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editorial

Navigating the complexity of applying nutrition evidence to individualised care: Summary of an Academy of Nutrition Sciences Position Paper.

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Diet is key to the maintenance of health and crucial in the prevention and management of many diseases. Modified nutrient intake may become essential to prevent deficiency, optimise development and health, or manage symptoms and disease progression. Adding to the complexity, disease and its treatment can also affect taste, appetite, and ability to access and prepare foods. Coupled with this, individual requirements for energy, macronutrients and micronutrients are influenced by factors such as life stage (age, growth, pregnancy etc.) and health status, which can affect the processes of consuming, digesting, absorbing, metabolising, or excreting nutrients. First and foremost, dietary advice must be based on sound evidence if it is to achieve and maintain human health. Furthermore, the practice of nutrition and dietetics must integrate and apply the sciences of food, nutrition, biology, physiology, behaviour management, communication, and must also recognise the context that society presents, including the plethora of often conflicting information on diet and health available via the internet and other media sources.

A new Position Paper (Hickson et al 2024) from the Academy of Nutrition Sciences (ANS) provides a state-of-the-art summary of how evidence-based practice is used to inform nutrition interventions for individuals, with a particular emphasis on research evaluation and using examples taken from the treatment of existing, clinically diagnosed disease. It is the third in a series of papers by the ANS that describes the nature of the scientific evidence and frameworks that underpin nutrition recommendations for health. It builds on the first ANS Position Paper that focussed on how dietary recommendations are formulated for populations for prevention of non-communicable diseases (Williams et al., 2021) and the second ANS Position Paper that examined the evidence used to support

health claims for specific foods (Ashwell et al., 2022). Editorials that summarise these Position Papers and their recommendations have also been published to widen dissemination (Williams et al 2021a,b, Stanner et al 2022a,b), as is the case here with this editorial summarising the ANS Position Paper in relation to nutrition interventions for individuals (Hickson et al 2024).

The third Position Paper again provides a valuable resource for students of nutrition and dietetics as well as nutritionists and dietitians already working in professional practice in dietary counselling of individuals. It has been developed in collaboration with Registered nutrition and dietetic professionals working in the UK, Canada and the USA, and it examines available frameworks for appraising the quality and certainty of nutrition research evidence, the development of nutrition guidelines to support evidence implementation in practice, and the influence of other sources of nutrition information and misinformation. The Position Paper also considers major challenges in applying research evidence to individuals and suggests consensus recommendations, aimed at the following three distinct groups:

- **Nutrition and Dietetics Professionals** - those who deliver nutrition interventions to individuals (nutrition and dietetic professionals and their professional bodies who uphold standards);
- **Researchers** - those funding, commissioning or undertaking research aimed at delivering evidence-based practice (e.g. grant funding bodies, guideline developers, researchers etc);
- **Disseminators** - those disseminating nutrition information to patients and the public (people in the media, journalists, policy makers, politicians, other healthcare professionals, etc).

Clinical Practice Guidelines

A primary method through which research evidence is used to guide individualised nutrition interventions is by the development of clinical practice guidelines, which are “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” (Institute of Medicine Committee to Advise the Public Health Service on Clinical Practice, 1990). Guidelines attempt to bridge the gap between research and clinical practice, guiding the practitioner and patient to implement treatments based on the best available evidence. Importantly, evidence-based practice recognises that research evidence is integrated with clinical expertise and patient preference, described as a ‘three-legged stool’ to emphasise that without one

of these elements, evidence-based clinical decision-making collapses (Peterson et al., 2016). See Figure 1.



Figure 1: Model of evidence-based practice (see Hickson *et al.* 2024)

Of major importance to evidence-based nutrition and dietetic practice is the ability to critically appraise the quality and certainty of research evidence in terms of: (i) whether an appropriate study design has been used to answer the clinical question; (ii) the methodological quality of the study (i.e. specific aspects of the methods); and (iii) the overall quality and certainty of the evidence as a basis for deriving recommendations, by applying GRADE (GRADE 2013) or a similar framework. The Position Paper provides examples of critical appraisal tools for use with different study designs, including tools to assess the risk of bias within the study.

There are a number of published Guidelines that support delivery of nutrition interventions by nutrition and dietetic professionals. The aim of a well-defined methodological process is to promote objectivity, transparency and reproducibility, while minimising issues such as conflicts of interest. Examples include the Evidence Analysis Library (EAL) that is hosted and reviewed by the US Academy of Nutrition & Dietetics (Academy of Nutrition and Dietetics, 2022) and the Practice-based Evidence in Nutrition® (PEN), which is an online nutrition knowledge translation platform jointly managed by Dietitians of Canada, the British Dietetic Association and Dietitians Australia (Neale and Tapsell, 2019).

The EAL and PEN illustrate different approaches in applying research evidence to individual clients, and the full Position Paper includes a useful table comparing the two clinical practice guideline development processes.

Challenges identified

The Position Paper identifies a number of challenges that require attention. Perhaps the most obvious of these is that, in addition to the increasing quantity and quality of robustly performed research studies, there is an abundance of conflicting information and misinformation that has to be navigated from diverse sources, including non-qualified practitioners, social media influencers and celebrities, the proliferation of fad diets and health products, and the tendency to use sensational headlines to attract more clicks, views and sales. See Box 1 for a summary of the challenges identified in the Position Paper.

Box 1: Summary of challenges that need to be navigated when applying nutrition evidence to individualised care

- (i) In addition to the increasing quantity and quality of robustly performed research studies, there is an abundance of conflicting information and misinformation that has to be navigated;
- (ii) the lack of consensus on diagnostic criteria and optimum nutrition-specific outcomes for use in monitoring;
- (iii) applying population-based guidance on nutrient intakes to individuals;
- (iv) the complexity of individual health and social situations, and the immense inter-individual variation in interactions between health conditions and people's real lives, requiring highly tailored and individualised treatment approaches. For example, approximately half of adults aged ≥ 65 years have three or more health conditions (NICE, 2016), which potentially signal diverse and sometimes contradictory dietary needs;
- (v) the need to translate evidence established for nutrients to advice based on the consumption of foods and whole diets. Nutrition and dietetic professionals learn this skill as part of their professional training, and evidence-based practice and the application of research is a competency standard for nutrition and dietetic professionals;
- (vi) The design of nutrition interventions for individuals requires a clear understanding of patients' values, preferences and experiences, yet there is very little research into this area. One solution is to involve patients and the public in the development of nutrition research to help ensure that research questions, intervention design and outcomes are relevant and meaningful to those who will ultimately benefit from the research. Increasingly, research funding bodies now explicitly require evidence of strong patient and public involvement and engagement (PPIE), thus the voice of the patient is starting to be heard.

Academy of Nutrition Sciences conclusions and recommendations

A number of strengths are recognised in the progress made to date, including: (i) implementation of research through transparent guidelines; (ii) defined processes for the development of national and international guidelines; (iii) developments and collaborations in the form of EAL and PEN.

To address the challenges identified in its Position Paper (Box 1), the Academy of Nutrition Sciences makes ten consensus recommendations, addressed to three specific audiences. A summary of these ten recommendations is provided in Boxes 2-4, but a detailed description of the recommendations, together with tools to support groups in the application of these (e.g. research glossary, list of critical appraisal tools etc) is available in the full paper (Hickson et al 2024).

Box 2: Recommendations to Nutrition and Dietetics professionals

Included in this group are: nutrition and dietetic professionals, other regulated health professionals who apply nutrition evidence and their professional bodies who uphold standards

1. An evidence-based approach to delivering nutrition interventions is crucial to ensure the intervention is efficacious and most likely to be acceptable, effective, and safe. Nevertheless, it is important to recognise that the highest levels of evidence are sometimes not possible to achieve due to the nature of research in nutrition and diet, in humans. Therefore, the concept of using the entirety of the *best available* evidence should be applied in prescribing nutrition interventions in individuals by nutrition and dietetic professionals.
2. Nutrition and dietetic curricula and competencies should be continually examined and reviewed to ensure nutrition and dietetic professionals are trained in the skills outlined in the Position Paper, namely: (i) reviewing, critiquing, and applying best available research evidence for nutrition interventions in individuals; (ii) identifying where research evidence is lacking and have the skills to design and conduct research to fill these gaps; (iii) understanding systematic reviewing and guideline development processes so these are undertaken routinely, and the best available evidence is applied to practice
3. Nutrition and dietetic professionals should be trained and maintain their competency to combine all relevant factors when advising clients in the context of the best available evidence (e.g. cultural, personal, medical, environmental, societal).
4. Leadership is required from professional bodies to acknowledge and pursue evidence-based practice. This includes raising awareness of high-quality dietary information, particularly with policy makers and other stakeholders. Continued efforts are needed to promote nutrition and dietetic professionals as the best source of nutritional and dietary information and guidance, as they have the skills required to navigate the complexity of applying evidence to individualised care. Targeted outreach campaigns that aim to increase awareness and build trust could be important approaches that professional bodies may pursue systematically.

Box 3: Recommendation to those funding, commissioning or undertaking research

Included in this group are: grant funding bodies, guideline developers, and individual researchers.

5. Patient and public involvement and engagement should be prioritised and included as part of funding criteria for future nutrition related research. It is crucial in priority setting and research design to ensure that patient values, preferences and experiences are incorporated.
6. Research is needed to understand the barriers and facilitators to guideline implementation, and priority should be given to this area. Now that defined systematic processes have been created to develop high quality guidelines, work is needed to monitor and ensure that they can be implemented and applied in clinical practice to ensure patients receive care based on the best possible evidence.
7. A greater understanding of the most robust research designs for use in nutritional interventions aimed at individuals is required. The development of a hierarchy of evidence specifically for nutrition studies for individualised care is needed, which reflects the concepts of study quality, best available evidence, and individualisation.
8. Understanding the extent of nutrition misinformation and identifying solutions to tackle it is a key research priority. We need to understand what sources of nutrition information people use, the quality of the information provided from different sources, and where the highest risk of misinformation lies. There is a need to help different groups (patients, public, policy makers, other healthcare professionals etc) to distinguish between 'good' and 'bad' information and identify sources of high-quality information, such as the promotion of health information certification schemes (e.g. PIF TICK).

Box 4: Recommendations to disseminators

Included in this group are: people in the media, journalists, policy makers, politicians, other healthcare professionals.

9. People conveying research findings or other nutritional information should acquire the skills to interpret scientific data (or work closely with professionals who have these skills) and identify sources of trusted reliable information. As the Position Paper has detailed, nutrition and dietary advice to individuals is rarely simple. Those disseminating nutritional information need to ensure they are able to provide safe, useable, relevant dietary information to individuals.
10. Trusted and reliable sources of information for individualised advice include professionals who are suitably qualified, having the in-depth understanding of the evidence and the skills to critically evaluate it, and practice under a code of ethics, such as dietitians and nutritionists who are credentialed with their national authority or registration body. These professionals should be the preferred source of information.

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