divvy. Participants were classified as being food secure, or experiencing marginal, moderate, or severe food insecurity. Logistic regression assessed demographic predictors and self-reported change in food security status, and ANOVA examined changes in dietary intake before joining and while using Box Divvy. Of participants (n = 2764, 37% aged 35–44 years, 83% European ethnicity, 92% New South Wales residents), most joined Box Divvy to support local farmers (87.3%), and save money on healthy foods (70.6%). Around half of respondents (50.8%) reported experiencing food insecurity before joining Box Divvy (24.5% marginal, 18.4% moderate, 7.9% severe food insecurity). Univariate logistic regression identified age, household structure, and income as significant predictors of food insecurity (p < 0.001). Participants experiencing food insecurity reported significantly lower consumption of fruits and vegetables prior to joining Box Divvy compared to those who were food secure (p < 0.001). While using Box Divvy, 28.2% of participants reported experiencing food insecurity (16.6% marginal, 9.6% moderate, 2.1% severe food insecurity). The odds of food insecurity while using Box Divvy were 62% lower than before joining (OR: 0.38; 95% CI 0.34–0.43; p < 0.001). On average, participants reported their fruit intake increased by 2.5 ± 5.6 serves/week (p < 0.001), and vegetable intake increased by 3.3 ± 5.7 serves/week (p < 0.001). The mean increase was significantly greater among moderately food insecure (fruit mean difference 3.2 ± 6.5 serves/week; vegetable mean difference 3.9 ± 6.9 serves/week) and severely food insecure groups (fruit mean difference 4.4 ± 6.9 serves/week; vegetable mean difference 5.5 ± 7.7 serves/week; p < 0.001). Participation in Box Divvy significantly improved self-reported food security status and fruit and vegetable intake among a large sample of Australian adults. Notably, fruit and vegetable intake significantly increased among those experiencing moderate and severe food insecurity. This underscores the potential of community-based food cooperatives to improve food security and promote healthier eating habits among Australian adults, especially households experiencing food insecurity.

References

1. Lewis M, Herron LM, Chatfield MD *et al.* (2023) *Int J Environ Res Public Health* **20**, 3146.
2. Bickel G, Nord M, Price C *et al.* (2000) Guide to Measuring Household Food Security, USDA, Food and Nutrition Service.