

Definitions for public health nutrition: a developing consensus

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Abstract

Objectives: To assess the level of agreement amongst a panel of public health nutrition leaders regarding the key descriptors used to define the field of public health nutrition.

Design: Cross-sectional survey requiring quantitative and qualitative responses representing the first round of a consensus development Delphi technique.

Setting: International.

Subjects: Expert panel of 24 public health nutrition leaders from nine countries in the European Union, the USA and Australia.

Results: All but one of the panel agreed it was important to have a consensus definition for public health nutrition to describe the field consistently. Opinion about the length and complexity of this definition tended to vary depending on the intended use of the definition. The large majority (18/24) supported the inclusion of specific reference to physical activity in a definition of public health nutrition, although there was not consensus (>83% agreement as criterion) on this point. Consensus descriptors regarded as important in a definition of public health nutrition included: population-based, focus on health promotion, food and nutrition systems focus, wellness maintenance, primary prevention, applies public health principles, education, environmental and political descriptors. Treatment as a descriptor was rated as unimportant by a majority (14/24) of panellists, delineating public health nutrition from clinical practice.

Conclusions: There is strong international agreement amongst public health nutrition leaders in Europe, the USA and Australia about a range of descriptors that can be used to define public health nutrition. The limitations of using word-for-word definitions between and within countries may be overcome by explicit use of the consensus descriptors identified in this process.

Keywords
Public health nutrition
Definition
Consensus development

During the last decade there have been various attempts in the international literature to define public health nutrition as a field of nutrition practice distinct from the well-established professional practice of clinical nutrition and dietetics^{1–5}. This literature has developed from considerable effort and debate amongst professionals and organisations in response to health service policy shifts consistent with the public health, health promotion and primary healthcare movements. It has also been in response to efforts to raise the awareness of public health nutrition as a profession or mode of practice delineated from clinical practice paradigms^{1,3}.

Public health nutrition as a field of practice is not a recent development for the health workforce dealing with nutrition problems. Population-based approaches have been the mainstay of nutrition work for decades in many countries. There is, however, evidence that public health nutrition workforce development is increasingly becoming a focus of effort world-wide⁶.

In the late 1990s the Nutrition Society in the UK identified the need for a definition of public health nutrition to make explicit the broad vision, intention, character and commitment to popular service values included in the definition³. Statements that define a field of practice or a type of work are important in workforce development because they help describe the work needed and in turn provide direction about the type of worker and competency mix required for that work. Definitions serve as a statement of intent, philosophy and method, important for the communication of what the field entails. This has implications for marketing, development of professional identity and systematic workforce development.

Table 1 lists definitions found in the international literature since 1997 and includes the definition adopted by the national public health nutrition strategy in Australia⁷. This definition differs from others in that it makes a point to specifically define what public health

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Table 1 Definitions that have been suggested for public health nutrition from the literature

Authors (country of origin)	Definition
Hughes and Somerset ¹ (Australia)	Public health nutrition is the art and science of promoting population health status via sustainable improvements in the food and nutrition system . Based upon public health principles , it is a set of comprehensive and collaborative activities, ecological in perspective and intersectoral in scope, including environmental, educational, economic, technical and legislative measures
Rogers and Schlossman ² (USA)	The term 'public nutrition' has been defined as a new field encompassing the range of factors known to influence nutrition in populations , including diet and health, social, cultural and behavioural factors; and the economic and political context. Like public health, public nutrition would focus on problem solving in a real-world setting, making its definition an applied field of study whose success is measured in terms of effectiveness in improving nutrition situations
Nutrition Society (Landman <i>et al.</i> ³) (UK)	Public health nutrition focuses on the promotion of good health through nutrition and the primary prevention of diet-related illness in the population . The emphasis is on the maintenance of wellness in the whole population
Yngve <i>et al.</i> ⁴ (EU)	Public health nutrition focuses on the promotion of good health through nutrition and physical activity and in the prevention of related illness in the population
Johnson <i>et al.</i> ⁵ (USA)	Public health nutrition practice includes an array of services and activities to ensure conditions in which people can achieve and maintain nutritional health, including surveillance and monitoring nutrition-related health status and risk factors, community or population -based assessment, programme planning and evaluation, leadership in community/population interventions that collaborate across disciplines, programmes and agencies, and leadership in addressing the access and quality issues around direct nutrition services to populations
Strategic Intergovernmental Nutrition Alliance ⁷ (Australia)	Public health nutrition focuses on issues affecting the whole population rather than the specific dietary needs of individuals. The impact of food production, distribution and consumption on the nutritional status and health of particular population groups is taken into account, together with the knowledge, skills, attitudes and behaviours in the broader community

Bold items identify the origin of descriptors for testing in the Delphi survey.

nutrition is not (i.e. 'rather than the specific needs of individuals') in order to delineate public health nutrition from clinical modes of service. Close assessment of the descriptors used in each definition identifies a number of consistencies, suggesting that there is a developing consensus internationally about how public health nutrition as a field of practice is defined.

The present study was undertaken in order to assess the level of agreement amongst a panel of experts involved in public health nutrition practice and education regarding the key descriptors used to define the field of public health nutrition.

Methods

This study is based on data from the first round of a Delphi study investigating and developing consensus relating to public health nutrition definitions, workforce composition, core functions and competencies.

The Delphi technique has been used widely in health research within the fields of technology assessment, education and training and in developing practice areas, and the method has recently been systematically reviewed⁸. The aim is to determine the extent to which experts agree about a given issue. The technique can be applied to both the measurement and development of consensus⁹. It involves an iterative series of questionnaires delivered by mail or electronically to a panel of experts who respond to questions based on information and result summaries of earlier rounds compiled by the researcher

relevant to the research objectives. The logic behind the Delphi method is partly statistical, that combined numerical estimates of participants' views would in general lead to more reliable estimates than obtained from a single person⁸.

In this paper, results from the first round of a larger consensus development study are presented. Further iteration relating to definitions in subsequent rounds was not attempted because of the high levels of agreement obtained after this initial survey round. As a result, the methodology described here is best described as a cross-sectional survey of experts.

Literature review

A literature review was undertaken to search for published literature relating to public health nutrition practices, training needs, competencies and workforce development, in order to isolate definitions used by authors to describe and define public health nutrition. An Internet search was also conducted to identify non-peer reviewed government and organisational reports (grey literature) relevant to the search topics. Definitions and descriptors used in the literature were used to compile a list of descriptors for consideration by the expert panellists (cf. Table 1).

Panel recruitment

Invitations to participate in the Delphi group process were extended to a total of 37 public health nutrition experts in the European Union (EU), the USA and Australia.

The sampling objective was to engage leaders in public health nutrition practice and/or education and training from various countries in the Delphi process. The sampling of a homogeneous group was purposive because the study aimed to define common ground and maximise areas of agreement. This approach is consistent with findings and recommendations from a recent systematic review of consensus development methods in health guideline development⁸.

EU experts were sampled from the existing EU Master of Public Health Nutrition (EMPHN) network, which consists of academics and practitioners representing 17 EU countries/universities. Experts invited from the USA included five senior academic/practitioner public health nutritionists with an established scholarship publication record in public health workforce development. Fifteen of the most commonly nominated public health nutrition leaders from Australia, identified in an earlier qualitative consultation amongst advanced-level public health nutritionists conducted by the author¹⁰, were also invited to participate.

From this invitation process, 24 public health nutrition experts from seven different countries in the EU, USA and Australia (EU = 9, USA = 5, Australia = 10) agreed to participate as expert panellists. The panel composition was homogenous in the sense that panellists were public health nutrition leaders in practice and/or education and training in their respective countries.

Survey process

A summary of the literature relevant to definitions of public health nutrition, prepared by the author, served as pre-reading for panellists. An electronic copy (pdf file) of the summary information was emailed to panellists with questions embedded in a downloadable word processing document. Panellists were instructed to read the information summary and then answer questions directly in the document. Panellists returned completed questionnaires as a file attached to an email to the author. All 24 of the public health nutritionists who agreed to participate in the expert panel responded to the Round 1 questions.

Round 1 questions

Four items from the Round 1 questionnaire related to definitions. The first involved a Likert scale used to rate panellists' perceptions of the importance of 20 different descriptors extracted from definitions isolated

in the literature review (Table 3). A rating scale of 1 to 5 was used, with 1 being very important, 3 being neutral and 5 being very low importance. Panellists were also asked to rate on a 5-point scale their agreement with two statements relating to the importance of a consensus on definitions and the inclusion of reference to physical activity in definitions of public health nutrition (Table 2). Panellists were invited in an open-ended question to nominate other descriptors or make additional comments relating to definitions.

Analysis

Completed questionnaire data were descriptively analysed. Data have been presented as response distributions (response frequencies from a maximum of 24 responses), with written responses from open-ended questions being subjected to content analysis. Actual comments as written by panellists are provided in *italic* to reinforce or emphasise points considered relevant to the topic.

Consensus was considered to exist if greater than 83% (≥ 20 of 24 panellists) agreed in each response category.

Results

Having a definition is important

All but one of the expert group agreed it was important to have a consensus definition for public health nutrition to describe the field consistently (Table 2). A number commented on the preference for a brief definition rather than a longer, more descriptive one. These preferences tended to be influenced by considerations about what the definition was to be used for (i.e. to describe the field succinctly to others). The following represent verbatim quotations from selected expert replies to open-ended portions of the survey questionnaire:

'If the definition is very broad, as in the first Australian example, I feel it loses some of its focus and can be interpreted in many different ways. I feel at this stage we need to be able to describe PHN clearly and simply so that others can quickly grasp what are about – what we offer that is unique from a public health or health promotion, etc. We have to consider and be careful that we give the impression that we are unique in what we do – otherwise why not be a subgroup of public health, and not bother with a separate identity.'

'Agreement about what something means is important so people understand each other easily, but the definition

Table 2 Response distributions for agreement to questions relating to public health nutrition definitions

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Having a consensus definition for public health nutrition to describe the field consistently is important	13	10	1	0	0
Public health nutrition as a field of practice should include a focus on physical activity as well as nutrition	8	10	4	2	0

Table 3 Importance ratings for descriptors of how experts define the field of public health nutrition (descriptors in bold meet the consensus rule of > 83% or ≥20/24 agreement)

Descriptor	Source of descriptor (reference)	Very important	Important	Neutral	Not important	Very low importance
Population-based	1, 2, 3, 4, 5, 7	23	1	0	0	0
Focus on health promotion	3, 4	14	9	0	1	0
Food and nutrition systems focus	1, 7	12	10	0	1	0
Wellness maintenance	3	10	10	3	1	0
Primary prevention	3	15	7	1	1	0
Secondary prevention	*	4	9	7	3	1
Specifically includes physical activity with in the definition	4	6	8	7	3	0
Treatment	*	1	2	7	10	4
Applies public health principles	1	17	4	3	0	0
Collaboration	1, 5	11	7	4	1	0
Intersectoral action	1, 5	13	6	3	1	0
Education	1, 7	8	12	3	1	0
Economic	1, 2	7	12	3	1	0
Behaviour change	2, 7	6	13	4	1	0
Technical	1	5	8	10	1	0
Environmental	1	12	9	2	1	0
Political	1, 2	12	9	2	1	0
Organised efforts	*	11	8	3	1	0
Leadership	5	7	10	3	3	0
Problem-oriented	2	5	10	5	3	1

* Not from earlier definitions but included by author to test agreement/disagreement.

doesn't have to be comprehensive (and this might be counterproductive). It should identify "defining characteristics" but not be restrictive in the sense of putting a fence around what a PHN does and doesn't do.'

Inclusion of physical activity

The majority of experts supported the inclusion of a specific reference to physical activity in a definition of public health nutrition, although the response distribution against the 83% consensus rule limits a consensus claim (Table 2). Comments pointed to the implied inclusion of physical activity in considerations about public health nutrition but also to the need explicitly to communicate the importance of physical activity in public health nutrition. An alternative suggested might be to consider physical activity as part of the energy balance equation so important in public health nutrition world-wide.

'I would favour including physical activity if possible because it is so commonly linked, but it is strictly a different discipline.'

'Physical activity is clearly important in more affluent populations, and obese people in developing countries. In many under-nourished populations, reducing physical work, e.g. pregnant women in developing countries, is important for nutritional health. Perhaps addressing energy expenditure would be a way around it.'

'It is my view that physical activity is implicit in nutrition – particularly if one is considering energy balance and obesity/undernutrition-related problems as key issue of relevance. However, I accept that if people do not understand this link, then physical activity should always be mentioned,

but should always be linked to nutrition.'
'Physical activity has its own definition.'

One respondent commented that the Nutrition Society in the UK was about to revise its definition to include reference to physical activity.

Definitional descriptors

Table 3 presents the response distributions for each descriptor. All of the descriptors listed (except 'Treatment') were rated as important by the majority of respondents. Descriptors reaching the consensus criterion (>83% agreement or ≥20/24) are presented in bold in Table 3.

The lack of clear agreement about the list of descriptors that focused on methods (collaboration, education, political, etc.) seems to be a result of the implied meaning of 'applies public health principles', as suggested by the following comment by one of the expert panellists:

'I think it's sufficient to say public health principles/health promotion emphasis without listing all the methods (e.g. education, policy, etc.).'

Descriptors suggested to be added from an open-ended question included:

- solution-oriented rather than problem-oriented;
- social and cultural aspects;
- advocacy (although it was thought that this was implied);
- disease prevention as a single descriptor rather than primary and secondary prevention as separate descriptors; and
- interventions based on systems, communities and organisations.

Discussion

There are arguments for and against having a consistent definition for public health nutrition. The idea has been criticised in the professional debate in Australia^{11–14} because of a fear of restricting practice and the conceptualisation of the field. Given the evolving nature of public health nutrition in many countries, this criticism holds some currency and is not easily dismissed.

The consensus from this expert group, however, is that agreement and consistency in how we define public health nutrition is important. It is possible to avoid the constraints of word-for-word agreement on definitions by adopting key descriptors, such as those supported by the expert panel in this study, as the building blocks of definitions that are developed in different countries or by different organisations. This means that there is consistency in intent and description of public health nutrition rather than a single definition that may not fit the reality and needs of the workforce in different countries or in languages other than English.

Agreement about descriptors provides flexibility in marketing and communicating the field. For example, inclusion of the longer list of descriptors in definitions may be important for communicating what public health nutrition is to those who are not familiar with public health principles or approaches. For audiences familiar with public health, more succinct definitions can be constructed.

Agreement about the approach used by Yngve *et al.*⁴ to include physical activity explicitly in definitions of public health nutrition is less clear-cut. However, there is support, and indeed a strong logic, for recognition of the synergies and inclusion of physical activity alongside nutrition as the focus of change in the field of public health nutrition. This has obvious implications for workforce development in public health nutrition, which will need to build on physical activity-related competencies in the workforce.

Consistency and clarity in how we define the field of public health nutrition is of importance and interest to workforce developers and practitioners involved in education and training. Definitional ambiguity can constrain public health nutrition workforce development. Different conceptualisations of what the work of public health nutrition entails may lead to the development of different curricula, competency expectations and training. For example, inclusion of direct patient care in the conceptualisation of public health nutrition would require training to include development of clinical care-related competencies. This example highlights the importance of definitional clarity for workforce development in this field.

The size and composition of the expert panel in this study may limit the generalisability of the results obtained. The panellists in this survey were characterised by their expert status in public health nutrition at a national and international level, and all were active scholars,

practitioners and/or educators in the field of public health nutrition. As a result, the opinions expressed through this survey process are worth noting but might not necessarily represent the opinions of other public health nutrition experts in countries not represented, such as countries in the developing world. Whilst reliability has been shown to be maximised with panel size in excess of 12 experts, little is known about how expert panel representativeness affects results in consensus development techniques⁸.

In conclusion, this study has identified a high degree of agreement amongst this sample of public health nutrition leaders across nine countries in Europe, the USA and Australia about the descriptors that can be used to help define the field of public health nutrition. It is possible that inclusion of public health nutrition experts from other less economically developed countries may alter the level of agreement obtained in this study. Increasing the geographical representativeness of the expert panel is therefore a goal of future consensus measurement and development methods related to public health nutrition. Despite this limitation, the results serve as a basis for ongoing debate and refinement of the descriptors that are used to conceptualise what the field of public health nutrition involves.

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