

## Evaluation of a nutrition education and cooking programme (NEST) in vulnerable adults who are at high risk of food insecurity

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Within Australia, the prevalence of food insecure individuals increased from 2.6 million in 2014–2016 (10.8%) to 3.1 million in 2018–2020 (12.3%) due to the COVID-19 pandemic.<sup>(1)</sup> OzHarvest is a not-for-profit organisation that prioritises food salvaging, food waste prevention and nutrition education.<sup>(2)</sup> OzHarvest's education sector facilitates a programme known as Nutrition Education Skills Training (NEST). NEST is a 6-week programme providing weekly workshops of 2.5-hour duration offering skills training on cooking simple, healthy, and affordable meals to adults at risk of food insecurity. This study aimed to determine the immediate and longer-term impacts of participation in NEST. A quasi-experimental study with pre-post surveys ( $n = 258$ ) and follow-up surveys ( $n = 20$ ) was conducted from June 2019 to July 2022. Survey results were obtained from NEST program participants (18 years) from Adelaide, Canberra, Melbourne, Newcastle, Queensland, and Sydney. Baseline (pre-) and post-surveys (at program completion) were administered to participants, with an option for a 6-month follow-up survey. Participants were required to complete both surveys to be eligible for this study. Questionnaires included 23 core questions adapted from previous studies,<sup>(3)</sup> allowing evaluation of nutrition knowledge, confidence and self-efficacy, shopping, and food preparation behaviours, and eating behaviours. Food security was assessed using the standard 6-item indicator set for classifying households by food security status level. Using paired t-tests, Shapiro Wilks, and Wilcoxon sign-ranked tests for pre and post survey data, participants demonstrated overall improvement in nutrition knowledge ( $p < 0.001$ ), confidence and self-efficacy ( $n = 222$ ;  $p < 0.001$ ) and food preparation behaviours ( $p < 0.001$ ). The intake of discretionary foods overall decreased ( $p < 0.001$ ) while fruit, vegetable and water intake increased ( $p < 0.001$ ). Food security improved from 57% to 68% immediately within the population ( $p < 0.001$ ). Using RMANOVA and Shapiro Wilks tests, the 6-month survey results were compared to the pre surveys suggested longer lasting improvements in nutrition knowledge ( $p < 0.001$ ), cooking confidence ( $n = 8$ ;  $p = 0.033$ ), food preparation behaviours ( $p = 0.003$ ), and increased vegetable intake ( $p = 0.032$ ) and fruit intake ( $p = 0.012$ ). Participation in OzHarvest's NEST programme results in short-term improvements in food security levels and dietary behaviours. Over the longer term, these changes were sustained but to a lesser degree, indicating that systemic changes are required to address underlying socioeconomic disadvantage.

### References

1. World Health Organisation (2021) Food and Agricultural Organization of the United Nations, 151.
2. OzHarvest (2022). Available from: <https://www.ozharvest.org>.
3. West EG, Lindberg R, Ball K, *et al.* (2020) *Nutrients* 12 (8), 2197.