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Exploring the impact of an experiential learning experience on nutrition students' knowledge, attitudes and intentions towards sustainable and local food consumption

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Nutrition professionals are needed to be change agents for promoting healthy and sustainable food systems, however, the best methods for preparing students are unclear[1,2]. Experiential learning opportunities, such as hands-on activities with sustainable food systems, could bridge the gap between theoretical knowledge and practical application[3]. This study aimed to evaluate how an experiential learning activity using Farmwall Vertical Garden, an aquaponics system for growing nutrient-dense microgreens, influenced third-year university nutrition students' perceptions, awareness, and knowledge of local food systems, as well as their attitudes and behaviours towards sustainability and local food consumption. Pre-surveys assessed students' baseline knowledge, attitudes, and diet quality was measured using the Australian Recommended Food Score (ARFS)[4]. The hands-on activity with Farmwall, including a seeding activity and recipe development, aimed to deepen their understanding of local food systems, sustainable diets, and links to future professional practice. Post-surveys measured changes in these areas, intentions for behaviour change, and their main learnings from the activity. Quantitative data analysis included descriptive statistics, Chi-Square tests, linear regression models, and McNemar-Bowker tests. Qualitative data was analysed thematically. In the pre-survey, students (n = 58) reported limited knowledge of local food systems (60.3%) but recognised their importance (77.6%) and positive environmental impact (73.3%). Sustainable practices students valued most included purchasing minimally packaged foods (69.0%), ethically certified products (56.9%), and locally grown produce (58.6%), with less emphasis on consuming plant-based (27.6%) and organic foods (31.0%). Chi-square tests revealed that students who believed sustainable food practices were important were significantly more likely to engage in these behaviours ($p < 0.05$). The average ARFS diet quality score was 39.7 ± 8.4, classified as 'excellent '. Linear regression revealed that engagement in sustainable practices, such as growing own food (B = 4.4; p = 0.047) and buying locally grown (B = 5.2; p = 0.029) and seasonal foods (B = 5.8; p = 0.021), was associated with significantly higher diet quality score. The Farmwall activity significantly increased students' knowledge of local food systems ($p < 0.001$) and increased their intentions towards buying locally grown foods (pre = 57.9% to post = 86.8% $p < 0.001$) and growing their own food (pre = 36.8% to post = 78.9% $p < 0.001$). Post-activity responses highlighted students' learning about the complexity of sustainability, the benefits of sustainable dietary practices, and the relationship with the future professional practice. In conclusion, an experiential learning activity with Farmwall significantly improved students' knowledge, attitudes, and intentions regarding sustainability and local food systems. Integrating similar experiences into the curriculum could enhance theoretical knowledge with practical skills, better preparing nutrition professionals to advocate for and implement sustainable practices into future professional practice.

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