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Clinical Nutrition ESPEN 36 (2020) 116–127

Contents lists available at ScienceDirect

Clinical Nutrition ESPEN

journal homepage: http://www.clinicalnutritionespen.com

Original article

General practitioners' views on malnutrition management and oral nutritional supplementation prescription in the community: A qualitative study

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ARTICLE INFO

Article history:
Received 8 October 2019
Accepted 10 January 2020

Keywords:
Malnutrition
Undernutrition
Oral nutritional supplements
Qualitative
General practitioners
Dietetics
Primary care
Community

SUMMARY

Background & aims: Malnutrition or undernutrition, arising from a deficiency of energy and protein intake, occurs commonly among community-dwelling individuals in developed countries. Once identified, malnutrition can be effectively treated in the majority of cases with dietary advice and the prescription of oral nutritional supplements (ONS) for patients who can eat and drink orally. However, previous research has reported inadequate screening and treatment of malnutrition in the community. The aim of this qualitative study was to explore general practitioners' (GPs) experiences and opinions on the management of malnutrition and the prescription of ONS in the primary care/community setting in Ireland.

Methods: Sixteen semi-structured interviews including chart stimulated recalls (CSR) were conducted with GPs. The interviews and CSRs explored, among others, the following domains; barriers and facilitators in the management of malnutrition, ONS prescribing in the primary care/community setting, and future directions in the management of malnutrition and ONS prescribing. Recorded interviews were transcribed and analysed following a generic qualitative approach with inductive thematic analysis using NVIVO 12 to facilitate data management.

Results: Three main themes were identified. Theme 1: 'Malnutrition is a secondary concern', encapsulating the idea that the identification of malnutrition is usually secondary to other clinical issues or disease rather than an independent clinical outcome. This theme also includes the idea that obesity is viewed as a dominant nutritional issue for GPs. Theme 2: 'Responsibility for malnutrition and ONS management in the community', highlighting that GPs feel they do not know who is responsible for the management of malnutrition in the community setting and expressed their need for more support from other healthcare professionals (HCPs) to effectively monitor and treat malnutrition. Theme 3: 'Reluctance to prescribe ONS', emerging from the GPs reported lack of knowledge to prescribe the appropriate ONS, their concern that ONS will replace the patient's meals and the costs associated with the prescription of ONS.

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https://doi.org/10.1016/j.clnesp.2020.01.006

Conclusions: GPs in Ireland do not routinely screen for malnutrition in their clinics as they feel unsupported in treating and managing malnutrition in the community due to limited or no dietetic service availability and time constraints. GPs also view malnutrition as a secondary concern to disease management and prioritise referral to dietetic services for patients with overweight and obesity. GPs reported that they have insufficient knowledge to change or discontinue ONS prescriptions. This study demonstrates that there is a clear need for primary care training in malnutrition identification, treatment and management and more community dietetic services are needed in order to support GPs and deliver high quality care to patients.

Introduction

Malnutrition or undernutrition, arising from a deficiency of energy and protein intake, occurs commonly among community-dwelling individuals in developed countries [1,2]. Malnutrition has a significant impact on affected individuals' quality of life due to increased susceptibility to disease and mortality regardless of the health condition it is associated with [3,4]. Patients discharged from acute settings who are malnourished are more likely to be re-admitted [5,6]. In the UK, it is estimated that approximately 3 million people are at risk of malnutrition, of which nearly half are aged over 65 years, the majority living in the community [1]. In Ireland, it is estimated that there are 140,000 adults with disease-related malnutrition at any time, with an annual estimated cost of €1.4 billion which represents 10% of annual health care expenditure [7].

Malnutrition is common among older people, being predominantly associated with disease in the majority of cases in this population group. However, it can also occur in the absence of disease due to physiological (e.g. reduced taste and smell) and non-physiological factors (e.g. loneliness) [8]. The ageing of the world's population suggests that the incidence of malnutrition will increase in the community setting. In 2018, for the first time in history, there were globally more people ≥65 years than children under 5 years of age. By 2050 it has been estimated that there will be more than twice as many people ≥65 than children ≤5 years [9]. Moreover, although older people represent a large percentage of the population affected by malnutrition, other groups also living in the community, such as cancer patients or patients with chronic conditions, are also at risk of becoming malnourished [10,11].

Both in the UK and Ireland, it is estimated that 10% of the population requiring care from a GP are at risk of malnutrition [12]. Despite the large population at risk of malnutrition and its associated health implications, it is a condition that is often undiagnosed and untreated [13,14]. Many reasons have been suggested for the under-diagnosis of malnutrition; these include the absence of nutrition education in medical school curricula and postgraduate training, and the unclear "ownership" of malnutrition care among health care professionals (HCPs) [15,16]. In fact, until very recently, there has been a lack of consensus on the diagnostic criteria to identify malnutrition in the clinical setting [17]. In an attempt to harmonise malnutrition diagnostic criteria, the Global Leadership Initiative on Malnutrition (GLIM) has recently developed new principles for the diagnosis of malnutrition, combining phenotypic factors (weight loss; reduced muscle mass and reduced body mass index [BMI]) and aetiological factors (reduced food intake; impaired assimilation disease burden and inflammation) [18].

Malnutrition in the community is optimally treated by providing first-line dietary advice a so-called "food-first" approach in combination with ONS when necessary (Fig. 1) [19]. A recent systematic review of randomized controlled trials in the hospital and community setting looking at nutritional interventions in older adults at risk of malnutrition indicated that ONS combined with dietary counselling is the most effective intervention, increasing both dietary intake and weight [20]. ONS are an effective method of managing malnutrition if prescribed for patients who are malnourished or at risk of malnutrition [21]. Criteria for the appropriate prescribing of ONS have been proposed; appropriate prescribing encompasses several factors; nutritional screening and assessment of the individual to ascertain the need for ONS (malnutrition or at risk of malnutrition), investigation of the underlying causes of malnutrition, establishing desirable outcomes to be obtained from the nutritional support (i.e. weight increase), and providing both dietary advice and continuous ONS monitoring to assess their need and patient adherence (Fig. 1) [22,23]. However, previous research indicates that inappropriate prescribing of ONS occurs frequently in the community setting (30–70% prevalence) which has both economic and, potentially, clinical implications [24–26].

Inappropriate ONS prescribing includes the following possibilities; over-prescribing or prescribing in the absence of a diagnosis of malnutrition or risk of malnutrition; mis-prescribing or prescribing wrong doses and/or treatment duration; and under-prescribing or the lack of ONS prescribing when there is malnutrition or risk of malnutrition [27]. Previous Irish research has demonstrated that management of patients 'at risk' of malnutrition in the primary care/community setting is sub-optimal, with low awareness of the condition and its management among non-dietetic HCPs [25,28]. In Ireland, GPs are the main prescribers of ONS in primary care. They are also commonly the first point of contact for individuals in the community who are malnourished or at risk of malnutrition [25,28]. Therefore, exploring their experiences and perceptions can provide insight into the complexities of managing malnutrition and ONS prescribing in the community. The aim of this qualitative study was to explore GPs' experiences and opinions on the management of malnutrition and the prescription of ONS in the primary care/community setting in Ireland.

Methods

The consolidated criteria for reporting qualitative research (COREQ) were followed in describing the methods of this study [29]. (Supplementary File 1). The study had ethical approval from the Irish College of General Practitioners (ICGP) Research Ethics Committee, and the University College Dublin (UCD) Human Research Ethics Committee (reference LS-18-50-Corish).

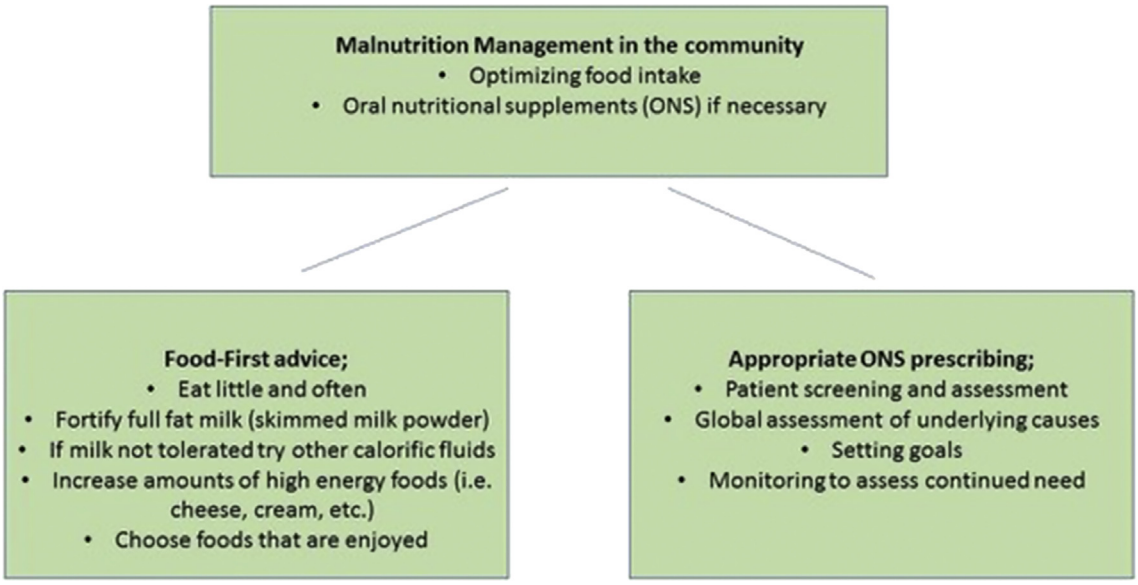

Fig. 1. Appropriate management of malnutrition and ONS prescribing [22,27].

Participant selection

GPs currently caring for adult patients who had been prescribed ONS were eligible to participate. Participating GPs were purposively selected to include a variety of practice locations within three large population areas [Community Health Organisations (CHO)]; CHO 6 representing Dublin South East and Wicklow; CHO 7 representing Kildare/West Wicklow, Dublin South West, Dublin West and Dublin South City; and, CHO 9 representing Dublin North, Dublin North Central and Dublin North West. Participants were initially identified from the researchers' professional networks; this initial recruiting phase was complemented with snowball sampling in which participants nominated other colleagues whom they thought would offer a valuable perspective on the topic. The researchers contacted potential participants by email and telephone.

Data collection

Semi-structured face-to-face interviews were selected to address the research aims. All interviews were audio recorded and transcribed verbatim. Brief field notes were taken by the interviewer and used with the transcript of interviews during the analysis phase to provide the researchers with further context. Our team of researchers consists of two qualitative research-trained female postdoctoral research dietitians (PDC & CMER). Researcher PDC conducted the interviews in person at the GP practices or other convenient location, from February 2019 to May 2019. The final sample was determined based on factors influencing "information power" such as the quality of the interviews and sample specificity, as well as the repetition of key concepts and sample size used in generic qualitative studies [30,31]. Researcher CMER conducted 2 of the interviews under PDC supervision. The interview guide was developed to start with general questions and prompts related to the awareness and management of malnutrition, including exploring barriers and facilitators, followed by GPs' attitudes towards ONS prescribing and management in the community, and concluded by exploring future directions to improve the management of malnutrition and ONS prescribing (Supplementary file 2). After the general questions and prompts, the interview continued with a chart-stimulated recall (CSR) interview to explore in more detail the information obtained with the general questions and prompts (Supplementary file 2). The process of CSR consists of a GP using the medical records of actual patient visits to prompt recall of his or her own decision-making processes whilst the interviewer explores the reasoning for their medical decision [32].

For the CSR, GPs were asked to choose two charts of patients who were on ONS at the time of the visit, and that the GP had seen in the last month. The GPs were requested to include one patient $\geq$65 years of age and another patient between the ages 18–64 years. The decision for inclusion of these age categories was based on the evidence that community-dwelling older adults are a highly vulnerable group for malnutrition due to physiological and non-physiological reasons making them a distinct cohort from younger people affected by malnutrition in the community [33]. The CSR component of the interview was initiated with the GP being asked to provide a high level summary of each patient visit which included the patient's age, gender, reason for visit and comorbidities to provide context for the consultation. The researchers had no access to the medical records or to any patient-identifying information and the GPs were advised not to provide any patient-identifying information. In Supplementary file 2, it can be observed that the GPs were then asked different questions depending on whether they were initiating (CSR2) or continuing (CSR3) the prescribing of ONS to identify potential barriers and facilitators in the process of ONS prescribing in both situations.

As malnutrition screening is a key aspect of appropriate ONS prescribing to determine whether clinical indication for nutritional support exists [27], and access to a community dietitian has proven to improve appropriate ONS prescribing in a previous study carried out in Ireland [25], the last CSR question (CSR4) explored whether the patients had ever been nutritionally screened or advised by a dietitian.

Data analysis

A generic qualitative approach with inductive thematic analysis were used for the analysis of the transcribed interviews, first of all manually, and later using NVIVO 12 to facilitate data management [31,34]. Therefore, the first step was familiarization and immersion

in the data to identify initial descriptive codes. All transcripts were initially coded by PDC and these were later reviewed and discussed with CMER to agree on coding decisions. In the instances where data represented more than one concept, they were coded in two or more ways. The resulting codes were then grouped together, refined and relabelled resulting in a number of subthemes. Broader overarching themes were identified, and links between these and the subthemes were identified by one author PDC and reviewed and discussed with CMER. For patient descriptors, the following were extracted from the CSR transcripts; age, gender, living situation, medical card holder, type of appointment, presence of multiple comorbidities, dietetic input, currently using ONS, ONS prescription origin, length of time on ONS and primary reason for ONS prescription (Table 2).

Results

Sixteen GPs were interviewed in person. The interviews lasted an average of 45 min. Participants' characteristics are provided in Table 1. Table 2 shows the characteristics of the patients selected by the GPs for the CSR to help understand the context in which GPs work.

Three main themes were identified; **i)** Malnutrition is a secondary concern **ii)** Responsibility for malnutrition and ONS management **iii)** Reluctance to prescribe ONS. For each theme, the subthemes are described below. A thematic map illustrating the relationships between themes and subthemes is shown in Fig. 2 and illustrative quotations are provided in Tables 3–5.

Malnutrition is a secondary concern

Malnutrition an ad hoc diagnosis

Malnutrition was not seen as a separate entity, but as associated with or as the result of a disease process and/or social situations. Therefore, most GPs reported not screening for malnutrition systematically, but on an ad hoc basis depending on the patient's comorbidities; thus, patients with chronic conditions such as inflammatory bowel disease, cancer, mental health problems or post-surgery were identified as vulnerable groups in which malnutrition may be looked for. Those GPs with a large proportion of elderly patients reported screening for malnutrition regularly as they identified this group as high risk due to social factors such as being unable to cook or do their shopping. Only three GPs reported using the "Malnutrition Universal Screening Tool" (MUST), and in general they reported not using it very often. Different approaches were used to identify malnutrition or risk of malnutrition by GPs, with the most common being patient observation and weight monitoring. Family members and patient-reported weight loss and/or loss of appetite were also identified as important sources to identify malnutrition.

Overweight and obesity seen as a priority

GPs regarded overweight and obesity as "more of a problem in their clinical practice" as well as in the time to be allocated to other HCPs with expertise in nutrition/dietetics. Some GPs also identified diet quality as malnutrition, and a problem that needs to be addressed in their practice population.

Lack of resources to treat malnutrition; HCPs and literature

GPs commonly reported that there is a lack of support to deal with malnutrition in the community. This originates mainly from

Table 1
General practitioner (GP) and practice characteristics (n = 16).

Characteristics	Total n = 16
Gender (n)	
Male	4
Female	12
Years qualified (mean, SD)[b]	13.3 (3.8)
Years as a GP (mean, SD)[+]	6.3 (3.4)
Practice type (n)	
Single handed	1
Group based	15
Practice location (n)	
Urban	7
Suburban	9
Predominant patient population (n)	
Elderly	6
Young	5
Mixed	5
Predominant patient insurance cover[a] (%)	
Medical card	8
Privately insured	2
Mixed	4

[a] **Missing data** n = 2.
[b] **Years qualified** = Years since GP qualified from medical school; **Years as a GP** = Years working specifically as a GP (does not include any years worked in other speciality areas).

Table 2
Characteristics of patients extracted from the chart-stimulated recall transcripts (CSR).

Characteristic	Patients (n = 32)
Age (mean, SD)	60.1 (21.7)
Gender	
Male	14
Female	18
Living situation[a]	
Nursing home	3
Community housing	1
Living at home	24
Homeless	3
Medical card holder	
Yes	27
No	3
Other	2
Type of appointment	
New	1
Review	31
Multiple comorbidies[a]	31
Dietetic input[b]	
None	13
Hospital only	4
Community	9
Referred	2
DNA	2
Currently prescribed ONS	
Yes	27
No	5
ONS prescription origin	
Hospital	13
GP	13
Community dietitian	4
Origin not in chart	2
Length of time on ONS[c] (months) (median, IQR)	12.0 (33.5)
Primary reason for ONS prescription	
Weight loss	17
BMI	6
Disease/complication	4
Incentive	1
Dental issues	1
Family member concern	3

DNA = Did Not Attend; **ONS** = Oral Nutritional Supplements; **IQR** = Interquartile Range; **BMI** = Body Mass Index.
[a] Missing data n = 1.
[b] Missing data n = 2.
[c] Not documented n = 6.

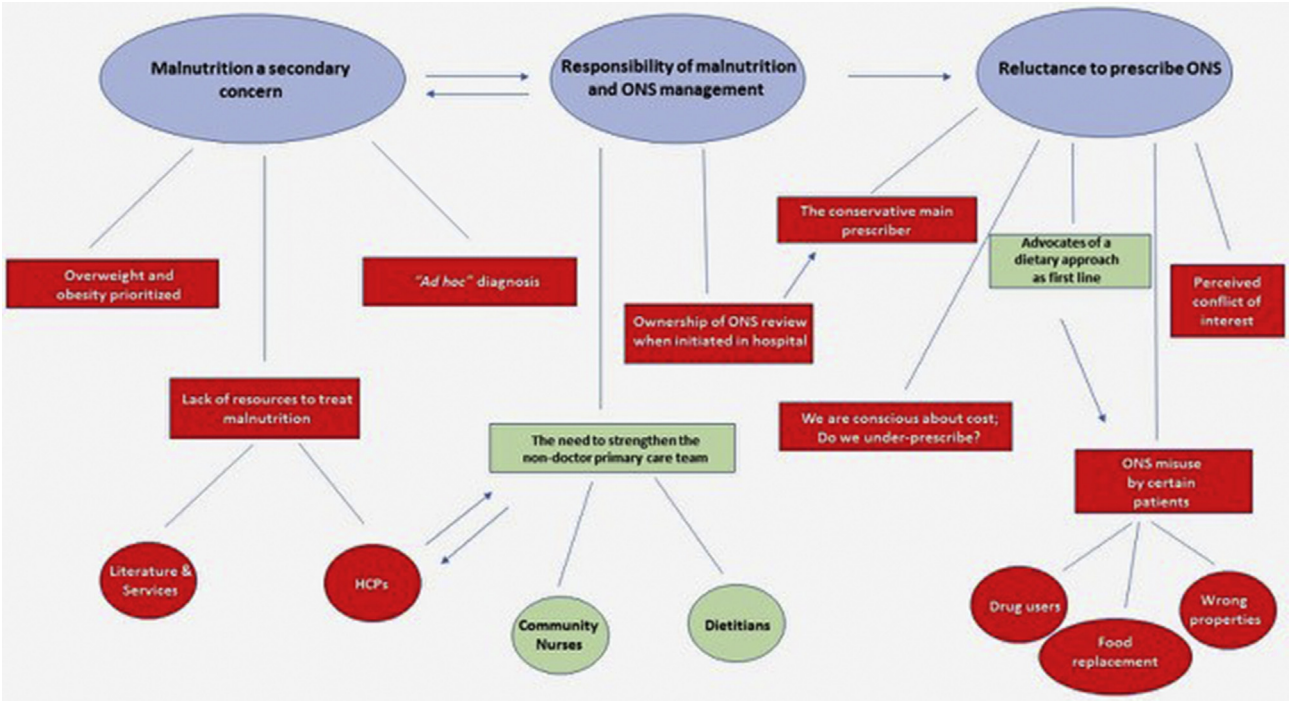

Fig. 2. Thematic map. Fig. 2 represents the thematic map for the constructed themes and subthemes. In red are identified barriers to the appropriate management of malnutrition and ONS prescribing in the community, and in green are the identified facilitators for the same. GPs regarded malnutrition as a secondary concern always linked to existing predisposing comorbidities and to social situations. Overweight and obesity were regarded as more prevalent public health problems which had a priority for their time allocation. A lack of other HCPs to support GPs with malnutrition was identified, more specifically dietitians and community nurses. There was a generalized reluctance to prescribe ONS which mainly stemmed from a high awareness of their cost to the Health Service Executive and their preference for a dietary approach as first line management of malnutrition or malnutrition risk.

the lack of access to dietitians and long waiting lists when referring patients to them. Peers, nurses and hospital teams were reported as other sources of advice in the absence of input from a dietitian. Some GPs suggested that there were more resources and services available to treat patients with overweight and obesity as opposed to those who are malnourished or at risk of malnutrition.

Responsibility for malnutrition and ONS management

The need to strengthen the "non-doctor" primary care team

The GPs in this study identified the need for more supports in the community to help them to manage malnutrition. Dietitians and community nurses were identified as key stakeholders in the management of malnutrition and identification of patients at risk of malnutrition. GPs felt alone in treating malnutrition in the community as opposed to the situation in the hospital setting where responsibility is shared between a multidisciplinary team. In fact, some GPs reported having to refer patients with unintentional weight loss whom they were worried about to hospital in the hope that they would be seen by a dietitian.

GPs commonly reported having very poor access to dietitians which lead some of them on certain occasions to "*blindly starting on something*"**GP1** instead of having patients waiting for months to see a dietitian. Some GPs declared that it would be an advantage to have fast remote access to dietetic advice either by email or phone; they reported having similar services with specialist nurses in different areas of practice which they found extremely helpful; "*The diabetes nurse specialist sends around a flyer and visits the practices, her work mobile is there so you can just pick up and she'll answer or get back to you very quickly*" **GP14**.

Lack of awareness of malnutrition was also reported by some GPs, defining malnutrition as "probably something they encounter more than they think of", as well as a busy clinical agenda that forces them to assign priority to other issues before malnutrition; "*when you think of general practice and when you think of fighting fires, for whatever reason I don't think nutrition is considered a fire.*" **GP10**. "*I think if we just had more time (referring to screening for malnutrition). You know more time with the patient as a whole. Where so often you are so busy and you're just fighting the fire of whatever today's complaint was.*" **GP9**.

Ownership of the ONS review when initiated in hospital

GPs expressed concern when the ONS had been initiated in hospital as to the "lack of clarity" as to who was responsible to monitor and decide on whether to continue or discontinue the patient's prescription. Many GPs reported that the patient care plan was frequently unclear when the patient was discharged from hospital, leaving them with no information as to how to proceed, and therefore, being more likely to take a passive approach and continue the prescription. This lack of clarity in the hospital discharge letter and continuation of the prescription in the community setting leads to some patients not taking their ONS and instead these "stock piling" at home; "*I've never seen ONS added as a thing that happened to the patient when they were in hospital. The only awareness that I have that it happened is that it comes on that prescription. I'm never told how long to prescribe it for or that we're going to review it in three months for example. So the only really awareness that I have of it having happened is through the prescription. It's often not on the discharge letter. And therefore because it's not on the discharge letter, there's no instruction as to how long it's to continue for.*" **GP10** "*Many people would say; don't give me any more*

Table 3
Illustrative Quotations for the theme "Malnutrition is a secondary concern" from semi-structured interviews with GPs (n = 16).

Malnutrition is a secondary concern	
Subthemes	Illustrative Quotations
An ad hoc *diagnosis*	**GP8:** "We do not probably screen for malnutrition in a structured way as we possibly should. We probably rely on knowing patients and maybe observing if they're not looking as well or maybe if they're mentioning specifically that appetite is reduced or maybe if they're post-surgery" **GP1:** "I suppose if it is somebody who maybe has a, you know, for instance, a chronic inflammatory bowel condition if they have Crohn's or Colitis, you'd be kind of keeping an eye on them, or maybe if they have some sort of mental health condition … It's very ad hoc (referring to malnutrition diagnosis)" **GP9:** "I wouldn't say I hunt it out. I wouldn't say I actively go looking for it. In all honesty I'd say, the most typical encounter is often probably family members come in and express worries" **GP4:** "In the elderly we'll be screening for malnutrition just as we're looking for loss of appetite and things like that. But then also self-care, we have a lot of isolated elderly who may not come to be able to look after themselves, may not have the proper groceries or the ability to cook for themselves"
Overweight/obesity and associated chronic conditions prioritised	**GP4:** "I know there are community dietitians, but I wouldn't be referring for. Usually, not necessarily for malnutrition. I'll probably save the dietitians time for my obesity. It will be if I was to be more concerned about obesity in the community." **GP3:** "There's not a lot of support for malnutrition. There's not really a huge access to a dietitian. We do have access to a diabetic dietitian that will come and give some advice to people, but there's long waiting lists. So trying to get the elderly who have multiple comorbidities who do need the oral supplements is a lot harder, because I think they're trying to tackle the obesity crisis." **GP11:** "So obesity affects people when they're healthy but has long term effects. Whereas I think malnutrition may be seen as something that's heading towards the end of life. So the impact of malnutrition tends to be short term where the impact of obesity tends to be long term." **GP13:** " I say a lot of the asylum seekers and homeless people will be getting, you know, go to the chip or the Chinese every nighty you know, so there's a big issue there. So, I think like more … I don't necessarily think that like malnutrition is a big issue for us. I mean, in fact, we have a lot of people who are very overweight and obese, that's probably more of a … In terms of food and stuff, that's probably more of an issue for us"
Lack of resources to treat malnutrition; HCPs[a] *and literature*	**GP2:** "There could be a lot more support available that I'm not familiar with but there are a few patients that I would refer to community dietitians, I don't think that is great in my area in terms of access to them, there is a long waiting list, so there are supports there but it takes a long time to get access to them" **GP6:** "I guess all you can do is refer onto a dietitian, I'm not sure how much of a dietitian we have. I think it's just a small fragment of dietitian in this area, so you're usually talking months at least to see them." **GP5:** "I suppose it's easier to find those weight loss diet sheets rather than something about food substitutions and something for gaining weight." **GP10:** "There's plenty about healthy diet and what's a normal diet. There's plenty for patients that you want to lose weight, but I don't know of any resource that I've seen to help people gain weight"

[a] **GP** = General Practitioner; **ONS** = Oral Nutritional Supplements; **HCPs** = Healthcare Professionals.

Table 4
Illustrative Quotations for the theme "Responsibility for malnutrition and ONS management" from semi-structure interviews with GPs (n = 16).

Responsibility for malnutrition and ONS[a] management	
Subthemes	Illustrative Quotations
The need to strengthen the "non-doctor" primary care team (dietitians and community nurses as key stakeholders)	**GP4:** "It would be great if there was more community intervention for malnutrition management. Usually in community intervention you shouldn't need a GP × to … In fact, it shouldn't really be a GP. It should be public health nurses or dietitians leading the community, that would be ideal." **GP7:** "I think we could do an awful lot more there, at the level of public health and at the level of community supports and we could do with more dietitians. Say, the primary care team in general, public health nurses help us to identify at-risk patients and do tremendous work." **GP9:** "Probably if anything in the hospital setting you are more aware of it. Because you actually had dietitians there and you had a lot more access to multidisciplinary people than you have in the community." **GP10:** "I can't get a patient in to see a dietitian. I don't have access to that. I find the supports are very good if a patient is engaged with a team in the hospital. So let's say they're an oncology patient and they have a large multidisciplinary team looking after them, that includes a dietitian." **GP14:** "I know there's a really good diabetes nurse specialist working in the community … I'd be on the phone to her every couple of weeks about a patient with diabetes, so it's really handy to be able to have that. Having a similar thing with a dietitian would be more benefit."
Ownership of the ONS review when initiated in hospital	**GP1:** "Is their ONS something we leave to their physician in hospital or the dietetic service in the hospital to monitor or should we be doing it? There is often a lack of clarity around that I suppose." **GP9:** "Probably, for some of the older people, if it's started in the hospital you probably wouldn't really be sure of what their plan was. You'd kinda probably keep it going for a while" **GP7:** "Again, I'm estimating or speculating, I can't prove it, but I imagine yes, if it was initiated elsewhere I might have a more passive approach to it. In other words, leave them all." **GP12:** "So maybe as they become better and well in the community, possibly their need for oral nutritional supplements could decrease. But because they don't have that follow-up, they seem to be continued on." **GP2:** "Sometimes you might be going through a quick review check-up and they could be on fifteen medications and this is one of them you're going through and they're like; I have a tray of them in my kitchen, don't give me anymore of them."

[a] **GP** = General Practitioner; **ONS** = Oral Nutritional Supplements; **HCPs** = Healthcare Professionals.

of them (referring to ONS), I have about fifty boxes in the press (cupboard)." **GP2**.

Reluctance to prescribe ONS

Advocates of a dietary approach as first line

All interviewees agreed that the first approach to the treatment of malnutrition should be making dietary changes when possible, and they all tried to avoid prescribing ONS unless it was absolutely necessary. However GPs did not have a clear idea of the diet to recommend for malnutrition/undernutrition, referring in many occasions to healthy eating guidelines to treat malnutrition/undernutrition;"*I guess I'd usually go back to diet and making sure they're eating plenty of fruit and veg (on being asked how to treat malnutrition/undernutrition)*" **GP6**. Doctors frequently concurred that a negative issue about ONS was that some patients may use them as a "replacement for meals".

The conservative main prescriber

GPs reported lack of knowledge of the wide range of ONS available. This lack of knowledge about the different ONS products lead them to transcribe prescriptions from the hospital setting and to report "not feeling well qualified enough" to discontinue or change them. Most GPs avoided initiating ONS prescription themselves and reported only commencing ONS if another "healthcare provider suggested it". They also declared that ONS are normally not necessary and a rare prescription in the community as most individuals in the "general population would have no particular need for them".

We are conscious about cost; do we under-prescribe?

Many GPs reported being very conscious about "the cost of ONS to the Health Service Executive budget" when inappropriate prescribing happened. This situation lead to some of them questioning whether they under-prescribe ONS on certain occasions.

ONS misuse by certain patients; street value, food replacement and "lifeline"

A common cause of concern among the GPs interviewed was the misuse of ONS by certain patients. Such patients were mainly those with addiction problems who were looking for ONS due to their "street value"; however, some GPs also reported that elderly people may wrongly assign curative properties to ONS which made them think that they needed them and they then became a substitute for meals.

Perceived conflict of interest

Some GPs expressed their concern with ONS product suppliers funding registered dietitians to provide clinical review of their patients; they thought that this created "a commercial impact on a clinical issue".

Chart-stimulated recall

As part of the GP interviews, CSR of two patients' charts was conducted with each GP. The majority of patients had multiple chronic illnesses, had been on ONS for more than a year and in half of cases had the ONS initiated outside of the GP practice (Table 2). Of the 32 CSRs, similar themes to those identified within the interviews were identified.

Prioritisation of malnutrition

The lack of prioritisation of malnutrition in consultations was evident from the CSR interviews. GPs were more likely to concentrate

Table 5
Illustrative Quotations for the theme "Reluctance to prescribe ONS" from semi-structured interviews with GPs (n = 16).

Reluctance to prescribe ONS	
Subthemes	Illustrative Quotations
Advocates of a dietary approach as first line	**GP8:** "If a bit of custard pudding or rice pudding would do the job, I think sometimes ONS are just not needed." **GP15:** "I look at what they're eating currently, and can they increase their calorie intake just by normal foods, or supplementing with full fat milk, and butter and cheese, high protein, high calorie foods first." **GP16:** "I'd usually just go with what are they eating and trying to bring in snacks, high calorie, healthy-ish … you know, peanut butter … trying to just up their intake and try to see that way, does it make a difference."
The conservative main prescriber	**GP8:** "I wouldn't feel very confident changing between ONS. There's two common brands that we'd use, quite often we might be doing prescriptions, transcribing them from hospital." **GP10:** "I would probably only do that if I had the advice of a dietitian. If I was specifically told by a dietitian or by a member of the oncology team or something like that to increase it or to change it. But other than that, I don't really have the knowledge to change it, really. I certainly wouldn't have the experience." **GP13:** "If another healthcare provider suggests it, or if the dietitian suggests it, but to be honest, I don't get into this thing of prescribing it myself"
We are conscious about cost; Do we under prescribe?	**GP4:** "There's been a lot of drive to say that there's an awful lot of money spent every year on them and are they really, are they very much needed? I suppose, they have a place. They have an important role and an important place, but yeah, I try to avoid prescribing them and I possibly under prescribe." **GP8:** "I think they do have a role but I'm always conscious of not over relying on them. I possibly don't prescribe them as often as I should. If anything, I prescribe them maybe too little." **GP1:** "When you see the cost to the HSE budget of ONS, so that's something that I would maybe think about a little bit more as to whether or not people actually need to be on things and do try in kind of those that maybe would feel no longer need them to try and stop them" **GP11:** "So you know they are expensive and if they have a role, great, if they help someone recover their weight, great, but there's a start of it and an endpoint to them. So it's a treatment course not an indefinite."
ONS misuse by certain patients	**GP4:** "Some patients themselves are worried or their family are worried and we're under sort of pressure be it either from the patient themselves or their family. They feel we must be doing something in their moods, and that's more of a perceived belief that there are malnourished rather than them actually needing it." **GP6:** "For some people it's just their reluctance to engage. They'd decided they need Product X, they want Product X, they sort of see it as a quick fix." **GP7:** "Well, I would say a lot of people would say; I don't have an appetite. Could you give me that? Say, maybe particularly in the drug use population or in the elderly." **GP5:**"But in our homeless and drug-users population, nutritional supplements have a very high value. The patients like being prescribed them because they can sell them or because they just like using them themselves." **GP11:** "Sometimes they can take over and be seen as the lifeline that's keeping somebody alive to the expense of food"
Perceived conflict of interest	**GP1:** "The nursing home does have a deal with one of the oral nutritional supplementation producers that they get a dietitian comes in for free once a month and sees whoever needs to be seen and that may or may not lead to increased levels of prescribing, certainly we would tend to go along with whatever they advise, right or wrongly." **GP14:** "We probably would have had more … probably would be more influence on our use of nutritional supplements from say the private industry and from companies who make them, than maybe say, the HSE per se or in terms of a guideline type thing" **GP16:** "In my old practice, I would have done a nursing home and I find that quite difficult because it was a private nursing home that had some arrangements with the oral nutritional supplement company"

*__GP__ = General Practitioner; **ONS** = Oral Nutritional Supplements; **HCPs** = Healthcare Professionals; **HSE;** Health Service Executive.

on the clinical reasons for weight loss or low BMI than malnutrition. Malnutrition was, therefore, not prioritised in the consultation and in some cases no screening for malnutrition occurred.

Supporting statements from the CSR

> *"So no, we haven't (referring to monitoring weight) because I suppose that given her case, she's got a lot of other problems going on. It's at the least of our worries, unfortunately."* **GP4**

> *"So he's had a baseline bloods and he'd have had liver function tests, but no, I don't know how he gets his meals. So, no. No formal nutritional screening."* **GP13**

Inappropriate prescribing of ONS

Of the 13 GPs that had initiated the ONS prescription, approximately one-third (n = 4) did not always prescribe ONS for their intended use based on appropriate prescribing criteria. For example, ONS were used as a "boost" and, in one case, the ONS prescription was used as an incentive for the patient to collect the prescription for the medication to control their medical condition. One GP also described the ONS as having a "placebo effect".

Supporting statements from the CSR

> *"I think it was going to have an added benefit of giving him that sense of encouragement that we were doing something proactive to boost his energy. So, I suppose that knock on placebo effect from being proactive was going to be a big help to him but it wasn't just for that purpose."* **GP2**

> *"This is just really to perk him up."* **GP3**

> *"So, I think in this case that that was the reason why it was prescribed because it's an incentive for this patient …. Yeah, I think this patient doesn't … wouldn't meet the criteria for being prescribed. I don't think her BMI is low or anything like that."* **GP5**

> *"I think I just went for general energy. Did I know specifically what I wanted to give him? Probably not. I just felt he needed a boost and I don't know what the definition of a boost is."* **GP10**

Barriers to the food-first approach

The GPs are advocates of a food-first approach; however; they also identified barriers to the implementation of this approach. The barriers ranged from behavioural issues to dental problems.

Supporting statements from the CSR

> *"I suppose that is the short answer, the nursing care do try and encourage oral intake but food and fluid would be difficult to keep up with his demands and sometimes he can be more tired or lethargic than others, sometimes there is behavioural issues."* **GP1**

> *"I wouldn't like him to rely on it as a source of nutrition. So when he comes in, I'm still saying your diet is really important and what you eat and these drinks are just to help you a little bit but what you eat every day is still the most important thing."* **GP10**

> *"We try at every consultation to give him dietary advice. But it's not always possible. It depends if his mood is good. He might be more receptive to that advice. But when he's been drinking quite frequently and regularly, it can be more difficult to give him that advice. Yeah."* **GP12**

> *"We're in the process of trying to wean him off. He had no teeth, or two teeth, and lost his dentures, and that was his main, I suppose, reason or indication that … well his reason, anyway, for being on them. But … sort of bad as you age, but he's very reluctant to stop them."* **GP16**

Lack of knowledge to prescribe a range of ONS

As identified in the interviews, GPs reported lack of knowledge to prescribe a range of ONS. This was evident when asked in the CSR whether they would discontinue or change the ONS the patient was currently taking.

Supporting statements from the CSR

> *"So I wouldn't have made that change. Again, I wouldn't have the knowledge to."* **GP8**

> *"So it wouldn't, in my opinion, be safe just to change around her oral nutritional supplements without guidance."* **GP12**

> *"The fact that he had ongoing issues with chronic illness and that his BMI and weight being stable, so it was more just, kind of, if it ain't broke don't fix it kind of thing."* **GP14**.

Safety in familiarity

This lack of knowledge often led to GPs only prescribing ONS they or their colleagues were familiar with and/or had previously used. In some cases, the GP relied on the patient to make the decision on which ONS to prescribe.

Supporting statements from the CSR

> *"I think since that I've found on other patients previously that it had a good impact on their overall energy levels when it was a big factor, cause it was his fatigue was the major thing, and I thought yeah."* **GP2**

> *"It's the one that we know about. So it's the one we usually go to."* **GP6**

> *"It was … Well she did actually specify (product name) and that's why. And that's probably why she wasn't continued further on it because people do come in and ask for it a little bit, so the fact that she requested it, I think she had been on it before, previously, and also it was one that was familiar enough to me."* **GP14**

Over-reliance on dietitians

Lastly, many GPs reported they had no dietetic service available to them. Those that did tended to overly-rely on the dietetic service and did not actively monitor the ONS prescription.

Supporting statements from the CSR

> *"I think we will continue those (ONS) until dietetics tell us otherwise."* **GP4**

"I'm just following their (dietitians) advice." **GP6**

"I'm sure the decision to stop them won't be mine. I think it will be somebody else's decision." **GP10**

Discussion

This qualitative study with 16 GPs identified a number of issues with recognising and managing malnutrition, and the appropriate use of ONS in the primary care setting. GPs reported mainly addressing malnutrition in an ad hoc manner based on its co-existence with a co-morbidity that would predispose to its development. Therefore, patients with chronic conditions, mental health issues or post-surgery were identified as patients to be "mindful for". However, no structured malnutrition screening took place with these patients, and diagnosis was triggered primarily by weight loss identified through direct patient observation or self-reported by the patients. Social factors were also identified as a trigger for a malnutrition diagnosis, mostly in the older population due to an inability to cook and/or do their shopping in certain cases.

The National Institute for Health and Care Excellence (NICE) guidelines on nutritional support for adults recommend screening all outpatients for malnutrition and the risk of malnutrition at their first clinical appointment, and weekly thereafter for those for whom there is a clinical concern [35]. In Ireland, the Malnutrition Universal Screening Tool (MUST) and the Mini-Nutritional Assessment-short form (MNA-SF) are malnutrition screening tools recommended by the Health Service Executive for use in the community setting to screen for malnutrition [36]. However, only a few GPs in this study mentioned using MUST to help them in the diagnosis of malnutrition which is in line with findings in earlier research carried out in Ireland and also internationally [25,28,37,38]. Much of the malnutrition existing on admission to hospital and residential care has been found to have its origin in the community; therefore, systematic screening for malnutrition is desirable in primary care to prevent individuals deteriorating further and ending up in acute or institutionalized care [39].

Several reasons have been given for the lack of screening for malnutrition in the community, among others, the consideration of overweight and obesity as a public health priority, and a lack of GP ownership in dealing with malnutrition [37]. Both reasons are strong themes in our data, with GPs prioritizing the medical management of clinical conditions, and, nutritionally, the treatment of overweight and obesity within a multidisciplinary resource and time poor environment. GPs in our study also reported that they felt alone trying to manage and treat malnutrition and that there is frequently a breakdown in communication between the hospital and primary care when it comes to the prescription of ONS. This is not surprising as a study in the UK and the Republic of Ireland reported that just 8% of discharge communications 'always; and '4%' usually included nutritional information [39]. The GPs in this study suggested there was a need for better communication from the hospital on patient discharge but also a stronger multidisciplinary team in the community. GPs proposed that greater access to dietitians and empowering community nurses to deal with malnutrition could help improve its management. The former is in line with the recent GLIM criteria for the diagnosis of malnutrition, which states that malnutrition diagnosis should be complemented by a comprehensive nutritional assessment by a trained nutrition practitioner such as a dietitian in order to provide individualized care to patients [17].

Some GPs reported a lack of awareness of malnutrition as well as a busy clinical agenda in which malnutrition is not the priority for their patients. Time constraints have been found to be a barrier for malnutrition screening in earlier studies; a quantitative cross-sectional French study that included 493 GPs also reported that just 26.6% of GPs implemented malnutrition screening. The barriers to malnutrition screening reported were; the ability to select the appropriate patients to screen (60.4%), forgetting to screen (26.6%), lack of knowledge on nutritional screening (19.5%) and time (15.0%) [38]. A recent review of 21 studies examined the barriers and facilitators for the screening and treatment of malnutrition in community-living older adults. Time taken to screen for malnutrition was identified as one of the main barriers for HCPs; however, shorter screening tools and enabling patients to fill out their nutritional screen were identified as facilitators for screening [40].

GPs reporting lack of time is an understandable situation given the time pressure associated with treating mainly patients with multiple clinical conditions during a brief consultation and highlights the need for a preventive multidisciplinary approach in the community to identify malnutrition (Table 2). Another solution, in light of the recent findings that patients' self-screening is a facilitator to screen and treat for malnutrition, is to find ways to promote patients' self-screening [40]. A recent study in The Netherlands using two online screening tools found that approximately 57% of community-living older adults were at risk of malnutrition, thus, concluding that this easy access online screening could be useful to reach older adults at nutritional risk and could therefore, contribute to early identification and prevention [41]. Another recently published study by Elia et al. used a device with sonic height measurement for nutritional self-screening of gastrointestinal outpatients, finding excellent agreement between HCPs screening and self-screening [42].

NICE guidelines recommend the use of ONS in the case of patients at risk of malnutrition or who are already malnourished [35]. In general, all GPs felt reluctant in initiating the prescription of ONS due to their lack of confidence with the different products available on the market and their preference for a dietary approach to resolve malnutrition. NICE guidelines also recommend that dietary advice should be included in the treatment of patients with malnutrition [35]. So called Food-First advice should be used as first-line and/or in conjunction with ONS when treating patients at risk of malnutrition or malnourished (Fig. 1) [22]. Although all GPs were advocates of a dietary approach, none had heard of the Food-First advice and all were unfamiliar with the use of dietary fortification as the desirable approach to treat malnutrition. Instead many referred to healthy eating, the "Food Pyramid" and the "Mediterranean diet" as the advice they would provide to malnourished patients, all of which are clinically unsuitable for this patient group. Inappropriate dietary advice provided by non-dietetic HCPs to malnourished patients has been previously reported [28]. A lack of nutrition education has been reported internationally in medical and nursing curricula, as well as the need for dietitians to educate medical students and other HCPs on the importance of nutrition to prevent disease [15,43].

A common cause of concern among the GPs interviewed was the misuse of ONS by certain patients, more specifically, they were generally reluctant to prescribe ONS for patients with addiction issues as these products have street value and may be sold on the 'black market' rather than used for intended purposes. This provides further evidence and confirms the suspicions reported in the earlier Irish study by Kennelly et al. about the relationship between ONS use and alcohol and drug abuse [25]. This issue is not well described in the literature, with just one other study acknowledging an issue with the prescription of ONS due to social problems such as alcohol or drug use [44]. Despite the high prevalence of anorexia and malnutrition in drug users, no guidelines are

currently available on the management of these conditions in this vulnerable group [45–47].

Another reason for the GPs' reluctance to prescribe ONS was a high awareness of their cost to the Irish Health Service Executive [40]. Clinical Nutritional Products are currently the most expensive item dispensed by ingredient cost on the General Medical Scheme (GMS) in Ireland (approximately €45 million) [48]. This cost awareness lead to GPs reporting that ONS is a rare prescription in their practice and some of them wondering whether they were under-prescribing. Under-prescribing ONS when needed can potentially have an impact on the treatment of malnourished patients leading them to deteriorate further. Therefore, a greater emphasis on appropriate prescribing following all the previously described steps rather than cost-saving alone, in order to increase the quality of the treatment plan received by patients at risk of malnutrition or malnourished, is a more valuable and evidence-based approach.

An earlier Irish study that included a community education intervention with dietitian support, demonstrated improved ONS prescribing according to best practice guidelines while at the same time its expenditure remained stable in the intervention group despite a 28% increase nationally [49]. Cost analyses in Ireland and the UK have found that the targeted use of ONS may reduce hospitalisations by 168,438 beds per year [50] and lead to net cost savings of between £63, 192, 501 and £81, 870, 330 on the annual budget [51]. Moreover, dietary advice, together with ONS prescribing has been found to be the most effective intervention in elderly individuals at risk of malnutrition across healthcare settings, increasing both energy intake and body weight [20].

GPs in our study commonly reported a lack of communication regarding ONS prescriptions commenced elsewhere, more specifically in the patients' transition from the hospital to the community which could lead to ONS passively continued with no revision. A recent UK study found that the involvement of renal dietitians in reviewing and making recommendations on an online prescription system to update patients medications resulted in an improvement on the accuracy of the medication lists [52]. The entry of recommendations to the electronic health record by dietitians also resulted in a greater number of patients receiving their dietetic treatment. Furthermore, a recent Swedish study of 96 patients found that individual tailoring of ONS prescriptions by the dietitian was likely to explain the high level of ONS adherence in the population [53]. In 2016, the UK Human Medicines Regulations (2012) were amended to include supplementary prescribing rights for dietitians, defined as 'a voluntary prescribing partnership between the independent medical prescriber and the supplementary prescriber, to implement an agreed patient-specific clinical management plan with the patient's agreement [54]. Therefore, more dietetic involvement and dietetic supplementary prescribing rights have the potential to improve quality of care, safety and patient outcomes.

Strengths and limitations

A strength of this study is that it is, to our knowledge, the first qualitative research to investigate the opinions of GPs regarding the management of malnutrition in the community. The credibility of the present findings was enhanced by using CSR, which has been shown to be a valid way of assessing clinical decision-making through improving recall of actual rather than perceived behaviour. Despite the sample being limited to three CHOs, it gives insight into both urban and suburban primary care practices. Furthermore, the large sample of patients in the CSR represented both privately and publicly insured patients of mixed age and gender.

A potential methodological issue is that PDC and CMER have a background in nutrition and dietetics; however, both have developed research careers, with neither practising as a dietitian in the community. The situation was, therefore, considered as an advantage given that they understand malnutrition and its consequences, but at the same time, are both independent, unbiased, and experienced researchers.

Conclusions

GPs in Ireland are not currently routinely screening for malnutrition in their clinics as they feel unsupported in treating and managing malnutrition in the community due to limited or no dietetic service availability and time constraints. GPs view malnutrition as a secondary concern to disease management and prioritise dietetic services for patients with overweight and obesity. This study demonstrates that there is a clear need for a stronger primary care team trained in malnutrition identification and its first-line treatment. GPs reported not feeling confident prescribing ONS due to the wide range available and their lack of knowledge about them. The implementation of prescribing rights for dietitians in Ireland has the potential to prevent inappropriate ONS prescriptions.

Authors contributions

Patricia Dominguez Castro lead the collection, analysis and interpretation of data, and wrote the manuscript, Ciara ME Reynolds contributed to data collection, analysis and interpretation, and the writing of the manuscript, Barbara Clyne and Sarah Browne contributed to data interpretation and the critical review of the manuscript, Gerard Bury and Carla Perrotta contributed to data collection and the critical review of the manuscript, Sharon Kennelly, David Hanlon, Celine Murrin, Laura McCullagh, Karen Finnigan, Sarah Clarke and Eileen Gibney contributed to the critical review of the manuscript, Clare Corish conceived and supervised the study and contributed to data interpretation, and the critical review of the manuscript.

Sources of funding

Work performed at the School of Public Health, Physiotherapy and Sports Science in University College Dublin. This research was funded under an Irish Health Research Board (HRB) quality and patient safety funding stream (RCQPS-2017-4), no other specific grant from any funding agency in the public, commercial or not-for-profit sectors was received. All authors approved the final version of the paper.

Declaration of Competing Interest

The authors declare no conflicts of interest.

Acknowledgements

The authors want to acknowledge the Health Research Board (HRB) for funding this project under a quality and patient safety funding stream (RCQPS-2017-4). The Health Research Board (HRB) supports excellent research that improves people's health, patient care and health service delivery. The HRB aims to ensure that new knowledge is created and then used in policy and practice. In doing so, the HRB supports health system innovation and create new enterprise opportunities.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.clnesp.2020.01.006.

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