



Undergraduate Student Perspectives on Employability: A Mixed Methods Exploration of Nutrition Student Career Awareness, Confidence, and Preparedness

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Abstract

There is a growing need for nutrition graduates to fill diverse roles that will address emerging health priorities including community-based chronic disease prevention, personalised nutrition, digital health, and innovations in food and agriculture. Little is known about how well universities are preparing nutrition students to fill these roles. The aim of this study was to explore undergraduate nutrition students' career awareness, confidence, and preparedness. A secondary aim was to explore their perspectives regarding employability initiatives within the university curriculum. A mixed methods approach was used, including semi-structured focus groups to gain in-depth insights and surveys to expand and diversify the study population, enhancing validity and transferability of the findings. Results of the focus groups were analysed thematically using an inductive approach. Initial themes informed the survey with closed questions analysed using descriptive statistics and open questions analysed thematically. Seven students participated in focus groups and 73 completed the survey. Common themes arising from the focus group and survey responses included a lack of awareness of roles available to nutritionists, lack of placement experience seen as a link to understanding what nutritionists do and getting that first job, and life experiences and personal circumstances influencing career pathways. Practical opportunities for nutrition students to develop their career awareness, confidence, and preparedness should be a key consideration in the design of the undergraduate nutrition curricula.

Keywords

employment;
undergraduate;
nutrition;
workforce;
curriculum;
education;
career

Introduction

Australian nutrition professionals are needed to support complex strategies that address emerging health priorities (Boak et al., 2022; National Committee for Nutrition, 2019). The Australian Academy of Science's decadal plan for the science of nutrition presents social determinants, nutrition mechanisms, precision and personalised nutrition, and improved nutrition literacy and training as pillars of nutrition research needed to support health, wellbeing and economic goals (National Committee for Nutrition, 2019). At a workforce level, Boak et al. (2022) introduced key roles (food aficionados, diet optimisers, knowledge translators, equity champions, systems navigators and food systems activists, and change makers, activists and disruptors) for a nutrition and dietetic workforce that can address established and emerging health and environmental priorities. The growing demand for nutrition professionals to fill these diverse roles is expected to be greater than the current supply (Boak et al., 2022; Hickson et al., 2018; Rhea & Bettles, 2012). While enrolments in nutrition degrees in Australia are increasing, there is a need to ensure that students are not only aware of these positions but are being adequately prepared to take up these positions (Boak et al., 2022; Morgan et al., 2019).

In Australia, nutrition is usually studied at an undergraduate level in a three-year degree program, equivalent to Australian Qualifications Framework (AQF) level 7 (Australian Qualifications Framework Council, 2013). Curricula includes a combination of required and elective units guided by national nutrition science competencies which were developed by leading academic members of the Nutrition Society of Australia (Lawlis et al., 2019). Graduates are equipped to engage in a broad range of existing and emerging career options (Boak et al., 2022), and industry leaders have identified key capabilities needed for successful performance in these roles (Boak et al., 2022; Croxford et al., 2022; Hickson et al., 2018; Lawlis et al., 2019; Morgan et al., 2019; Rhea & Bettles, 2012). The diversity of job opportunities may lead nutrition students to feel uncertain about their career options (Murray et al., 2020). Adding to this uncertainty is the common misunderstanding of the difference between a nutritionist and a dietitian. In Australia, dietitians have one to two years of additional specialised training, including supervised professional placement, enabling them to provide medical nutrition therapy. Nutritionist is a broad professional term that may include dietitians as well as those with undergraduate degrees in nutrition. There is great diversity in roles for nutrition graduates; job titles such as program officer or product development officer make roles more difficult to identify than traditional roles in dietetics (such as food service or clinical dietitian).

Employability is a key responsibility of academic institutions (Bennett et al., 2016), yet academics often feel ill-equipped to prepare their students for graduate employment (Amiet et al., 2021; Bennett et al., 2016). Employability and employment have been described as two separate concepts, where employment relates to being employed and 'finding and creating meaningful paid and unpaid work

that benefits employees themselves, the workforce, the community and the economy' (Oliver, 2015) and employability relates to being employable, or holding 'the skills, understandings and personal attributes that make them more likely to secure employment and be successful in their chosen occupations' (Yorke, 2006). There is a wealth of literature describing issues surrounding graduate employment and employability of dietitians in Australia (Heafala et al., 2021; Morgan et al., 2019). However, little is known about graduate employability in nutrition.

A scoping review of employability initiatives adopted in undergraduate programs identified placements, project-based industry collaboration, practice-based eLearning, mentoring, and building graduate attributes as important elements of programs designed to enhance graduate employability (Murray et al., 2020). Graduate attributes such as problem-solving, effective communication and critical thinking skills are deemed essential for employability and equip individuals with the necessary skills sought by employers (Murray et al., 2020). These initiatives may help to develop students' career awareness (knowing what jobs are available and what these entail), confidence (belief in securing and performing in a meaningful work role on graduation), and preparedness (possessing the necessary skills, understandings and attributes to perform well in their chosen occupation).

Employability initiatives should be tailored to the needs of the industry and the student cohort. Furthermore, the principles of self-determination and co-creation highlight the importance of gaining insight from students themselves to inform the development of employability initiatives (Deci & Ryan, 2012; Sanders & Stappers, 2008). The self-determination theory provides a way of understanding motivation (Deci & Ryan, 2012), and can be applied in the employability context to explain an individual's intrinsic regulatory processes. The most relevant being the need for competence, defined as an individuals' inherent desire to feel effective in one's activity (Deci & Ryan, 2000).

The aim of this study was to explore undergraduate nutrition students' career awareness, confidence, and preparedness. A secondary aim was to explore their perspectives regarding employability initiatives within the university curriculum. The findings will fill a gap in the literature regarding student perspectives and be used to inform future employability initiatives in undergraduate nutrition curriculum. These initiatives should be regularly updated to ensure that they continue to address the needs of the graduate, profession, and service users.

Methods

This research was conducted at La Trobe University between 2018 and 2020. The exploration of student views was conducted as part of a larger project also exploring the views of academics, employers (Croxford et al., 2022) and graduates (Reddy et al., 2023) in relation to human nutrition undergraduate studies and graduate employability. Within the current human nutrition undergraduate course at La Trobe University, career development opportunities included authentic

assessments, industry-based learning activities and seminars outside of the curriculum that included guest speakers from industry or alumni sharing their experiences in the workforce. There were no opportunities for placement within the course.

Exploration of student perspectives occurred in two stages: focus groups held with students during the academic year in 2018, and an anonymous online survey completed by students in 2020. The researchers commenced the work planning to use a constructivist approach, where they could create new understandings about undergraduate nutrition graduate employability by partnering with students as participants of the research in the social construction of knowledge (Mertens, 2019). A constructivist approach typically employs qualitative research methods where multiple views of a phenomenon are collected, synthesised and interpreted, building on previous perspectives and experiences (Mertens, 2019). The research team, all academics and researchers in nutrition science and associated areas, and participants, all students of undergraduate nutrition, come to the research with individual views of employability for human nutrition graduates. A constructivist approach to this research was proposed to further develop understanding of the phenomenon, where participants largely provided new knowledge of the topic while researchers discussed and challenged their own assumptions and beliefs as part of the research process.

This project commenced with a fully qualitative method (focus groups) and was expanded to include mixed methods research (anonymous online surveys) to further explore the findings amongst a wider cohort of students to increase the diversity of views and to develop a deeper understanding of concerns while increasing the validity and transferability of the findings. Ethics approval was granted by the La Trobe University Human Research Ethics Committee (HEC18434).

All undergraduate students (n=125) enrolled in an on-campus undergraduate human nutrition degree program at [blinded for peer review] were invited to participate in focus groups via announcements on the course learning management system between August and September 2018. No exclusion criteria were applied as participation was sought from all enrolled students.

One focus group was conducted for each year level of the three-year course (Year 1 n=2, Year 2 n=2, Year 3 n=3). Focus groups were held on campus and were facilitated by a trained nutrition-qualified research assistant (EM) who was not associated with the course to ensure students could speak freely without any perceived negative consequences of teaching staff, who may be directly associated with subjects or courses that students were taking. Participants were assured that their participation was anonymous and that academic staff would be provided only de-identified transcripts for data analysis purposes. Written informed consent was obtained from all participants prior to commencing.

A semi-structured interview guide (see Appendix 1) was used to guide the focus group discussions. The guide included questions and prompts that encouraged students to discuss expectations of their

degree program, current career aspirations, previous education and work experience, employment skills and concerns, and suggestions for the content and format of curriculum related to employability. The questions were developed based on prior knowledge of the research team obtained through a scoping review (Murray et al., 2020), interviews with industry employers (Croxford et al., 2022), unpublished student surveys, and informal interactions with students, and guided by the aim of informing future employability initiatives.

Focus groups were audio-recorded and transcribed verbatim. Using the process described by Braun & Clarke (2006), transcripts were reviewed and underwent manual line-by-line coding independently by two researchers familiar with the topic area (AN and AB) using an inductive approach via NVivo. Codes were cross-checked for consensus with commonly reported codes forming themes (Braun & Clarke, 2006). Where there was no consensus, discussion with a third investigator (SC or EM) was used to resolve issues and clarify identified themes. Themes were summarised and representative quotes identified to support the narrative.

Following the focus groups, an anonymous online survey (see Appendix 2) was developed using the preliminary themes identified from the focus group data to further explore students' career awareness, confidence, and preparedness, perceptions of employability initiatives in the curriculum, and suggestions for further initiatives. The online survey consisted of a series of closed and open-ended questions and delivered through QualtricsSM. Students were asked to provide basic demographic data on gender, age and year of study. They were invited to share their pre-enrolment career aspirations and whether these had changed over the course of their studies via free text-responses. Participants rated their employment-related concerns using a Likert scale (ranging from most concerning (1) to least concerning (5)). Free-text responses enabled participants to share the knowledge, skills and experiences they felt were most important for them to gain through their studies to support them to achieve their career aspirations, and provide suggestions for improvements to course content and delivery. Specific questions related to work placements were included in response to focus group responses. To increase the volume of responses and promote a more representative sample of student enrolment in undergraduate human nutrition courses at [blinded for peer review], participation was opened to students enrolled in on-campus (n=75) and fully online courses (n= 1,157). No exclusion criteria were applied. The online survey was open for four weeks in June 2020 and advertised on relevant course learning management system sites. All participants completed the anonymous survey in the online format.

Quantitative survey data was analysed using descriptive statistics using Excel (Microsoft Suite, 2020) with frequencies reported in the results. Open-ended responses from the online survey were analysed using Braun & Clarke's (2006) inductive thematic analysis as described above.

Results

Focus Group Findings

Three focus groups were conducted between September and October 2018 with seven students in total across the three-year levels. Participants included two female first-year students, one female and one male second-year student and three female third-year students. All first and second-year participants and two third-year participants had some previous work experience or a degree prior to studying nutrition.

Three key themes emerged from analysis of the data collected in focus groups: lack of awareness of roles available to nutritionists, placement as a link to understanding what nutritionists do and getting that first job, and life experiences and personal circumstances influencing career pathways. Figure 1 provides a thematic map of these themes.

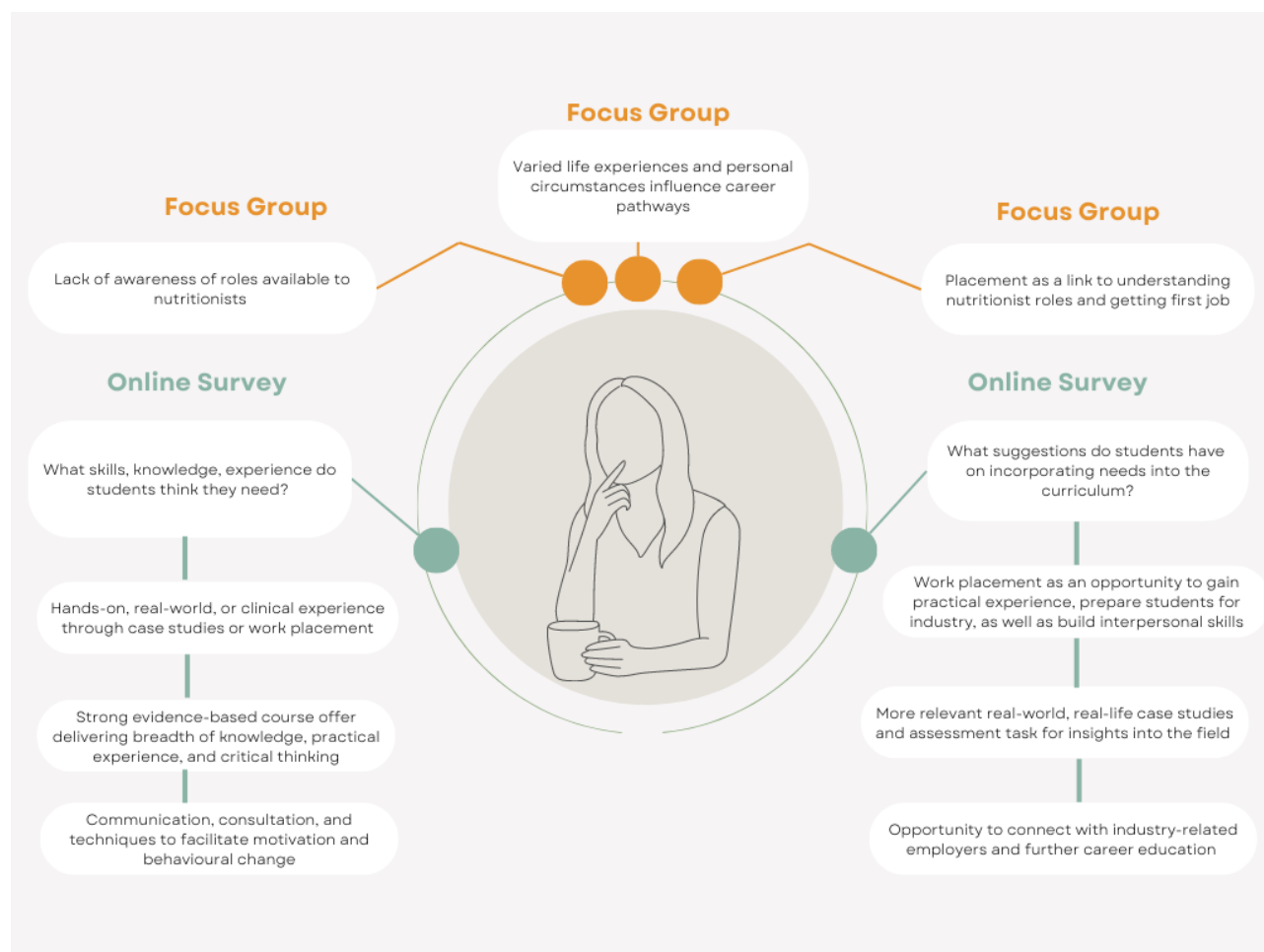


Figure 1: Thematic Map of Key Themes

Participants expressed concern about a perceived lack of jobs available for nutritionists.

Like, there's no jobs on SEEK and then you think, so how many universities are offering nutrition? There must be 200 graduates every year and there's no jobs on SEEK. That's why I'm like I'm going to do my masters ... First-year student.

They also described confusion regarding the different scope of practice of nutritionists relative to dietitians, as shown by this quote from a third-year student: 'There's not a compulsory registration with the [Nutrition Society of Australia]. Anyone can call themselves a nutritionist. I didn't quite understand the differentiation between dietetics and nutrition.' This resulted in a lack of awareness of the roles of nutritionists and the perspective of undergraduate degrees in nutrition providing pathway programs rather than direct career opportunities. One first-year student commented: 'I suppose with nutrition that's a bit more difficult than it is with dietetics because with dietetics, you're training to be a dietitian, whereas with nutrition, we're even saying we don't know where we want to go with it.' Some participants understood that nutritionists have the skills and knowledge to perform a variety of roles, but still did not perceive nutritionist to be a direct career option, such as this comment from a second-year student: 'I know that it's competitive and I know that there aren't necessarily nutrition jobs, it's not actually a role; it's kind of weaved into other aspects. It's not a direct role, like being a dietitian.'

The discussion around lack of specificity of graduate positions was then often linked to a desire to see formal placements as part of the nutrition degree. Participants reported that embedded placements, similar to professional placements for dietetic students, would support them to understand what is involved in nutrition careers, identify areas of interest, apply their knowledge and skills in practical and authentic settings, and provide exposure to mentors and networking opportunities. A third-year student suggested that '[...] exposure to the industry that can help you tailor your education and possibly practical skills volunteering elsewhere or assist you with getting volunteering because they do know people. They can help build that relationship for you.' A first year student made the following analogy:

...you can read a million cookbooks but you can't just walk into a kitchen and be a chef. You know, like you can learn all this on paper but it's actually physically doing it and facing people that are sick and learning that interaction and that compassion and still having that well, this is the knowledge I have and I feel this for you, but this is the knowledge I have and I need to apply it.

In addition to formal placements within the degree, participants talked about the importance of extracurricular volunteering experience. Participants highlighted the benefit of identifying and

consolidating transferable skills and knowledge from their volunteer experiences to their studies and vice versa.

I do a lot of volunteering. So, I think that helps with my people skills. I do volunteering with old people, with [sick] kids, homeless people and whatever. So, those interactions, which are outside of uni, definitely help with my people skills, because a lot of it is communicating with people, no matter what service you're providing to them (Second-year student).

Participants with other work or study experience prior to starting the degree expressed that this helped them have focused career goals and feel better prepared to enter the nutrition industry - '[j]ust having that life experience and that perspective, bigger picture kind of look at what I'm doing and not being so narrow' (First-year student).

However, these participants also acknowledged that due to where they are in their life stage, they faced additional challenges. In particular, they would need to carefully consider the financial implications and the burden their studies would place on their families if they needed to complete any additional postgraduate studies to pursue careers in nutrition.

I also don't want to study forever and do dietetics, [which] is like \$70,000 and you're like, I do have to pay that back. Can I afford that with a mortgage? It sometimes comes down to financial reasons that limits... what you're doing thereafter (Third-year student).

For participants who were high school leavers, the lack of previous experience in combination with the absence of placements led them to feel less prepared about entering the workforce upon graduation.

I wouldn't be confident now to go into a job because I have no experience. I haven't done any of it before. I've just come out with all this degree [full of] knowledge. But I need ... a mentor to help me know how to implement it and all that sort of stuff (Third-year student).

Ultimately, participants recognised that although the university can play a role in supporting students to be career-ready, they should also seek their own work experience opportunities.

Survey Findings

A total of 92 participants commenced the online survey; 73 (86% women) completed all questions and were included for analysis. This corresponded to a 7.5% commencement and 5.9% completion rate. Participants were aged 36+ years (30%), 31-35 (25%), 26-30 (25%), 18-25 (18%). Over half of the respondents were in their first year of study (54%), 18% in their second and 29% in their third year. While 57% indicated they had previous training or work experience, only 19% had experience in the field of food or nutrition.

When asked to report on career aspirations, the goal of most participants was to be employed as a nutritionist (45%), dietitian (17%) or both (14%), while 24% were unsure. Only 10 participants (14%) identified specific roles/activities beyond the broad titles of nutritionist or dietitian, suggesting a lack of awareness of career options. The majority had not changed their career aspirations since starting the course (74%); however, 26% reported a change due to an increased interest in public health, research, teaching, or further study, or change in personal circumstances.

Concerns about finding employment after graduation were highlighted by most participants (58%); only 25% were confident of securing a job and 17% were unsure. The most concerning aspects of finding employment related to job availability (51%), lack of real-world experience (37%) and competitive nature of the application process (37%). A third (33%) of participants were unsure where to find employment. Participants who were not concerned with finding employment reported confidence and a clear understanding of what is required to obtain employment (38%), while 14% had not considered it yet and 14% were confident that their previous experience would set them apart in the application process. Several (33%) reported 'other' reasons for being unconcerned with finding employment. Analysis of free-text responses highlighted that these participants were unconcerned as they were confident their previous life and employment experience would support them to obtain employment in the field, they did not need employment for financial reasons, or they believed the need for nutrition information and guidance in the community would result in job availability. Three participants also responded that they planned to create their own employment opportunity through starting a business or creating food products.

Participants overwhelmingly perceived work placement as useful (89%) and believed this would make them more employable (92%). However, participants were divided in their confidence in sourcing their own placement (5% very confident, 42% somewhat confident); 38% were not very confident or not confident at all (14%).

A thematic analysis of the responses to the question of what skills, knowledge or experiences are important for students to learn or undertake during the course to help them achieve their career aspirations identified three key themes. Free text responses from the survey were de-identified and pooled for analysis. The most common theme was the value of hands-on, real-world, or clinical experience through case studies or work placement. One student commented regarding the importance of real-world experience 'Being able to shadow a nutritionist to see how they interact and work with clients, what tools and resources they use in the field'. The second theme regarded the course offer and the breadth of knowledge gained from the subjects in the degree. Students repeatedly highlighted the strong evidence-base, practical experience, and critical thinking gained from their degree as key to future successful employment. Communication, consultation, and

techniques to facilitate motivation and behavioural change were the third theme identified. For example,

important communication and teamwork skills will be useful, as well as being able to motivate people to engage in the information I am providing them. A strong knowledge of science and human physiology, therefore I can apply this knowledge to all different situations.

and ‘communication skills, tolerance and patience are most important. A wide range of knowledge across all fields/areas of nutrition as well.’

When asked to provide suggestions for improvement and how the course could best incorporate the aforementioned skills or knowledge required to achieve their career aspirations, responses related to three key themes. The most common theme was the incorporation of work placement as an opportunity to gain practical experience, prepare students for industry, as well as build interpersonal skills. One student commented regarding placement ‘[p]lacement will definitely be useful and worthwhile. So hopefully Latrobe offers practice workshops in how to interact with people in the correct way.’ A second theme was the inclusion of more relevant real-world, real-life case studies and assessment tasks for students to gain insights into working in the field. For example, ‘[m]ore hands-on based learning, incorporating subjects/learning where students can get a taste of what it's like to be a nutritionist/dietitian in the real world’ and

[m]aybe through the inclusion of more assessments that simulate the kind of tasks we'd be completing once we graduate and find work. This could be done earlier on in the course to help us to determine the kinds of jobs that interest us within nutrition.

The third theme highlighted the opportunity to connect with industry-related employers and further career education. One student commented regarding industry ‘[u]sing people currently working across different fields of nutrition to demonstrate what their job entails and how it relates to the course’ with another regarding career planning ‘[a]nother is the pathway from finishing the degree. Like a career workshop would be good. Hear from people who've finished their degrees and moved into dietetics or private practice.’

Discussion

The aims of this study were to explore undergraduate nutrition students’ career awareness, confidence, and preparedness, and to understand their perspectives regarding employability initiatives within university curriculum. Insights from focus group discussions and online survey responses revealed that students had a poor understanding of the role of a nutritionist and common concerns about lack of relevant experience, job availability and competition. Students believed relevant knowledge, communication skills and practical, authentic experience were important

curriculum elements to promote employability. Placements as a form of work-integrated learning were highly coveted by students to facilitate the development of employment-related skills and networks. Ultimately, they expected their career pathways to be shaped by their life experiences and personal circumstances.

Considering the diversity of employment opportunities in the field of nutrition (Boak et al., 2022; Croxford et al., 2022; Lawlis et al., 2019), student awareness of career options is important to support employment motivation and job readiness. Over half of the survey participants were most concerned with the aspect of finding employment due to the perception that few jobs were available. Students believed that they would benefit from further career education and an explanation of the variety of jobs that are available prior to graduating. Similar observations have been found in studies of Australian student dietitians who identified narrow views of opportunities available in the diverse field of nutrition and dietetics (Heafala et al., 2021; Hughes & Desbrow, 2005). Such perceptions can contribute to gaps in career development and limit job opportunities (Hughes, 2003). The opportunity to develop skills associated with the breadth of nutrition-related career possibilities should be guided by educators, who are in turn influenced by current national competencies (Lawlis et al., 2019) as well as sector-informed future diverse career opportunities (Boak et al., 2022). Universities should facilitate learning of core and transferable skills and concepts related to these competencies and opportunities. To promote career awareness, educators should reinforce students' understanding of how the course and subject learning outcomes relate to the breadth of future career prospects (Jorre de St Jorre & Oliver, 2018).

Participants in the current study believed that a major barrier to employment was a lack of practice applying their skills and knowledge in a professional setting. Work-integrated learning or industry placements are often viewed as critical by students to getting a foot in the door in competitive graduate job markets (Jackson, 2013). In dietetics, students have received direct appointments to graduate roles following placement, or learned of job opportunities through professional networks established on placement or at university (Heafala et al., 2021). A study of 623 bachelor graduates from various disciplines at an Australian university found that nearly 30% of the graduates interviewed indicated that they would have benefited from additional placement offerings or work placements being available in their course (Jackson & Collings, 2018). Indeed, experiential learning and the opportunity to shadow supervisors in professional or industry environments may help set realistic expectations of career pathways for students. The main suggestion for course improvement provided by current participants was the incorporation of work placement as an opportunity to gain practical experience, to prepare students for industry, and to provide an opportunity to further develop interpersonal communication skills, as well as other desirable graduate attributes.

While placement opportunities came across as the main solution from participants in the current study to increase their employability, the majority of participants (52%) said they were not very confident in sourcing their own placements. It is also important to consider the limited structures and placement models currently in place to provide innovative, strategic placements relative to demand from students (McCall et al., 2009; Taylor et al., 2017). Developing and maintaining work or industry placements is labour and resource-intensive for both educators and industry partners (McLennan & Keating, 2008). In the context of accessible online undergraduate nutrition degrees, the rapidly increasing number of students accessing a limited number of placements may arise as an issue (Universities Australia, 2019). The feasibility of integrating placements into a fast-growing degree and successfully maintaining stakeholder expectations and engagement, while ensuring the maintenance of academic standards, is a key consideration for academics and administrators.

Overwhelmingly, participants expressed that the value of having hands-on, real-world experience would result in greater transferability of their knowledge and skills into a graduate role. Placements aside, alternative models of learning such as practice-based eLearning, simulation, mentoring programs, and integrated learning, where transferable skills are embedded into the curriculum, can also successfully support students to develop desirable graduate attributes (Blackburn, 2017). A large-scale randomised controlled trial testing the effects of substituting up to half of traditional clinical hours with high-quality simulation experiences for nursing students found no differences in pass rates, manager ratings of clinical competency, and readiness for practice between students who received simulation training versus those who received traditional clinical hours (Hayden et al., 2014). Considering the diverse range of employment in nutrition, a strength of these learning models is the flexibility to incorporate varied workplace-based scenarios. Scenario-based learning uses interactive and authentic workplace scenarios with a series of questions to prompt consideration of possible courses of action. It is used by educators to help students develop professional identity, achieve graduate attributes, and become familiar with workplace culture, in addition to delivering content and promoting motivation (Errington, 2011). Scenario-based learning could be used to support students to experience and adapt to the rapidly changing landscape of nutrition employment and to exercise transferable skills within their degree. In comparison to a single placement module, incorporating a range of scenarios into the curriculum may support students to develop a wider range of skills. These models would also be inclusive for students in regional locations or online cohorts who may not be able to undertake an intensive face-to-face placement module.

Another common suggestion that emerged from our student survey was to increase opportunities for students to connect with industry related employers and further career education. Indeed, building relationships, networking with career-relevant professionals and developing communication skills are valuable existing components of placement (Doolan et al., 2019). Jackson and Collings' study of

Australian graduates found that placement directly resulted in paid employment (15%), assisted in the development of professional networks that enhanced future employment prospects, and provided valuable insight into their intended profession and industry (Jackson & Collings, 2018). Yet even with embedded placements, students in their study highlighted the need for courses to offer more networking opportunities and connection with local employers to enhance employability and improve employment prospects (Jackson & Collings, 2018).

In our study, more than a third of participants were concerned about the competitive nature of the application process. In the field of nutrition, competition for graduate employment arising from an increase in undergraduate degree offerings as well as applicants with other qualifications generates a need for courses to not only offer an authentic learning experience but also support participating students to establish professional networks during that experience. Academics can support students to access professional networks with the potential to enhance future employment prospects. Career seminars, networking events and facilitating online connections through platforms like LinkedIn are relatively simple ways for academics to help students develop their career networks (Lexis et al., 2023).

Student mentoring programs may provide another means to enhance student understanding of the field of nutrition and develop professional networks (Besnilian et al., 2016). Students may experience informal and formal mentorship throughout their academic and professional lives, whether it be between student peers, students and academics, graduates and supervisors, as well as between established nutritionists and novice nutritionists (Besnilian et al., 2016). This traditional type of mentoring is often conducted in person; however, mentoring may also take place electronically (An & Lipscomb, 2013). University modules which embed e-mentoring as an effective means to increase accessibility and ease for both the mentor and mentee while maintaining program standards should be considered.

Limitations of this study include potential sample bias through voluntary participation, a low response rate (5.6% for focus groups, 7.5% for online survey), and a survey sample that included many women (86%) and mature-aged students (82% aged > 25 years). Whilst an accurate reflection of the larger cohort of eligible participants at this university, it does not allow for our findings to be generalised to all undergraduate nutrition degree students, nor to all university education settings. However, the mixed-methods approach was a strength of this study. In-depth focus groups provided researchers with the opportunity to probe participants for explanations and the follow-up online survey allowed researchers to further explore salient findings in a larger and more diverse cohort. Due to the time lapse (more than 12 months) between focus groups and survey completion, it is likely that there is limited overlap between the two participant cohorts. However, this strengthens the results of the study with consistent findings across a greater time period.

Undergraduate nutrition graduates have broad skill sets that are relevant to a range of career options. However, nutrition students lack awareness of and confidence in their employment prospects as reflected in our current findings. Students report feeling unprepared for employment and may not identify the transferable skills they have developed during their course. Opportunities for authentic experiences in industry settings such as placements to support the development of skills and networks is highly desirable for students in gaining confidence in applying their knowledge and skills while building their networks and developing career goals. However, placements are labour and resource-intensive and alternatives such as work-based scenarios, industry-based projects and professional mentorship may achieve some of the desired placement outcomes. Further research is needed to explore the feasibility and effectiveness of these strategies in supporting undergraduate nutrition student career awareness, confidence and preparedness.

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Appendix 1

Semi-structured interview guide: <https://doi.org/10.26181/24733698.v1>

Appendix 2

Online survey: <https://doi.org/10.26181/24733842.v1>