Short Communication

Starving for knowledge. Addressing the place of clinical nutrition within undergraduate and postgraduate clinical training: A national survey of practicing clinicians

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SUMMARY

Introduction: Clinical Nutrition is finding its place within medical training. In response to IrSPEN’s objectives and ESPEN’s manifesto, IrSPEN distributed an electronic survey investigating attitudes to Clinical Nutrition and unmet educational needs.

Methods: A 35-part questionnaire was designed and distributed to clinicians in Ireland. Questions elicited clinician demographics, education history and experience assessing and managing malnutrition. Descriptive statistics were reported, comparisons analysed using Chi-squared test and correlation between experience and confidence analysed with Spearman correlation coefficient.

Results: Of 168 respondents, 41% (n = 58) were male and most practice medicine in an academic centre (87.5%). Fifty-eight (34.7%) were regularly involved in nutrition support. Despite 20% (n = 33) of respondents regularly managing patients on parenteral nutrition (PN) and a fifth (n = 34) regularly managing complications of obesity, few had confidence in assessment for artificial nutrition (15.7% (n = 26), enteral nutrition; 8% (n = 13), PN). Trainees were less confident than attending staff in assessing and managing artificial enteral feeding (p = 0.022) and complications of PN (p = 0.01). Over 70% respondents reported they received <2 h clinical nutrition education. Only 32% (n = 52) received any formal training within postgraduate training (PGT), more often GI trainees (p = 0.01). A striking 98% felt additional focus on nutrition education in PGT is required.

Conclusion: This survey elicits physician attitudes on nutrition education in undergraduate and postgraduate curricula in Ireland. Practicing physicians identify the need to increase clinical nutrition education. IrSPEN are actively engaging with Irish medical schools and training bodies to address these deficits with multidisciplinary engagement from expert physicians and allied dietetic colleagues.

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1. Introduction

The power and potential for clinical nutrition to impact patient health far exceeds the expectations of patients and many clinicians. Slow progress in tackling disease-related malnutrition indicates that our current approach is not working and current messaging on how to maintain a healthy diet and nutrition status are missing the mark with the population. The World Health Organisation (WHO) has sounded the alarm about the prevalence of obesity and associated complications with rising mortality rates of cardiovascular diseases, cancer, and diabetes. In particular, the double burden of malnutrition and coexistence of undernutrition and overnutrition within lifespans, families and societies is of concern [1]. A global action plan was published in 2019 by the WHO aiming to attain a 25% relative reduction in premature mortality from non-communicable diseases by 2025, and acknowledging the central role of lifestyle and nutrition [2].

The importance of nutrition as a cornerstone for maintenance of health is self-evident. We ask doctors to apply nutrition knowledge
in practice to support patients in managing chronic diseases and other conditions for which malnutrition is a risk factor. Yet, there remain reports that nutrition education in medical schools falls short of recommendations initially from ASPEN of a minimum 22 h throughout the undergraduate curriculum, and subsequently from ESPEN. There is an evidence-practice gap between the nutrition education in medical schools and the knowledge and skills required for doctors to affect high quality care in this area with only 25% of medical schools in the US providing a dedicated course in nutrition [3] and similarly, 69% European medical schools in another survey required provision of nutrition education [4]. Jennifer Crowley and colleagues completed a systematic review of 24 studies throughout USA, Europa, Africa, Middle East, Australia, and Latin America. They concluded that despite the centrality of nutrition to a healthy lifestyle, medical students are not supported in providing high-quality and effective nutritional care [5]. ESPEN launched the Nutrition Education in Medical Schools project in 2017 [6], subsequently proposing minimum curriculum content for nutrition education in European Universities. They identified key factors for successful implementation, adopting novel methods of medical education including small group teaching and self-directed learning, and horizontal and vertical integration of nutritional content in context when teaching other subjects. The Council members alongside the university representatives developed an example of how this could be achieved over a 6-year programme [7]. The model for implementation is aspirational, fully integrating nutrition into the medical curriculum.

For at least 3 decades, several efforts have been made to improve medical nutrition education without substantial success. What is required to move nutrition education in medical schools forward in Ireland? The Irish Society for Clinical Nutrition and Metabolism (IrSPEN) has established a goal to facilitate integration of nutrition education into the postgraduate and undergraduate curricula. As part of our next step in this process, we distributed a survey of practicing clinicians in Ireland to identify attitudes and unmet needs in this area.

2. Materials and methods

We generated an online survey for distribution amount qualified and practicing medical professionals in Ireland. Both consultant and non-consultant hospital doctors from various specialities and across all levels of training were targeted. The survey instrument used was anonymous and information about the purpose of the study was provided. There was little likelihood of response bias, as there were no systematic differences between responders and non-responders. Questions were generated based on previously published studies and commentary on the need to amend nutrition education within the undergraduate medical curriculum [6,7] and were tested on three non-gastroenterology clinicians to ensure clarity. Thirty-five questions were scored on a 5-point Likert scale. The final contents of the survey were reviewed by a panel of nutrition experts from IrSPEN and deemed valid. Respondent demographics, clinical specialty, and daily management of issues related to Clinical Nutrition were recorded. In addition, we enquired about subjective experience and attitudes to education in Clinical Nutrition within the undergraduate curriculum and postgraduate training of physicians and surgeons in Ireland.

Responses were collected and analysed, and descriptive statistics recorded. Comparison between clinician grades and correlation between self-rated nutrition knowledge and years of experience was performed with univariate Chi-squared analysis and Spearman correlation coefficient using Stata.

3. Results

3.1. Demographics

The survey was distributed through social media platforms and society membership, and 168 responses received with a response rate of 21%. Respondent demographics are depicted in Table 1. Forty-one per cent of respondents (n = 68) were male, and the majority worked full-time in academic centres (87.5%). Almost three-quarters of physicians who responded were still in postgraduate training, with 47% working at registrar level, with at least 3 years of experience.

3.2. Nutrition-related knowledge

We investigated the degree of confidence of respondents in managing nutrition-related clinical care. Fifty-eight doctors (34.7%) recorded that they are regularly involved in nutrition support, but almost a quarter (n = 40) were rarely or never. Further enquiry demonstrated that 20% (n = 33) regularly assessed or managed patients on parenteral nutrition (PN), 65% (n = 108) regularly managed complications of parenteral nutrition, only 8% (n = 13). Furthermore, 32% (n = 54) did not believe they had sufficient knowledge to manage complications including the refeeding syndrome, line sepsis and line thrombosis. We compared attitudes and beliefs of doctors in training and compared with consultants and independent practitioners. We found that while they had comparable confidence in their ability to give nutrition advice (p = 1) and assessment of need for parenteral feeding (p = 0.43), trainee doctors were significantly less confident in assessment of need for and management of artificial enteral feeding (p = 0.022) and management of the complications of parenteral nutrition (p = 0.01). We also assessed...
knowledge and attitudes around assessment of nutrition status by clinicians. Two-thirds of trainee doctors (n = 131) identified the malnutrition universal screening tool (MUST) as the best method to objectively measure risk of malnutrition. Many clinicians believed that dietitians are best placed to assess need for nutrition intervention and a non-statistically significant proportion of trainee doctors felt that junior medical staff should be primarily responsible for this (p = 0.21, 8% trainees vs 3% consultants). Self-rated knowledge of nutrition assessment, prescription of supplementation, micronutrient requirements and obesity did not correlate with clinical experience (p = 0.9, r = –0.1).

3.3. Physicians attitude towards education in clinical nutrition within the undergraduate medical curriculum and postgraduate training when addressing patients’ needs in clinical practice

We posed several questions relating to clinicians’ experience of nutrition education in the undergraduate medical curriculum and during postgraduate training. Seventy percent of respondents believed their undergraduate training failed to prepare them for their clinical practice and 92% reported that more focus and provision of education in this discipline was required (Fig. 1). This is illustrated by the fact that 70% of those surveyed indicated that they received <2 h of training in clinical nutrition within the undergraduate medical curriculum. Almost one-third (n = 50) reported that no training in clinical nutrition was received as part of their undergraduate training, to their recollection. There were similar attitudes to the provision of training within the postgraduate curriculum. Only 32% (n = 52) received any specific training in the form of lectures, tutorials, or course modules within postgraduate training schemes, although gastroenterology trainees were more likely to report that there was some provision (p = 0.01). A striking 98% of respondents felt that additional focus on nutrition education in postgraduate training was needed to adequately educate patients and manage complications of malnutrition or obesity (Fig. 1). Specific comments included the need for advice and education in the areas of complications of artificial tube feeding, parenteral nutrition, surgical interventions in management of obesity and particularly the area of nutrition and outcomes in liver disease and cirrhosis.

4. Discussion

We report that 92% respondents believe that increased focus on clinical nutrition within the undergraduate and 98% believed additional education for physicians within the postgraduate curriculum is required (Fig. 1). These data compare with surveys among internal medicine residents where 90% believed additional education is required in this area [8]. Only 5.6% of our respondents were working in general practice, however a previous analysis of attitudes of over 3400 primary care physicians found clinical practices relating to nutrition below the expected standard [9].

Within the Irish adult healthcare system in the absence of nutrition support teams, the responsibility lies with general medical, gastroenterology and surgical teams with support from allied dietetic colleagues. These survey results highlight a deficit in knowledge among physicians and the need for a multidisciplinary approach to address malnutrition within our hospitals and among our patients. Improved education in this area and funding of nutrition support teams have been shown to improve patient care, reduce complications [10] and are cost effective [11] in the context of the complications of malnutrition and artificial nutrition itself. The lack of dedicated nutrition support teams means that the provision of high quality educational tools for healthcare workers and increased awareness of the impact of disease-related malnutrition on chronic disease outcomes is important to address this aspect of care for our patients.

Positioning clinical nutrition at the centre of patient care within primary and secondary care teams requires a fundamental shift in attitudes and the recognition of the impact of disease-related malnutrition in patient with acute and chronic disease. Disease-related malnutrition has clear and defined physiological and economic burdens [12] responsible for approximately 10% of the total health-care budget in Ireland in 2012. A fundamental change of approach is required to successfully embed consideration of clinical nutrition alongside pharmaceutical interventions in the management of acute and chronic disease. In order to do achieve this, it is important to acknowledge the pressures of a knowledge-heavy medical curriculum and develop innovative ways to amalgamate Clinical Nutrition and other topics or modules. Over the last three decades the medical curriculum has evolved to more integrated systems-based approaches with increasing innovation in how
education is delivered, incorporating group teaching and self-directed learning [13]. These are valuable tools that can be used to teach cornerstones of nutrition assessment and management alongside other principles of disease management within postgraduate and undergraduate training.

This survey elicits attitudes relating to nutrition education in the undergraduate curriculum in Ireland from the perspective of practicing clinicians within disparate specialities and grades. Despite use of a multimodal recruitment strategy, there is potential bias in that clinicians with a greater interest in nutrition may have been more likely to respond. While there is theoretical bias in using algorithm based social media it has been studied as an efficient strategy to encourage clinician engagement [14]. We identify areas where respondents reported lower self-rated levels of confidence. IrSPEN has committed to addressing education in clinical nutrition in medical schools in Ireland, drawing on the stated objectives of ESPEN in this area [6,7] and have developed in-person training days and written reference materials, focussing to date on gastroenterology trainees and interns. These efforts will be expanded across further disciplines, but crucially also to undergraduate programmes. We hope to work collaboratively with stakeholders to develop appropriate materials for lecturing and self-directed learning within undergraduate curricula.

Authors statement of contribution

Karen Boland and Cara Dunne conceived of the project as IrSPEN members and wrote the questions. Karen Boland, Adam James and Kathryn Allen developed and distributed the questionnaire. Karen Boland analyzed the data and was the primary author of the manuscript which had contributions and edits from all authors.

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Declaration of Competing Interest

The authors have no conflict of interest to declare

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References