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# Competency development needs of the Australian public health nutrition workforce

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## Abstract

*Objectives:* To assess factors affecting competency development of the Australian public health nutrition workforce and investigate competency development intentions, barriers and self-reported training needs.

*Design:* Cross-sectional study using self-administered mail- or email-delivered questionnaire.

*Setting and subjects:* Two hundred and forty practitioners working in designated community and public health nutrition positions in the Australian health system.

*Results:* An 87% questionnaire response rate was achieved. The profile of the sample included female practitioners (95%) within the age range of 26–45 years (67%), from dietetic backgrounds (75%) and employed in state health departments as community dietitians/nutritionists (52%) or public health nutritionists (32%). Only 14% had completed higher degree qualifications but most (80%) reported an intention to do so in the future. Entry-level dietetic education was considered by most respondents (57%) to be inadequate preparation for public health nutrition practice but considered it had utility as a precursor for public health nutrition competency development because of its strong grounding in nutrition knowledge, basic research skills and problem-solving. On-the-job learning was the most prominent competency development influence reported by this workforce. Flexibility in teaching and learning approaches is needed to facilitate workforce participation in further competency development. The main competency development needs focused on analytical and policy process competencies; however, there was a general need expressed for competency development across many competency areas.

*Conclusions:* These data provide intelligence to inform public health nutrition workforce development, particularly that relating to continued professional development amongst the existing workforce.

**Keywords**  
Public health nutrition  
Workforce  
Competency development  
needs assessment  
Australia

Public health workforce development scholarship over the last few years has emphasised the importance of developing a competent public health workforce as a precursor to increasing societal capacity to protect and promote public health<sup>1–5</sup>. As a result, there has been an emphasis on developing competency standards to provide the architecture for workforce development in public health<sup>6,7</sup>, preventive medicine<sup>8,9</sup>, health promotion<sup>10,11</sup> and health education fields<sup>12</sup>. It has also been of interest to public health nutrition scholars<sup>13–17</sup>.

Whilst there is a small but developing literature about competency standards and needs for the public health nutrition workforce, there is little that addresses how workforce competencies are best developed. The level of competence possessed by the public health nutrition workforce at any given time is the product of the interaction between and effects of workforce education

and training processes and workforce management processes in the employment setting<sup>2</sup>. Competency development can therefore be temporally compartmentalised into pre-employment education and training (such as university programmes) and post-graduate continuing competency development (CCD). Post-graduate CCD may take many forms, including further university-based course work, higher research degrees or work setting-based CCD.

A focus on work setting-based CCD has a number of advantages over pre-employment training as a competency development strategy. Public health nutrition competency, considered to be an advanced-level or a specialised practice area, by definition builds on experience and more generic professional proficiencies<sup>18</sup>. It is also recognised that public health nutrition competency development is best facilitated by experiential and

problem-orientated learning<sup>16,19</sup> in the work setting, making it more suited to practice-based learning and consistent with self-directed and adult learning principles<sup>20</sup>. Focusing on the existing workforce also benefits from the privileged access to work situations that encourages CCD via these learning styles<sup>21</sup>.

Where workforce profile data exist, the literature suggests that in countries with relatively organised and developed public health nutrition workforces such as the USA<sup>22</sup>, Canada<sup>23</sup> and Australia<sup>24,25</sup>, the public health nutrition workforce is based on dietetic graduates (not exclusively) who have developed specialist competencies in public health nutrition through a mixture of experiential (on-the-job) learning, workplace CCD or post-graduate course work.

Studies of formal CCD needs assessment in the literature are limited to a number of studies by scholars in the USA<sup>14,26–29</sup>. Intelligence sources in Australia are limited to an unpublished study of the community nutrition workforce in 1995<sup>25</sup>. Evidence from recent Australian studies suggests that competency development amongst the public health nutrition workforce has been largely unplanned, uncoordinated and probably inefficient<sup>18,19</sup>.

The present study was undertaken to help fill the intelligence gaps and identify needs relating to competency development in the Australian public health nutrition workforce, and had two directions of inquiry. The first was retrospectively to assess the competency development experiences of the designated community and public health nutrition workforce (hereafter referred to as the public health nutrition workforce). Second, the study sought prospectively to investigate competency development intentions, barriers and incentives affecting participation in CCD, factors affecting the feasibility of competency development and self-reported CCD needs by competency area.

## Method

### *Study sample*

There was no existing national information system that could be used to assist with the identification and development of a total sample frame. With the assistance of state-level public health nutrition co-ordinators, existing state health department public health nutrition network contact databases were used in all states and territories (except for Victoria) to develop an initial sample frame. Questionnaires, with a request to copy and send on to other known public health nutritionists and/or forward details to the researcher for follow-up (snowball sampling<sup>30</sup>), were distributed to this whole sample. Practitioners on the initial sample contact list who chose to forward questionnaires to others were requested to forward details of these contacts to the researcher to enable total sample frame calculations. Victoria had no existing public health nutrition contact database, so a

mail-delivered questionnaire to all members of the Victorian branch of the Dietitians' Association of Australia (DAA) was used for this workforce sub-population as a basis for further self-selection and snowball sampling. Database contacts consisted of a mix of designated public health nutritionists, community nutritionists, dietitians, health promotion practitioners and other nutrition-related workers in health departments, non-government organisations and other organisations. This snowballing technique identified a total sample frame of 276 practitioners nation-wide (from an initial contact list of 190). All questionnaires included a covering letter inviting respondents to complete the questionnaire and return it either by email or via reply-paid post within a 2-week time frame. Follow-up emails were distributed to non-respondents after this time to encourage participation. No further attempt was made to collect information from non-respondents.

### *Questionnaire*

Data reported in this paper were obtained from a larger questionnaire (238 items) developed for a broader investigation of the designated public health nutrition workforce that included assessment of workforce profile, self-reported roles and practices, training needs and attitudes about competency requirements for effective public health nutrition practice. Only results from 14 questions relevant to competency development are reported here. Questions were modelled on a questionnaire designed for this workforce<sup>25</sup> and informed by an earlier qualitative study amongst advanced-level public health nutritionists in Australia<sup>18</sup>. The questions and the response format used are summarised in the Appendix. Questions included a mix of closed- and open-ended questions. Pilot testing of the whole questionnaire was conducted amongst 39 public health nutritionists based in Western Australia. After questionnaire completion, group debriefing was used to assess questionnaire ambiguity. No changes were required based on this consultation process and the data obtained from this process were subsequently included in the overall analysis.

### *Statistical analysis*

All questionnaire data were entered into SPSS software, Version 10 (SPSS, Inc., Chicago, IL, 2001) for storage and analysis. Descriptive statistics were used to present data on sample characteristics. To assess differences in responses between practitioners in this sample based on reported position type, respondents were categorised as being in public health nutrition-type (PHN-type) positions if they reported the nature of their position to be designated public health nutritionists, nutrition project officers in health promotion teams or nutrition project officers on project grants ( $n = 90$ ). All other positions ( $n = 150$ ) in the respondent sample were categorised as dietitian-type

positions based on the self-reported nature of their position.

Descriptive statistics were used to compare response distributions for all closed-ended questions. Responses from questions with open-ended response options were sorted into response category themes and counted to identify common response themes. Chi-square analysis was used to compare response distributions for multiple-response scale questions by position category (PHN-type vs. dietitian-type positions). It was also used to compare response distributions for utility of dietetic training ratings by years of experience (categorised as <6 years or  $\geq 6$  years). A *P*-value of <0.05 was used as a significance cut-off.

## Results

A total of 240 useable questionnaires were returned from a total sample frame (generated by the snowballing technique) estimate of 276. This represents a response rate of 87% of the known workforce.

### Sample characteristics

The gender distribution of this workforce sample was predominantly female, with only 12 male respondents nation-wide. Just over half (51%) of respondents were 35 years or younger and an equal proportion (52%) had 5 years' or less work experience in community or public health nutrition practice. Almost a quarter of the national workforce was in temporary or casual positions, with considerable variation in the proportion of the workforce in such positions by state. State health departments were the largest employers of this sample ( $n = 180$ ) with non-government organisations employing 20 or less nationwide. The largest proportion of funding for workforce positions was from state health departments (76%) with commonwealth government sources accounting for 10% nationally. Most of the workforce nominated that they served populations smaller than state populations (i.e. zonal, regional or district populations).

### Education profile

The large majority (75%) of respondents in this study had entry-level dietetic qualifications. Eighty-six per cent of

dietetics-qualified practitioners had entry-level dietetic qualifications as their highest qualification. There was a small national pool ( $n = 9$ ) of doctorate-level qualified practitioners in this sample and only 17 nationally with Master of Public Health qualifications. Of the 31 dietetic-qualified practitioners who had completed higher degree research or public health qualifications, most had completed public health coursework (14 Master of Public Health, 10 Graduate Diplomas in Health Promotion).

### Utility analysis of dietetic training

The most common response themes addressing the advantages of dietetic training related to the strong grounding in nutrition knowledge, the wide range of skills attained, health promotion skills, good basic research skills and problem-solving ability. The main response themes relating to disadvantages of dietetic training were the perception that dietetic training was too clinically biased and narrow in its view, provided inadequate training in public health approaches and did not expose students adequately to public health nutrition practice experience.

When asked to rate the adequacy of dietetic training, most (57%) rated it as inadequate to very inadequate, compared with 27% who rated it as adequate or better. Analysis of the effect of years of experience (and by implication years since completing dietetic training) by chi-square analysis demonstrated differences in ratings in terms of training adequacy ( $\chi^2 = 14.49$ ,  $P = 0.06$ ). More experienced respondents ( $\geq 6$  years' experience) were more likely to rate dietetic training as inadequate/very inadequate preparation for public health practice (66%) compared with practitioners with <6 years' experience (48.5%).

### Factors important in professional development

Reflections on factors important in professional development indicated that most of the respondents rated work experience and working with leaders as most important (Table 1). Attending conferences and self-directed learning were also rated highly important by over 50% of respondents.

**Table 1** Factors considered important for professional development

Factor	<i>n</i>	% rating low/very low	% rating high/very high
Working with and learning from leaders in public health nutrition or related fields*	214	14	73
Doing additional training/coursework in public health or related field	205	34	46
Doing work experience in the field	211	6	84
Attending conferences	214	7	59
Writing for publication†	204	52	21
Self-directed learning	213	6	55

\*  $\chi^2 = 13.5$ ,  $P = 0.009$ ; PHN-type positions more likely to rate as high/very high.

†  $\chi^2 = 9.7$ ,  $P = 0.045$ ; PHN-type positions more likely to rate as high/very high.

### Further education intentions

When asked to indicate their intentions regarding doing further professional training, 45% reported they might do so within the next 5 years, 20% reported intending to do so within 12 months and 20% had no intention to undertake further study. These intentions were not significantly different by position type ( $\chi^2 = 1.59$ ,  $P = 0.81$ ), highest qualification ( $\chi^2 = 29.4$ ,  $P = 0.31$ ) or number of qualifications ( $\chi^2 = 21.0$ ,  $P = 0.178$ ).

The areas of further training nominated were mostly related to public health, health promotion, health administration and less frequently clinical specialisation such as paediatrics, sports nutrition and geriatrics.

### Barriers and incentives for continuing competency development

The most commonly reported incentives for further professional development were intrinsic factors such as personal motivation, an individual's assessment of further training needs and the personal rewards associated with self-improvement. The main barriers tended to be extrinsic factors such as time poverty (personal and work time) and the financial costs associated with training (Table 2). There was no significant difference in response distribution by position type for any incentive/barrier.

### Increasing feasibility of further training

Increasing the feasibility of further training appeared to be related to flexibility, in terms of delivery and access, so that training did not interfere with work/careers and income (Table 3).

### Confidence in own ability and skills

Respondents rated their confidence lowest in analytical (e.g. research, epidemiology and statistics), policy and advocacy competencies (Table 4). Competency units

reflecting nutrition and dietetic knowledge and professional practice (e.g. nutrition and disease aetiology, collaborating with other professionals, programme planning, nutrition assessment) were rated highest in terms of confidence. For all significantly different confidence ratings in Table 4, respondents in PHN-type positions rated their confidence levels higher than did those in dietitian-type positions, except for dietetic management of disease.

### Self-reported training needs

Self-reported training needs tended to reflect competency unit importance ratings (Table 5). For all significantly different training need ratings listed in Table 5, respondents in PHN-type positions were significantly less likely to rate their training needs higher than those in dietitian-type positions. There was no significant difference in mean training need ratings by years of experience category (<6 years' vs.  $\geq 6$  years' experience), except for epidemiology and statistics ( $\chi^2 = 9.72$ ,  $P = 0.045$ ), public health principles ( $\chi^2 = 9.71$ ,  $P = 0.046$ ) and food service management ( $\chi^2 = 9.99$ ,  $P = 0.041$ ). Each of these competency units was rated as a higher training need area for practitioners with <6 years' experience.

### Discussion

Sample frame construction in this study was limited by many of the methodological issues outlined in broader public health workforce research<sup>3,31,32</sup>. The lack of information systems required at a national level accurately to enumerate the specialist tier of the public nutrition workforce and the 45% improvement on the sample frame from existing networks justified the snowballing recruitment technique, which used existing networks and 'word of mouth' to access otherwise unknown cases<sup>30</sup>. The differences in state health department structures and the

**Table 2** Barriers and incentives to further developing competencies in public health nutrition, self-reported ratings

Incentive/barrier	% reporting barrier/major barrier*	% reporting unsure/neither	% reporting incentive/major incentive*
Motivation to self-improve/learn	9	18	73
My own assessment of my need to develop my skills in this area	7	32	60
Personal rewards of further training/awards	12	40	48
Opportunities to apply training	23	40	37
Level of support from others	17	56	27
No relevant training available	21	74	5
Level of support from management	26	46	28
Access to information	20	65	15
Contact or access to mentors	28	51	21
Other training more important	13	83	4
Courses are not sufficiently practical	23	72	6
Lack of professional credit/recognition	24	71	6
Scope for employment/progression once further trained	47	30	23
Funding availability	63	27	10
Time available – work	84	12	5
Cost of further training	84	15	1
Time available – personal	85	10	5

Percentages are rounded to the nearest integer.

\* Likert scale collapsed from 5-point to 3-point (barriers, unsure/neither and incentives).

**Table 3** Factors that would make further training more feasible

	Number of responses	%
Able to be integrated with existing job role	175	78
Able to be taken part-time	157	71
Able to be taken mostly off-campus	152	69
Professionally recognised, e.g. accredited	127	57
In modular format, allowing progressive accumulation of work as circumstances permit	113	51
High level of interaction with academic mentors	64	29
Strongly focused on advanced-level practice	63	28
Strongly focused on developing and applying research skills	57	26
Able to be taken in intensive mode (e.g. three semesters a year instead of two)	19	9

More than one answer was allowed.

variable networks developed in each state had an impact on the sample frame construction, particularly in Victoria, which relied on a profession specific network (DAA) as a basis for snowball sampling. The sample was self-selecting in that individuals had volunteered to be part of a public health nutrition network or, in the case of Victoria, had responded to a questionnaire specifically requesting responses from practitioners working in community and public health nutrition.

The response rate achieved using the mostly email-delivered questionnaire, 87%, provides an adequate representation of the known public health nutrition workforce, with a low risk of response bias. This response rate compares favourably with those from other questionnaire-based studies of similar workforce groups<sup>23,25–28,33,34</sup>.

Assessing competency development needs is an important workforce development intelligence gathering

**Table 4** Confidence ratings of ability and skills by competency areas

Competency unit	<i>n</i>	Significant difference by nature of position*	% reporting more than adequate (proficient/expert)	% reporting average/adequate for practice	% reporting less than adequate for practice
Market research	230	<i>P</i> < 0.08	5	28	67
Economic evaluation	230		6	37	58
Epidemiology and statistics	230	<i>P</i> < 0.0001	10	39	50
Nutrition monitoring and surveillance	231		18	38	45
Collaborating with food industry	232		16	40	44
Food service management	228		17	42	41
Media skills	232		16	40	44
Scientific writing	232	<i>P</i> < 0.009	21	37	43
Financial management	231		18	46	36
Quantitative research skills	230	<i>P</i> < 0.001	21	41	38
Policy development processes	230	<i>P</i> < 0.0001	19	48	33
Qualitative research skills	231	<i>P</i> < 0.0001	25	39	36
Food science	230		18	56	26
Advocacy	230		24	44	32
Submission writing	228	<i>P</i> < 0.0001	25	46	29
Capacity building	232	<i>P</i> < 0.0001	26	47	27
Research presentation skills	231	<i>P</i> < 0.004	28	44	28
Managing staff	231		27	48	25
Community development	232	<i>P</i> < 0.033	30	47	23
Behaviour change theories/models	231		29	50	21
Developing strategic plans	230	<i>P</i> < 0.0001	33	46	21
Health promotion theories/models	231	<i>P</i> < 0.025	31	49	19
Strategy development/selection	231	<i>P</i> < 0.0001	40	38	22
Public health principles	231	<i>P</i> < 0.0001	39	40	21
Literature review and interpretation	231		32	52	16
Using IT to retrieve information	232		38	43	19
Negotiation skills	232		41	45	14
Needs assessment	230	<i>P</i> < 0.0001	40	44	16
Network development	229	<i>P</i> < 0.0001	42	46	12
Dietetic management of disease	229	<i>P</i> < 0.005	49	39	12
Coalition/team building	233	<i>P</i> < 0.016	43	48	10
Programme evaluation	230	<i>P</i> < 0.006	44	43	13
Nutrition assessment methods	229		43	52	5
Nutrition through life cycle	229		52	44	4
Nutrition and disease aetiology	230		53	44	3
Programme planning	233	<i>P</i> < 0.02	54	37	8
Collaborating with other professionals	230	<i>P</i> < 0.002	73	25	2

\*  $\chi^2$  analysis, PHN-type vs. dietitian-type.

**Table 5** Self-reported training needs by competency area

Competency unit	<i>n</i>	Difference by nature of position*	% reporting don't need/definitely don't need training	% reporting unsure	% reporting need training/definitely need training
Policy development processes	218		16	18	66
Epidemiology and statistics	217	<i>P</i> < 0.041	19	18	63
Media skills	218		18	15	67
Economic evaluation	215		15	25	60
Advocacy	217		17	24	59
Quantitative research skills	218		21	18	61
Market research	218		16	28	56
Qualitative research skills	218		21	20	59
Nutrition monitoring and surveillance	217		21	30	49
Submission writing	215	<i>P</i> < 0.001	27	20	53
Capacity building	217		27	27	50
Financial management	217		27	27	49
Strategy development/selection	218		26	29	45
Developing strategic plans	218	<i>P</i> < 0.042	30	25	45
Scientific writing	217		32	23	45
Community development	219	<i>P</i> < 0.002	32	29	39
Collaborating with food industry	217		27	36	37
Managing staff	218		34	26	40
Public health principles	219	<i>P</i> < 0.015	35	22	43
Using IT to retrieve information	215		34	23	43
Behaviour change theories/models	217		34	26	40
Research presentation skills	218		34	29	37
Programme evaluation	218		40	17	43
Negotiation skills	217		36	30	34
Health promotion theories/models	215	<i>P</i> < 0.017	45	22	35
Needs assessment	218	<i>P</i> < 0.012	45	23	32
Coalition/team building	219	<i>P</i> < 0.017	45	27	28
Programme planning	218		50	18	32
Literature review and interpretation	216		46	25	29
Network development	218	<i>P</i> < 0.02	48	24	28
Food service management	219	<i>P</i> < 0.05	54	22	24
Food science	218		55	31	14
Nutrition assessment methods	214		50	22	18
Nutrition through life cycle	217		68	20	12
Collaborating with other professionals	218		69	21	10
Nutrition and disease aetiology	217		71	17	12
Dietetic management of disease	218		71	17	12

\*  $\chi^2$  analysis, PHN-type vs. dietitian-type.

strategy<sup>35</sup>. Learning is more likely to lead to changes in practice when needs assessment has been conducted, the education is linked to practice, personal incentive drives the educational effort and there is reinforcement of the learning<sup>36</sup>.

Reflections on the limited utility of dietetic training as preparation for public health nutrition practice and the dominance of practitioners with dietetic training as their highest qualification reinforce the important role of CCD in the work setting. The trend noted amongst older graduates, who rated the utility of dietetic training lower than more recent graduates, may reflect curriculum improvements over time; however, this cannot be confirmed without more specific review of contemporary dietetic training programmes. Whilst it is accepted that dietetic training in Australia is intended to develop entry-level competencies, the importance of pre-employment dietetic training as the foundation workforce preparation programme in this workforce demands that curriculum and competency development strategies relevant to public health nutrition be conducted in these training programmes.

Public health nutritionists, like other health workers, practise in a rich learning environment, constantly surrounded by professional interaction, information, feedback and problem-solving. Most learning and competency development is situated in the workplace, integrated with their practice and arises from it<sup>36</sup>. The experiences of the majority of this workforce in learning on the job and through interaction with leaders is consistent with this learning, and concurs with the competency development pathways reported by advanced-level public health nutritionists in an earlier Australian study<sup>19</sup>. Because these reported learning methods reflect on past experiences in an environment of limited formal public health nutrition-specific CCD or post-graduate course availability, they do not necessarily reflect the most efficient approaches to competency development. Competency development intervention studies are required in order address questions about competency development efficiency.

The data on further training intentions (80% intending to do further training) and the limited number of

post-graduate qualified public health nutritionists suggest that there is a considerable market and need for public health nutrition-specific CCD and advanced-level competency development programmes in Australia. The small relative size of the workforce, and the small and dispersed faculty and funding systems of universities nationally, limit the viability of developing public health nutrition offerings by individual universities. Academic and cross-institutional collaboration to provide advanced-level competency development in public health nutrition, such as that developed in the European Union<sup>37</sup>, would be valuable. The recent funding of a national virtual faculty in public health nutrition, involving collaboration between numerous public health nutrition academic groups, should help alleviate this problem in Australia.

Formal training to develop public health nutrition competencies needs to be flexible and student-centred if it is to engage the workforce successfully. Most of this workforce are currently employed practising in the public health nutrition field and require further study to be integrated into their existing work. This will require a greater interaction between universities and employers. It also provides an opportunity to apply teaching and learning strategies that reflect contemporary views about health professional competency development, such as problem-based<sup>38</sup>, situated<sup>36</sup>, self-directed learning and reflective practice<sup>20</sup>.

The most prominent reported motivations to further develop competencies in public health nutrition in this population were those considered to be intrinsic motivations, which is consistent with the features of adult and self-directed learning<sup>20</sup>. Barriers to continuing professional development reported were similar to those found in American studies of the dietetic workforce<sup>39,40</sup>. Time poverty in the workplace and financial constraints may reflect a lack of employer support for CCD and suggest that workforce development strategies should focus on creating a workplace environment that supports and encourages ongoing competency development. This means that organisational change within the workplace may be needed rather than more CCD courses or training programmes.

A practitioner's confidence in his or her own ability and skills may be an important variable impacting on practices<sup>41</sup>. This notion is based on the concept of self-efficacy, which asserts that an individual's judgement of their own ability to deal with certain situations is central to their actions<sup>20</sup>. Self-reporting of confidence may also be an indicator of competency development needs and has been used in CCD needs assessment studies in the public health workforce<sup>42</sup>. The similar competency units identified as being low confidence and high training need support this relationship between confidence and professional development needs.

This workforce, and particularly the dietitian-type group, reports the most confidence deficits and training

needs in analytical and policy process competency areas. The large number of competency units that have over 30% of respondents reporting training needs, however, suggests that this workforce rates itself as under-prepared for optimal public health nutrition practice. This reinforces a need for ongoing workforce development with the existing workforce via CCD, as well as focusing attention on enhancing graduate preparation in programmes such as dietetics.

The competency units commonly identified as a focus of training need in this study are similar to those identified in earlier CCD studies<sup>25–27,43</sup> and provide information to inform workforce development via continuing professional education. However, caution should be exercised to ensure that competency development strategies are not restricted just to needs identified in these data. Exclusive reliance on formal needs assessment could render ongoing education an instrumental and narrow process rather than a creative and professional one<sup>36</sup>.

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**Appendix – Summary of questions and response format used in survey instrument**

Question	Response format
Age	Closed-ended multiple-choice (5 age-range categories)
Gender	Closed-ended multiple-choice (male and female categories)
Title	Open-ended script
Nature of position	Closed-ended multiple-choice (13 response categories, including other)
Employer	Closed-ended multiple-choice (6 employer categories)
Number of years experience working in community nutrition/public health nutrition	Open-ended
What qualifications have you completed?	Open-ended
Rate on the following scale the adequacy of your nutrition and dietetic training in preparing you for public health nutrition practice	5-point scale (1 = very inadequate, 2 = inadequate, 3 = neutral, 4 = adequate, 5 = very adequate)
In your opinion, what are the advantages/ disadvantages that nutrition and dietetic training provides for public health nutrition practice? [dietetic graduates only]	Open-ended
Thinking about your own experience throughout your career, rate how important the following factors have been in your own professional development	7 factors listed including other, 5-point response scale (1 = very low importance, 2 = low importance, 3 = average importance, 4 = high importance, 5 = very high importance)
What are your intentions regarding doing further professional training?	5-point scale (1 = no intentions, 2 = may do within next 5 years, 3 = planning to commence in next 2 years, 4 = enrolling within next 12 months, 5 = currently enrolled)
If you intend to do further professional training, what area are you intending to train in?	Open-ended
Which of the following do you think are barriers or incentives to you further developing your skills in public health nutrition?	18 factors listed including other, 5-point response scale (1 = major barrier, 2 = barrier, 3 = unsure/neither, 4 = incentive, 5 = major incentive)
Rate the confidence you have in your own ability and skills in the following competency areas	38 competency areas listed including other, 6-point response scale (1 = expert, 2 = high/proficient, 3 = adequate for practice, 4 = below ideal, 5 = very low, 6 = novice)
Rate the extent to which you need further training in the following areas	38 competency areas listed including other, 5-point response scale (1 = definitely don't need training, 2 = don't need training, 3 = unsure, 4 = need training, 5 = definitely need training)