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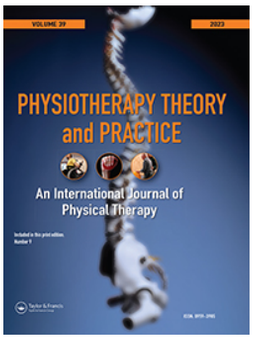

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RESEARCH REPORT

An exploration of self-perceived competence in providing nutrition care among physiotherapists in Ireland: a cross-sectional study

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ABSTRACT

Background: Integrating nutrition care into physiotherapy can address modifiable risk factors contributing to chronic diseases, providing comprehensive and effective patient care, and supporting a wellness-oriented approach to healthcare.

Objective: To investigate physiotherapists' self-perceived confidence in their competence in nutrition care in Ireland.

Methods: Cross-sectional study using data from a validated online survey tool. Four constructs of competence in nutrition care were assessed: knowledge, skill, communication and counseling, and attitude. Open-ended responses were collected to gather opinions on nutrition knowledge requirements. Participants were chartered physiotherapists representing public and private workplaces across geographical settings in Ireland.

Results: 447 physiotherapists completed the survey. Most were female ($n = 364$, 81%), in private practice ($n = 136$, 31%), and located in a city ($n = 215$, 48%) with a mean 17 years post-qualification experience. Participants' self-perceived confidence in nutrition care competence was positive (mean score of 107.2/175). However, knowledge (mean score of 18.5/35) and skills (mean score of 27.2/55) related to nutrition care received lower ratings. Age and years of practice were positively associated with higher confidence in providing nutrition care. Most participants ($n = 314$, 71%) agreed that additional nutrition education is needed. Three overarching themes were identified regarding nutrition knowledge requirements: importance of providing nutrition advice, stated knowledge needs for nutrition education and training, and feasibility of nutrition care within physiotherapy practice.

Conclusions: Physiotherapists in Ireland have confidence in provision of nutrition care but rated their knowledge and skills in nutrition as relatively low. Nutrition knowledge and skill are essential for physiotherapist practice as they can significantly impact patients' outcomes.

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Physiotherapists; chronic disease; nutrition education; nutrition communication; nutrition counseling

Introduction

Well-established evidence shows that the incidence of cancer, cardiovascular disease, chronic respiratory disease, and diabetes share modifiable risk factors including nutrition-related factors (i.e. alcohol consumption, body mass index (BMI), and unhealthy diet patterns) that contribute to more than two-thirds of these diseases (Abe and Abe, 2019; Beaglehole et al., 2011; Roth, 2018; Ng et al., 2019). Therefore, healthcare professionals (HCP) should consider nutrition as an important component in the treatment and prevention of chronic disease (Crowley and Ball, 2021; Evert et al., 2019; Wickramasinghe et al., 2020; World Health Organization, 2022). The integration of multidisciplinary approaches to lifestyle-related chronic disease has become increasingly important in providing comprehensive and effective patient care (Collado-Mateo et al., 2021; Kris-Etherton et al., 2014; Semlitsch et al., 2019). The shift in global healthcare focus from an illness-oriented approach to a wellness model of care is also important (Kris-Etherton et al., 2014; Ridgway, Baker, Woods, and Lawrence, 2019; World Health Organization, 2022). Nutrition care refers to any practice performed by a healthcare professional to improve dietary behaviors and the subsequent health of their patients (Ball, Hughes, Desbrow, and Leveritt, 2012). This can include screening, assessment, education and counseling, and signposting for further dietetic intervention (Ball, Hughes, Desbrow, and Leveritt, 2012).

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One such integration of multidisciplinary approaches to lifestyle-related chronic disease is between physiotherapy and nutrition. The American Physical Therapy Association (2019) has stated that nutritional screening and education are within the practice scope of a physical therapist. For the physiotherapist, optimizing a patient's nutritional status has the potential to support and improve patient immunity, healing and repair, resting metabolism and functional performance (Bezner, 2015; Dean, 2009; Hanson et al., 2016; Inoue et al., 2022; Severin, Sabbahi, Arena, and Phillips, 2022; Tatta et al., 2022). Research suggests that nutrition-related issues are encountered frequently (weekly and monthly) by two-thirds (67.7%) of physiotherapists (Hanson et al., 2016). There are many examples where physiotherapy practice can incorporate nutrition care, including cerebrovascular disease, hip fracture, and cancer (Nishioka et al., 2021). As the pattern of physiotherapy practice is characterized by intense and frequent visits over a prolonged period, a trusted relationship can be developed between the practitioner and the patient to provide lifestyle-related nutrition care (Berner, Bezner, Morris, and Lein, 2021; Dean et al., 2016; Severin, Sabbahi, Arena, and Phillips, 2022). This can include recommendations for optimizing nutritional intake using national healthy eating guidelines and the use of available nutrition screening resources (Berner, Bezner, Morris, and Lein, 2021; Department of Health, 2020; Health Service Executive, 2016). A physiotherapist must collaborate with nutrition and dietetic professionals in situations where a patient's nutritional needs or goals extend beyond professional scopes of practice (Berner, Bezner, Morris, and Lein, 2021; Inoue et al., 2022; Severin, Sabbahi, Arena, and Phillips, 2022).

Theoretical foundation

Competence in health care can be defined as a set of behaviors that describe excellent performance in a particular work context (Verma, Paterson, and Medves, 2006). Key attributes required for excellent performance include the understanding of knowledge, clinical skill, interpersonal skill, problem-solving, clinical judgment, and technical skill that can be acquired through experience and/or training (Verma, Paterson, and Medves, 2006). The competence of HCPs to provide nutrition care is poorly understood (Crowley and Ball, 2021; DiMaria-Ghalili et al., 2014; Keaver, O'Meara, Mukhtar, and McHugh, 2018; Kris-Etherton et al., 2015; Van Horn et al., 2019) but is critical to facilitate the development of strategies that support best practice healthcare (Ball and Leveritt, 2015). Inadequate training to incorporate nutrition into clinical practice results in limited counseling skills and a lack of self-efficacy in nutrition care (Bezner, 2015; Laur, Valaitis, Bell, and Keller, 2017; Ross, Mudge, Young, and Banks, 2011). As a result, nutrition-related issues are less likely to be approached, and consequently, experience and confidence in providing nutrition care remain low among HCP (Keaver, O'Meara, Mukhtar, and McHugh, 2018).

While physiotherapists primarily focus on rehabilitation and physical well-being, their understanding and competency in nutrition can significantly enhance patient outcomes and improve overall healthcare delivery (Berner, Bezner, Morris, and Lein, 2021; Dean and Lomi, 2022; Inoue et al., 2022; Severin, Sabbahi, Arena, and Phillips, 2022; Tatta et al., 2022). Therefore, it is crucial to develop an understanding of physiotherapists' competence in nutrition care to underpin safety and effectiveness in the management of patient care (Ball and Leveritt, 2015; Van Horn et al., 2019; Verma, Paterson, and Medves, 2006). This is essential for developing strategies that promote the delivery of high-quality healthcare (Ball and Leveritt, 2015). The present study aimed to explore self-perceived competence in nutrition care among physiotherapists in Ireland to determine their confidence in knowledge, skills, communication and counseling about nutrition as well as attitudes toward nutrition care.

Methods

A cross-sectional study was conducted using an online survey tool. The validated NUTrition COMPetence (NUTCOMP) survey tool was adapted to reflect the Irish context including references to Irish healthy eating guidelines (supplementary file 1) (Ball and Leveritt, 2015; Health Service Executive, 2016). The NUTCOMP survey tool has been previously validated and demonstrated as a reliable and suitable tool to directly inform professional development and identify opportunities to support safe and effective practice among healthcare professionals in nutrition care (Ball and Leveritt, 2015; Berner, Bezner, Morris, and Lein, 2021; Keaver, O'Meara, Mukhtar, and McHugh, 2018). It consists of five sections which are designed to determine healthcare professionals' confidence about the provision of nutrition care to both healthy individuals and those with chronic disease (Ball and Leveritt, 2015). More specifically it assesses: 1) confidence in knowledge about nutrition and chronic disease (7 statements); 2) confidence in nutrition skills (11 statements); 3) confidence in communication and counseling about nutrition (9 statements); and 4) attitudes toward nutrition care (8 statements) using 5-point Likert scales. Section five of the survey is designed to collect information on participants' demographic

information including their gender, age, location, and employment information. A score was assigned to categories of confidence relating to each construct statement as follows: not confident/completely disagree = 1; not very confident/somewhat disagree = 2; somewhat confident/neither agree nor disagree = 3; very confident/somewhat agree = 4; and extremely confident/completely agree = 5. Participants' confidence across constructs of: nutrition knowledge (maximum score 35); skills (maximum score 55); communication and counseling (maximum score 45); and attitude scores (maximum score 40) were calculated by adding the values assigned to each question within the four constructs of nutrition care. A total score was calculated for each participant to assess their overall confidence with respect to the provision of nutrition care and across constructs (maximum overall score 175). Survey items relating to previous nutrition education and training, knowledge of locally available nutrition and dietetic services, and opinions about nutrition knowledge requirements were elicited using open and closed questions.

Participants and recruitment

The Irish Society of Chartered Physiotherapists is the national, professional body representing over 3,000 Chartered Physiotherapists in Ireland. On August 13th, 2020, a link to the study details and an online survey was advertised through e-mail alerts by the Irish Society of Chartered Physiotherapists. All data was collected between August and September 2020. Two reminders to complete the survey were issued at two weeks and four weeks. Ethical approval for this research project was granted University of Limerick, Faculty of Education and Health Science Research Ethics Committee (2020_03_07_EHS). Reporting followed the checklist of items that should be included in reports of cross-sectional studies (supplementary file 2) (Vandenbroucke et al., 2007).

Data analysis

Data was collected via Qualtrics (Provo, Utah, USA) and analyzed using SPSSv26 (IBM Corp, Chicago, Illinois). Incomplete surveys were removed from the analysis (n = 135). To test the data for normality, Kolmogorov-Smirnov and Shapiro-Wilk tests were performed. Frequency distributions were calculated for each survey question as well as for participants' demographic information and previous engagement in nutrition education. Pearson's Chi-square and Fisher's exact tests were used to assess the association between participants' age, gender, and duration of practice and reported previous nutrition education and their self-perceived competence across the constructs of nutrition care. The relationship between participants' knowledge, skills, communication, and attitude scores was investigated using the Kruskal-Wallis tests. Statistical significance was set at $p < .05$. Free text responses were analyzed using inductive content analysis (Morse and Field, 1995). The number of times the same piece of information was reported were quantified as subcategories and themes were identified.

Results

The survey link was sent to 2,835 ISCP recipients and opened by 1,186 (42%). A total of 582 recipients accessed the survey with 447 completing in full (447/582, 77% of first survey page completion and 447/1,186, 38% of survey views). Most participants were female (n = 364, 81%), with an age range between 25–34 years (n = 127, 28%), closely followed by 45–54 years (n = 124, 28%), and 35–44 years (n = 111, 25%). The mean number of years practicing as a physiotherapist was 17 years (±11.2). Approximately half (n = 215, 48%) of the participants reported working in a city, followed by a small town (n = 180, 40%), and a rural village (n = 15, 3%). Overall, participants described their work settings as: private practice (n = 136, 31%); hospital (n = 130, 29%); community (n = 110, 25%); and "other" (n = 70, 16%) (Table 1).

Concerning previous education, over half (n = 246, 55%) of the participants had completed an education program that did not include nutrition content. The majority of the remaining participants had completed an educational program that included some nutrition content (n = 174, 39%) (Table 2). Of those participants (n = 27, 6%) that had completed an educational program predominantly focused on nutrition, twenty-two completed a certificate or other non-degree course and five completed a degree. Most participants (n = 314, 71%) agreed that they required further nutrition education to support them in their roles as a physiotherapist.

Confidence in knowledge about nutrition and chronic disease

Participants had a mean knowledge score of 18.5/35 meaning they were "somewhat confident" in their knowledge about nutrition and chronic disease. Nevertheless, the scores ranged from 7 to 35/35 within the group (Table 3).

The knowledge statement showing the greatest confidence (n = 175, 39%) was "how an individual's body composition can impact on the development of chronic disease". Conversely, the knowledge statement that most participants (n = 375, 83%) felt least confident about was "the most recently published

Table 1. Characteristics of participants, $n = 447$.

Category	Subcategory	n	%
Gender	Male	73	16
	Female	364	81
	Prefer not to answer	9	2
	Not listed	1	0
Age range	24 years or younger	30	7
	25–34 years	127	28
	35–44 years	111	25
	45–54 years	124	28
	55–64 years	53	12
	65 years or older	3	1
Years of practice	17.37 ± 11.22 years		
Location of work	City	215	48
	Small town	180	40
	Rural village	15	3
	Other	37	8
Current role	Private practice	136	31
	Hospital physiotherapist	130	29
	Community physiotherapist	110	25
	Mixed role	22	5
	Education	12	3
	Student/new graduate	10	2
	Rehabilitation	8	2
	Not practicing	6	1
	Clinical Specialist	4	1
	Manager	4	1
	Care of elderly/Social care	4	1

Table 2. Reported inclusion of nutrition content according to the level of education completed by physiotherapists ($n = 447$).

Level of education	Nutrition content	n	%
Certificate or non-degree course	Did not include nutrition content	53	12
	Included some nutrition content	40	9
	Predominant focus on nutrition	22	5
Degree program	Did not include any nutrition content	193	43
	Included some nutrition content	134	30
	Predominant focus on nutrition	5	1

Table 3. Participants' minimum, maximum, and mean scores across the constructs of the survey.

Survey constructs (maximum score)	Minimum	Maximum	Mean	SD
Knowledge (35)	7	35	18.5	4.3
Skills (55)	12	55	27.2	7.9
Attitudes (40)	16	40	33	4.4
Communication (45)	9	45	28.5	6.3
Total score (175)	58	175	107.2	18.9

SD: Standard Deviation.

Table 4. The relationship between participants' confidence level and previous nutrition education, age, gender, and years of professional practice according to the chi-squared analysis/Fisher's exact test.

Survey Construct	Previous nutrition education	Age	Gender	Years of practice
Knowledge	.332*	<0.001$^{\$}$	0.116*	<.001*$^{\$}$
Skills	.773	<0.001$^{\$}$	0.011*$^{\$}$	<.001$^{\$}$
Attitudes	.158	<0.001*$^{\$}$	0.022*$^{\$}$	<.001$^{\$}$
Communication	.542	<0.001$^{\$}$	0.313*	<.001$^{\$}$

*Fisher's exact test result. $^{\$}P$ value ≤ 0.05 considered statistically significant.

peer-reviewed evidence regarding nutrition and chronic disease". There was no significant association between knowledge scores or confidence levels and previous nutrition education. However, knowledge scores were significantly related ($p < .05$) to participants' years of practice and age with those in

the older age categories and those practicing for longer periods attaining higher confidence scores (Table 4).

Confidence in nutrition skills

The mean competence score for nutrition skills 27.2/55, was the lowest scoring of the four constructs of nutrition care (Table 3) with participants reporting being "somewhat confident". The nutrition skills statement with the greatest number of participants expressing self-confidence ($n = 167$, 37%) was the ability to "interpret an individual's biological data (e.g. blood pressure and cholesterol levels) against reference ranges. The nutrition skills statement with the least expression of confidence ($n = 358$, 80%) was "formulate a meal plan for an individual with a chronic disease". Participants self-reported confidence concerning nutrition-related skills was positively associated with years of practice, age, and gender ($p < .05$) (Table 4). Previous nutrition education did not significantly influence participants' skills scores.

Confidence in communication and counselling about nutrition

The mean competence score for communication and counseling about nutrition was 28.5/45, indicating that participants felt "very confident" in their ability to communicate about nutrition. "Maintain a non-judgmental attitude in discussions with patients/clients about the food they eat" was the statement of highest confidence ($n = 241$, 54%). "Clearly describe what patients/customers can expect from their discussions with you about food or nutrition" elicited the least confidence ($n = 221$, 50%). Participants' self-perceived competence about communication was positively and significantly associated with years of practice and age ($p < .05$) (Table 4). Previous nutrition education did not significantly influence participants' confidence in their ability to communicate about nutrition.

Attitudes toward nutrition care

Nutrition-related attitudes had the highest confidence across the four constructs of nutrition care with a mean score of 33/40 (Table 3). The statement with which the highest percentage ($n = 443$, 99%) of participants either somewhat or completely agreed was "it is important that I encourage my patients/clients to seek support from other health professionals if I am unable to meet their nutrition-related needs". The statement that the highest percentage ($n = 217$, 49%) of participants somewhat or completely disagreed with was "providing specific nutrition recommendations to my patients/clients that can assist with managing their chronic disease is within my scope of practice". Participants' attitudes were significantly associated with years of practice, gender, and age ($p < .05$) (Table 4). While participants' previous nutrition education did not significantly influence their overall competence scores about nutrition-related attitudes, agreement with the statement "it is important that all individuals usually eat healthy foods regardless of age, body weight and physical activity levels" was significantly related to previous nutrition education ($p < .05$).

Total confidence score and associations between constructs of nutrition care

Participants tallied between "somewhat confident" (105/175) and "very confident" (140/175) concerning the provision of nutrition care with a mean total confidence score of 107.2/175 (Table 3). Positive associations were shown between participants' scores across the four constructs of nutrition care ($p < .05$); participants who obtained a high competence score in one construct of nutrition care were more likely to obtain high competence scores across the remaining three constructs and vice versa.

Knowledge and referral to local nutrition and dietetic services

Regarding referral to other healthcare professionals for nutrition care, almost half of the participants ($n = 197$, 44%) reported that they refer to a registered dietitian (RD), followed by a doctor ($n = 34$, 8%), a nutritionist/nutritional therapist ($n = 33$, 8%), and "other services" including weight management programs, health shops, naturopaths, kinesiologists, and acupuncturists ($n = 24$, 6%). Thirty (7%) participants stated that they do refer patients for nutritional advice but did not specify to whom.

Local directories for referring to RDs identified by participants included the Irish Nutrition & Dietetics Institute ($n = 31$, 7%) and CORU, the regulatory body for health & social care professionals in Ireland ($n = 25$, 6%). Other responses included the internet ($n = 24$, 6%), dietetic colleagues ($n = 14$, 3%), local primary care team ($n = 7$, 2%), and hospital departments ($n = 4$, 1%). Approximately half of the participants ($n = 216$, 51%) reported knowing how to find out about RDs but did not specify further and one-quarter ($n = 103$, 24%) said they did not know where to find out about local RDs.

Table 5. Content analysis of the nutrition knowledge requirements of physiotherapists.

Theme Subcategory	Count ($N = 121$)
Importance of providing nutrition advice	
Believe basic nutrition knowledge is important	32
Mentioned MECC program	7
Stated need for nutrition education and training	
Interested in further nutrition training	31
Nutrition education should be included in physiotherapy curriculum	11
Need guidance on what advice can be given	5
Do not have enough knowledge at present	7
Nutrition care is not feasible within physiotherapy practice	
Not within the scope of practice	13
Must be cautious when giving nutrition-related advice	10
Providing nutritional advice is not feasible due to time constraints	4

MECC: Making Every Contact Count.

Requirement for further nutrition education

Approximately one-quarter ($n = 121$, 27%) of participants provided free text responses about nutrition knowledge requirements. Three overarching themes were identified including perceptions of: 1) importance of providing nutrition advice; 2) stated knowledge needs for nutrition education and training; and 3) nutrition care as not feasible within physiotherapy practice (Table 5).

The most frequently reported factors were that physiotherapists require basic knowledge to provide nutrition advice and are interested in further training (Table 5).

> Physiotherapists are very well placed to discuss diet and nutrition with clients who have chronic diseases but unfortunately, I don't have the knowledge. Usually, you have discussed weight and exercise with these clients and the next step would be discussing diet and nutrition (Participant).

Suggested methods of training included continuing professional development (CPD) courses, postgraduate certificates, and online lectures or webinars. For some physiotherapists, the provision of nutrition-related care was stated as outside the scope of practice and caution must be taken when providing nutrition-related advice.

> I think it's vital for a physio to understand the role of diet in wound healing, strength training etc . . . , but for patients that need careful management I would be cautious to advise them on specifics as I feel safer referring them to a qualified colleague (Participant).

Discussion

Physiotherapists expressed overall confidence and a favorable attitude toward providing nutrition care to patients with lifestyle-related chronic diseases. However, they had relatively low self-perceived confidence in their knowledge and skills in nutrition care. Age and years of practicing physiotherapy had a significant influence on physiotherapists' confidence scores in nutrition care. Increasing confidence in one construct of nutrition care was associated with improved confidence levels across all constructs. Only 37% of physiotherapists in the study had received previous nutrition education, and 71% indicated the need for further professional development to enhance their practice. Previous research has reported positive attitudes toward nutrition care similar to our findings. Irish HCPs, including physiotherapists, have reported positive attitudes toward nutrition care but low confidence in nutrition-related knowledge and skills (Keaver, O'Meara, Mukhtar, and McHugh, 2018). However, having a favorable attitude does not necessarily mean that nutrition care is provided (Abaraogu, Ogaga, Odidika, and Frantz, 2016; Hanson et al., 2016; O'Donoghue et al., 2014).

In a study by O'Donoghue et al. (2014) 74% of physiotherapists recognized the importance of lifestyle counseling for promoting a healthy diet but lacked confidence in addressing this specific lifestyle risk factor and believed their counseling efforts were ineffective. These challenges were attributed to barriers such as knowledge gaps, lack of expertise, and time constraints, which were also identified as obstacles in providing nutrition care in the present study (Hanson et al., 2016; O'Donoghue et al., 2014). Consequently, these barriers may result in missed opportunities to intervene with nutrition care in chronic disease management and improve patient outcomes (Keaver, O'Meara, Mukhtar, and McHugh, 2018). For example, parameters of overweight and hypercholesterolemia have been shown to lower exercise tolerance in post-myocardial infarct patients (Bryndal, Glowinski, and Grochulska, 2022). Regardless of the patient's initial diagnosis, the physiotherapist must possess the capacity to offer guidance on diet and nutrition issues directly or they should

collaborate with a dietitian within their routine clinical practice (Berner, Bezner, Morris, and Lein, 2021; Dean, 2009; Dean and Lomi, 2022). Berner, Bezner, Morris, and Lein (2021) summarized screening tools, interventions, and collaboration to provide information on diet and nutrition within the scope of physiotherapy practice.

Physiotherapists' age was another significant predictor of self-perceived nutrition competence, likely related to the fact that participants in the older age categories have more years of practical experience. More years of practice were significantly related to increased self-perceived competence in nutrition care. This has been reported elsewhere and may be influenced by the frequency of patient encounters (Hanson et al., 2016). Female physiotherapists had higher competence scores in their skill and attitude to nutrition care. There may be several explanations for this finding. Gender patterns have been observed in terms of the roles and career paths people choose. Specifically, it has been noted that more women tend to work as physiotherapists in areas related to health promotion and rehabilitation compared to men (Enberg, Stenlund, Sundelin, and Öhman, 2007; Stenberg et al., 2022). The profile of physiotherapy services in Ireland has a female majority (i.e. 74%) (Eighan et al., 2019). The gender profile of our participants compares to that reported among a purposeful sample of Irish physiotherapists working in primary care where health promotion has a greater focus (O'Donoghue et al., 2014).

Surprisingly, previous nutrition education was not associated with self-perceived nutrition competence among physiotherapists in Ireland. This finding contradicts the results reported by previous studies (Barnes, Desbrow, and Ball, 2016; Hanson et al., 2016; Keaver, O'Meara, Mukhtar, and McHugh, 2018). The differences between our results and those of previous research are difficult to explain, though they may be linked to the limited nutrition-related content of entry-level physiotherapy education programs in Ireland (Bodner, Rhodes, Miller, and Dean, 2013). Bodner, Rhodes, Miller, and Dean (2013) found that health promotion information mostly focused on theory. Practical guidance is also important for improving clinical skills and giving clinicians the confidence to advise on lifestyle changes.

More than two decades ago it was acknowledged by the American Dietetic Association that nutrition education is an essential component of the curricula for the majority of healthcare professionals (Maillet and Young, 1998). Our findings suggest that nutrition education has remained non-essential in Irish physiotherapy curricula with just over one-third reporting previous education containing "some" nutrition content and a stated need for nutrition knowledge as further education and training. Previous research found that only 18.5% of physiotherapists believed education curriculum included adequate nutrition education to prepare them for their role in patient care (Hanson et al., 2016).

Evidence suggests that successful nutrition education improves the self-efficacy of learners (Mogre et al., 2016). The level of nutrition education provided should be competence-based to equip physiotherapists with the knowledge, skills, and abilities to identify and address chronic disease risk factors (Livne, 2019). Postgraduate courses on nutrition should be introduced as continuous professional development to ensure qualified physiotherapists can increase their nutrition competence (Tatta et al., 2022). This could address the concern of 11% of participants about working outside their intended roles. In the future, it would be valuable to study whether it is possible to teach physiotherapists and students about nutrition based on improving skills and abilities (American Physical Therapy Association, 2019). There is some evidence that this approach supported weight management in the treatment of osteoarthritis through physiotherapy (Allison et al., 2021).

Strengths and limitations

We used a validated and reliable tool to examine the self-perceived nutrition competence of physiotherapists. This adds strength to the study in terms of the accuracy of the reported findings. The NUTCOMP tool provides a baseline to investigate the impact of follow-up interventions on improving physiotherapists' confidence and perceived competence to provide nutrition care. This study provides detailed descriptive data about the participants, including demographic information, such as gender, age, and work settings. This information helps to characterize the sample and provide a context for interpreting the results.

There are limitations to our approach. An ideal NUTCOMP score has not been established to identify the point at which a participant is deemed "competent" (Ball and Leveritt, 2015). Additionally, the method of sampling used in this research may have contributed to self-selection bias, whereby physiotherapists with a particular interest in nutrition may have been more likely to complete the survey, skewing the results (Bethlehem, 2010). Furthermore, as this study relied on self-reported data, overconfidence or social desirability bias may have been introduced (Grimm, 2010). Consequently, the findings of this research may not truly reflect the self-perceived nutrition competence of

all physiotherapists in Ireland. Another potential source of error is the lack of detailed information on the nutrition content of participants' previous educational programs. Thus, the finding that previous nutrition education did not influence self-perceived nutrition competence is based on limited information.

Conclusion

This study aimed to explore confidence among physiotherapists in Ireland about their competence to provide nutrition care. The results showed that physiotherapists have positive attitudes about offering nutrition care. However, they rated their knowledge and skills in nutrition as relatively low. Most physiotherapists agreed that they would benefit from additional nutrition education to better support their role. We recommend that competency-based nutrition education should be included in initial physiotherapy training. It is also important to clearly define the role of physiotherapists in providing nutrition care. Nutrition knowledge and skill are essential for physiotherapist practice as they can significantly impact patients' immune function, healing, metabolism, and functional performance. These findings suggest that physiotherapists are open to incorporating nutrition care into their practice, which could help address lifestyle-related chronic diseases.

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