

Review

# Dehydration and Malnutrition in Residential Care: Recommendations for Strategies for Improving Practice Derived from a Scoping Review of Existing Policies and Guidelines

Diane Bunn <sup>1,\*</sup>, Lee Hooper <sup>2</sup> and Ailsa Welch <sup>2</sup> 

<sup>1</sup> School of Health Sciences, Norwich Research Park, University of East Anglia, Norwich NR4 7TJ, UK

<sup>2</sup> Norwich Medical School, Norwich Research Park, University of East Anglia, Norwich NR4 7TJ, UK; l.hooper@uea.ac.uk (L.H.); a.welch@uea.ac.uk (A.W.)

\* Correspondence: d.bunn@uea.ac.uk; Tel.: +44-1603-591966

Received: 11 October 2018; Accepted: 4 November 2018; Published: 12 November 2018



**Abstract:** Preventing malnutrition and dehydration in older care home residents is a complex task, with both conditions remaining prevalent, despite numerous guidelines spanning several decades. This policy-mapping scoping review used snowballing search methods to locate publicly-available policies, reports and best practice guidelines relating to hydration and nutrition in UK residential care homes, to describe the existing knowledge base and pinpoint gaps in practice, interpretation and further investigation. The findings were synthesised narratively to identify solutions. Strategies for improvements to nutritional and hydration care include the development of age and population-specific nutrient and fluid intake guidelines, statutory regulation, contractual obligations for commissioners, appropriate menu-planning, the implementation and auditing of care, acknowledgment of residents' eating and drinking experiences, effective screening, monitoring and treatment and staff training. The considerable body of existing knowledge is failing to influence practice, relating to translational issues of implementing knowledge into care at the point of delivery, and this is where future research and actions should focus.

**Keywords:** aged; homes for the aged; malnutrition; dehydration; nutrition policy

## 1. Introduction

There is widespread consensus that malnutrition and dehydration are prevalent conditions in older people living in residential care, and have been so for many years, as evidenced by numerous research papers and publications by governments, charitable and professional bodies. Many of these documents include recommendations for combatting these largely preventable conditions. Even so, malnutrition and dehydration in care homes remain ongoing issues, which may be indicative of the complexities associated with providing effective nutritional and hydration care for this population [1–5].

Over the last three years, at least another ten published reports have highlighted aspects of nutrition, hydration and supplementation in UK care homes:

- Between 2014–2017, the Care Quality Commission (CQC) took approximately 50 enforcement actions against care homes for breaching nutrition and hydration regulations [6].
- A UK consensus study to establish research priorities in care homes identified nutritional and hydration care as essential due to the poor nutritional status of many care home residents [7].
- 20% of older people living in UK care homes were dehydrated [8].

- The National Health Service (NHS) framework for enhanced health in care homes recommended nutrition and hydration support as core requirements [9].
- The Scientific Advisory Committee on Nutrition (SACN) [10], the National Institute of Health and Clinical Excellence (NICE) [11,12], Health Improvement Scotland [13] and the National Osteoporosis Society [14] each recommended vitamin D supplementation in all older people to improve skeletal health.
- The British Association for Parenteral and Enteral Nutrition (BAPEN) reported 34% of older care home residents were malnourished [15].
- The British Dietetic Association issued a policy statement highlighting the growing issue of malnutrition in older people living in care homes, and the dietitian's role in prevention [16].

These findings and recommendations are not new, they are just the most recent publications representing a plethora of reports attempting to address this crucial area, and this is not only limited to the UK (see for example References [17–21]).

Malnutrition is defined as a deficiency of one or more nutrients resulting in measurable adverse effects on body composition, function or clinical outcome [22] whilst low-intake dehydration is defined as a deficiency of water due to insufficient drinking [23]. Malnutrition is a risk factor for sarcopenia and frailty [21,24,25], and both conditions increase vulnerability to adverse outcomes and limit quality of life, health and well-being [26–28]. An estimated 90% of older care home residents have osteoporosis and one third are vitamin D deficient [14,19,29,30]. Blood vitamin C concentrations indicative of scurvy are present in 40% of residents [4]. These are likely related to poor nutrition and in the case of osteoporosis, a lack of vitamin D supplementation. Other micronutrient deficiencies are also highly prevalent [4]. Despite NICE recommendations for vitamin D supplementation in at-risk groups in the UK, our recent study [8] found just 23% of 200 older adults aged 65–104 years living in residential care were prescribed vitamin D (DRIE, Dehydration Recognition in our Elders study, unpublished data), and this has been confirmed by other UK studies [31]. Low-intake dehydration is found in 20% of older adults living in residential care and is associated with an increased risk of disability, falls, infections, unplanned hospital admission and mortality [28,32].

Looking forward, increased life expectancy and increasing numbers of people reaching older ages means that more older people will require residential care [33–35]. Effectively addressing malnutrition and dehydration in older care home residents is urgently required, both to improve health and quality of life, and to reduce the burden on healthcare systems [36,37]. However, knowledge of malnutrition and dehydration prevalence is failing to influence practice.

The aim of this scoping review was to identify and map publicly-accessible policies, guidelines and “best practice” documents relating to hydration, nutrition and nutritional supplementation in UK residential care homes to identify the key components of effective nutritional and hydration care, describe the existing knowledge base and identify gaps in existing literature to signpost areas of future investigation and research.

## 2. Materials and Methods

We followed the framework of Arksey and O'Malley [38] to identify policies, reports and best-practice guidelines for this policy-mapping scoping review, and using snowballing search methods, as these documents are not indexed by standard bibliographic databases [39,40]. Key documents were initially identified by the research team and one reviewer (DB) checked the cited references, using judgement to determine which ones to pursue further, as well as forward-tracking relevant cited documents. In addition, we used our professional networks to alert us to relevant documents published over the course of the study. We included documents relating to nutrition, hydration and/or nutritional supplementation in UK care home settings specifically, and in older people generally, if the setting included older people living in care homes (Supplementary Table S1). We tabulated key points and undertook a narrative synthesis to identify key components of effective

nutrition and hydration care in care homes, and to describe the extent of existing knowledge with a focus on identifying areas for future research.

As a scoping review of publicly-available documents, ethical approval was not required for this study.

### 3. Results

We retrieved 79 documents, 75 of which were from the UK, but we included one published by the Council of Europe and three published by WHO, as both organisations may influence UK policy. Of the 75 UK documents, 60 were published by public bodies (including NICE, SACN, Public Health England, Food Standards Agency), nine by charitable organisations (Age UK, BAPEN, Caroline Walker Trust) and six by professional bodies (such as the British Dietetic Association). All were broadly relevant to older people living in residential care settings, but 28 of these related specifically to older people living in residential care.

Narrative synthesis identified eight key aspects of nutritional and hydration care in care homes that need to be addressed. These are outlined in Table 1 and discussed in detail below.

#### 3.1. Focussed Regulation of Nutritional and Hydration Care

The UK independent health and social care regulators are the CQC (England and Wales) [41], the Care Inspectorate (Scotland) [42] and the Regulation and Quality Improvement Authority (Northern Ireland) [43,44]. For all three regulators, nutrition and hydration in care homes are key components of their regulatory duties, but the regulations only provide broad outlines as to what nutrition and hydration care should entail, rather than specifically detailing how they should be achieved [42,45–55]. Alongside these regulations, government agencies in all four UK countries have each published a number of standards and guidelines covering nutrition and hydration care in care homes in various detail, but it is unclear how these guidelines should map to the regulator's requirements to fulfil the requirements of the regulations. We suggest that the implementation of existing guidelines is integrated into existing regulatory systems.

#### 3.2. Commissioning Nutritional and Hydration Care

Care home ownership falls into three broad categories: Private sector (owned by individuals, partnerships, public and private limited companies), voluntary sector (owned by charities) and the public sector (owned and managed by local authorities or NHS trusts). Apart from those owned and managed by NHS trusts, care homes come under the auspices of Local Authority Social Care [56].

Local authorities, as well as the NHS, are major commissioners of services. As commissioners, the NHS and local authorities can be influential in improving hydration and nutritional care in care homes, by ensuring that nutrition and hydration care are in the contracting, quality assurance and performance monitoring of commissioned services [57,58]. We agree with NHS England's conclusions that the commissioning process should take an integrated approach, acknowledging the psychological, physical and social aspects of nutrition and hydration, but as with regulation, further guidance is needed to map existing nutrition and hydration guidelines to appropriate policies for commissioning services.

**Table 1.** Key aspects of nutritional and hydration care in care homes.

Aspect	Summary of Findings	Summary of Recommendations
(i) Regulation	There are government guidelines and regulations in place, but they lack detail about how recommendations should be implemented.	To ensure existing guidelines are implemented appropriately, they should be integrated into the existing regulatory systems.
(ii) Commissioning	Commissioners of services can influence nutritional and hydration care in care homes.	Guidance is needed to map existing nutrition and hydration guidelines to appropriate policies for commissioning of services.
(iii) Dietary guidelines	There are a considerable number of nutritional and supplementation guidelines in place in the UK.	Age and context-specific guidelines relating to specific nutrients, should be developed for people aged >65 years living in care homes.
(iv) Menu planning and catering issues	There are a considerable number of reports and guidelines in place regarding catering and menu planning in care homes.	Implementation of existing guidelines should be a constituent of the regulatory process.
(v) Residents' eating and drinking experience	The resident's eating and drinking experience is crucial in preventing malnutrition and dehydration, and whilst a number of reports recognize this, further insights from residents themselves may highlight other factors.	Further research and increased involvement of residents, families and care staff is required to identify positive and negative practices associated with nutrition and hydration care in care homes.
(vi) Screening and monitoring	Screening and monitoring are recognised as important aspects of nutritional care when used appropriately. There is currently no validated tool assessing dehydration risk.	Clear care pathways to be identified where screening for malnutrition and dehydration risk includes specific courses of action for appropriate care.
(vii) Implementing and auditing change	Implementing guidelines for nutritional care is crucial for preventing malnutrition and dehydration, but effecting permanent change requires a structured approach involving all staff. A national audit tool may aid implementation.	The development of a national compulsory nutritional audit tool to support the implementation of a cohesive nutritional care pathway.
(viii) Staff training	Staff providing nutrition and hydration care in care homes should have the necessary skills and knowledge, but the details of what these skills and knowledge should be has not been defined.	Nationwide training competencies to be developed that are applicable to all care home staff roles.

### 3.3. Nutrient, Dietary and Supplement Guidelines for Older People >65 Years

Nutrient and dietary guidelines have been published by several UK organisations [10–13,46,54,59–74], but most track back to the 1991 Committee on Medical Aspects of Food Policy (COMA) Report [63], although SACN has recently updated findings on certain nutrients, including vitamin D [10].

Beyond the UK, the European Council [75] and World Health Organization (WHO) [76] have each published documents relating to nutritional care for older people, although only the European Council document refers specifically to older people living in care homes. In addition, both the European Food Safety Agency and the WHO have produced guidelines relating to specific nutrients, some of which may be applicable to older people living in care homes, but they have not developed evidence-based guidelines for older residents with respect to their particular problems and requirements [77].

### 3.4. Menu Planning and Catering

Catering involves the procurement and sourcing of foods, food safety, food waste and related ethical principles, whereas menu planning addresses how menus are planned to meet nutrient and dietary guidelines for care home residents. Several UK reports address both these issues [46,54,59–61,66–68,78], but there is no statutory requirement for care homes to follow these guidelines. We recommend that detailed guidance on the implementation of these guidelines is included in the regulatory process.

### 3.5. Residents' Eating and Drinking Experience

Care home residents' eating and drinking experiences are crucial aspects of nutritional and hydration care and should be fully acknowledged when addressing malnutrition and dehydration. Key aspects include [46,54,60,61,68,79–83]:

- Residents' eating and drinking skills.
- Available eating and drinking assistance.
- Oral health.
- Swallowing abilities.
- Sensory abilities.
- Appetite and anorexia of aging.
- Exercise.
- Individual, cultural and/or religious preferences.
- Dietary needs.
- Food presentation.
- Social and physical environment.
- Institutional systems and organisation.
- Support from health professionals, including dietitians, and speech and language therapists.

Historically, many reports discussing residents' experiences have failed to involve the residents themselves. Although more recent work increasingly includes residents' and carers' perspectives, more resident involvement is needed to identify outcomes in care home practice and research [84].

### 3.6. Screening and Monitoring

Screening identifies people at risk of malnutrition and dehydration with a view for instigating an intervention; whereas monitoring is the ongoing assessment of nutritional and hydration status. The recent Global Leadership Initiative on Malnutrition recommended that malnutrition risk screening should be undertaken on anyone coming into contact with health professionals [18].

In the UK, the most commonly-used nutrition screening tools are the Malnutrition Universal Screening Tool (MUST) [85], and the Mini Nutritional Assessment (MNA) [86]. Key documents

addressing screening and monitoring in care homes [15,54,60,61,79,87] include a BAPEN report summarising the results of four surveys undertaken in 2007–2011, finding that malnutrition was present in 34% of residents, despite most care homes using MUST and having a nutritional screening policy. Using recognised nutritional screening tools is not compulsory [88], but is considered good practice, despite the lack of supporting evidence demonstrating how residents identified as being at risk of malnutrition are subsequently treated, or whether assessing nutritional status predicts outcome [89].

There is currently no effective screening tool for dehydration validated in older people, aside from the reference standard; serum or plasma osmolality [83,90,91]. To address this deficit, some organisations have developed their own risk assessment tools [92], attempting to identify those at most risk. However, without validation, it is not known whether the tools work, with the possibility that the reliance on a misleading tool is harmful.

There is a need to develop and share care pathways that include the identification of malnutrition and dehydration risk accompanied by guidance regarding subsequent interventions, as in the USA, where the Resident Assessment Instrument (a guide for identifying problems and treatment pathways) is mandatory in all care homes [93].

### 3.7. Implementing and Auditing Change

Implementing nutritional guidelines is key, as addressed by several reports [47–49,52,54,87,94–98], but details are often scanty on how the implementation was achieved and sustained, in order to enable the replication of best practice. Studies investigating the sustainability of interventions post-withdrawal of the research team report mixed findings, and a recent systematic review investigating interventions to change care home staff practices concluded that this was complex and challenging [99]. Recent revealing research described three barriers to implementing the Food Standards Agency's nutritional guidelines in care homes [97]:

- Some staff felt that guidelines were irrelevant, and were seen as being restrictive.
- For staff who could see the relevance of guidelines, implementation was hampered by a lack of nutritional knowledge and institutional support.
- Staff perceived that residents in their care were not benefitting from the guidelines.

Developing a national compulsory nutritional audit tool may support the implementation of a cohesive nutritional and hydration care pathway [100].

### 3.8. Training in Nutritional and Hydration Care

CQC guidelines stipulate that nutrition and hydration assessments should be conducted by staff who have the necessary skills and knowledge, and training enables staff to acquire the ability to deliver appropriate nutritional care [79,101]. However, what essential knowledge is required and what training is needed to provide this is unclear. There is no formal requirement or agreed standards for care home staff regarding nutritional and hydration care [102] so training is often 'ad hoc', poorly supported and under-funded.

The Association of Nutrition identified training needs and competencies for those delivering nutritional care in care homes at different levels [103], starting at levels 3/4 (equivalent to the 'A' level standard). We would recommend a wider range of training opportunities be developed that are applicable to all care staff roles.

Nurses working in care homes are expected to adhere to the Nursing and Midwifery (NMC) Code of Practice, where hydration and nutrition are explicitly listed as one of the six fundamental aspects of care, thus requiring nurses to be knowledgeable about appropriate care.

#### 4. Discussion

We have identified that effective nutritional and hydration care pathways in care homes should encompass eight key areas, as summarised in Table 1. There are a number of guidelines, policies and best practice documents addressing regulation, commissioning, dietary guidelines, vitamin D supplementation, menu planning and catering issues, but there are major gaps in how this considerable body of existing knowledge is failing to influence practice. This is due to translational issues of implementation to improve care at the point of delivery. Good nutrition and hydration is essential for resident well-being, and is a fundamental aspect of nursing care [104,105]. Further research is needed to provide evidence to guide nursing interventions [80,81,83,106].

This is the first scoping review which we are aware of that focusses on UK residential care, aiming to map policies and guidelines influencing nutrition and hydration care, and to provide an in-depth analysis. Scoping reviews, whilst recognised as being non-systematic, are valued by commissioners and policymakers as useful tools to identify and map wider literature, much of which is not published in peer-reviewed journals, such that questions and topics for future research and service development can be identified [40]. The snowballing search techniques utilised in this review were wide-ranging and used in the knowledge synthesis, developing the eight components of an effective nutritional care pathway. In our knowledge synthesis we reached saturation point, where ongoing synthesis reinforced our findings with no new components being identified.

In recognising that malnutrition and dehydration are prevalent in the UK, numerous agencies have found resources to comment on the current state and make suggestions as to how to improve, and there are good examples of successful initiatives, but these initiatives need to be more widespread, with supporting evidence of their sustainability.

Whilst we have described the situation in detail in the UK, malnutrition and dehydration are prevalent in many other countries worldwide [20], including Europe [17,75], North America [107,108] and Australia [109,110], thus the conclusions we have drawn are likely to be applicable internationally, despite differences in healthcare systems and guiding policies between individual countries.

Further research is needed to understand how to successfully translate knowledge into care at the point of delivery. The development of guidelines for resolving these issues is urgently needed.

#### 5. Conclusions

Malnutrition, dehydration and low rates of vitamin D supplementation remain prevalent in older care home residents, and are associated with poor quality of life, comorbidities, increased hospital admissions and mortality.

Effective nutritional and hydration care pathways in care homes should encompass eight key areas (Table 1), and whilst there are many documents addressing regulation, commissioning, dietary guidelines, vitamin D supplementation, menu planning and catering issues, there are major gaps in how these documents influence practice. Further work is required to identify how to pull together the considerable body of documents into a comprehensive set of readily accessible guidelines to address implementation, including the residents' eating and drinking experience, screening and monitoring, staff training, implementing and auditing change. The authors and several organisations, including the National Osteoporosis Society, are working to develop solutions to these issues of implementation of guidelines for nutrition and hydration in care homes.

**Supplementary Materials:** The following are available online at <http://www.mdpi.com/2308-3417/3/4/77/s1>. Table S1: UK publicly-available policies, reports and best practice guidelines regarding Nutrition and Hydration care in care homes.

**Author Contributions:** D.B. and A.W. developed the concept of the study and undertook data collection. D.B., L.H., A.W. developed the design, analysis, interpretation, drafting and reviewing of the manuscript. All authors have reviewed and approved the final version of the manuscript.

**Funding:** This research received no external funding.

**Acknowledgments:** We would like to thank the National Osteoporosis Society Scientific Advisory Committee and the Nutrition and Lifestyle Forum for preliminary discussions that initiated this scoping review on the area of nutrition, vitamin D supplementation and dehydration in care homes, and which preceded the concept and development of this paper.

**Conflicts of Interest:** None of the authors has declared any competing interests (financial or non-financial).

## References

1. Age Concern. Hungry to Be Heard. 2006. Available online: <http://www.scie.org.uk/publications/guides/guide15/files/hungrytobeheard.pdf> (accessed on 1 July 2016).
2. Age UK London. Still Hungry To Be Heard—In London. 2010. Available online: [http://www.ageuk.org.uk/brandpartnerglobal/londonvpp/documents/still\\_hungry\\_to\\_be\\_heard\\_report.pdf](http://www.ageuk.org.uk/brandpartnerglobal/londonvpp/documents/still_hungry_to_be_heard_report.pdf) (accessed on 1 July 2016).
3. Care Quality Commission. Time to listen in care homes: Dignity and Nutrition Inspection Programme. 2012. Available online: [http://www.cqc.org.uk/sites/default/files/documents/time\\_to\\_listen\\_-\\_care\\_homes\\_main\\_report\\_tag.pdf](http://www.cqc.org.uk/sites/default/files/documents/time_to_listen_-_care_homes_main_report_tag.pdf) (accessed on 1 July 2016).
4. Bates, C.J.; Prentice, A.; Cole, T.J.; Van der Pols, J.C.; Doyle, W.; Finch, S.; Smithers, G.; Clarke, P.C. Micronutrients: Highlights and research challenges from the 1994–1995 National Diet and Nutrition Survey of people aged 65 years and over. *Br. J. Nutr.* **1999**, *82*, 7–15. [CrossRef] [PubMed]
5. Wilson, L. Hydration and Older People in the UK: Addressing the Problem, Understanding the Solutions. 2014. Available online: [http://www.ilcuk.org.uk/index.php/publications/publication\\_details/hydration\\_and\\_older\\_people\\_in\\_the\\_uk](http://www.ilcuk.org.uk/index.php/publications/publication_details/hydration_and_older_people_in_the_uk) (accessed on 1 July 2016).
6. Care Quality Commission. The State of Adult Social Care Services. 2017. Available online: [http://www.cqc.org.uk/sites/default/files/20170703\\_ASC\\_end\\_of\\_programme\\_FINAL2.pdf](http://www.cqc.org.uk/sites/default/files/20170703_ASC_end_of_programme_FINAL2.pdf) (accessed on 25 July 2017).
7. Shepherd, V.; Wood, F.; Hood, K. Establishing a set of research priorities in care homes for older people in the UK: A modified Delphi consensus study with care home staff. *Age Ageing* **2017**, *46*, 284–290. [CrossRef] [PubMed]
8. Hooper, L.; Bunn, D.K.; Downing, A.; Jimoh, F.; Groves, J.; Free, C.; Cowap, V.; Potter, J.F.; Hunter, P.R.; Shepstone, L. Which frail older people are dehydrated? The UK DRIE study. *J. Gerontol. A Biol. Sci. Med. Sci.* **2016**, *71*, 1341–1347. [CrossRef] [PubMed]
9. NHS. New care models: The framework for enhanced health in care homes. 2016. Available online: <https://www.england.nhs.uk/ourwork/futurenhs/new-care-models/care-homes-sites/> (accessed on 24 September 2016).
10. Scientific Advisory Committee on Nutrition. Vitamin D and Health. 2016. Available online: <http://dermatology.jwatch.org/cgi/content/full/2009/522/1> (accessed on 31 August 2016).
11. National Institute for Health and Care Excellence (NICE). NICE: Management of Osteoporosis and Prevention of Fragility Fractures. 2016. Available online: <http://cks.nice.org.uk/osteoporosis-prevention-of-fragility-fractures#!topicsummary> (accessed on 25 August 2016).
12. National Institute for Health and Care Excellence. Sunlight exposure: Risks and benefits, ng34. 2016. Available online: <http://www.nice.org.uk/guidance/NG34> (accessed on 1 July 2016).
13. Health Improvement Scotland. Sign 142: Management of osteoporosis and the prevention of fragility fractures. 2015. Available online: <http://www.sign.ac.uk/pdf/SIGN142.pdf> (accessed on 25 August 2016).
14. National Osteoporosis Society. Your bones and osteoporosis: What every man, woman and child should know. Available online: <https://www.nos.org.uk/netcommunity/document.doc?id=425> (accessed on 1 July 2016).
15. Russell, C.A.; Elia, M. Nutrition screening surveys in care homes in England. 2015. Available online: <http://www.bapen.org.uk/pdfs/nsw/care-homes/care-homes-england.pdf> (accessed on 1 July 2016).
16. The British Dietetic Association. The Management of Malnourished Adults in All Community and All Health and Care Settings. 2017. Available online: [https://www.bda.uk.com/improvinghealth/healthprofessionals/malnutrition\\_policy\\_statement\\_2017](https://www.bda.uk.com/improvinghealth/healthprofessionals/malnutrition_policy_statement_2017) (accessed on 16 August 2017).
17. Arvanitakis, M.; Coppens, P.; Doughan, L.; Gossum, A.V. Nutrition in care homes and home care: Recommendations—A summary based on the report approved by the Council of Europe. *Clin. Nutr.* **2009**, *28*, 492–496. [CrossRef] [PubMed]



18. Cederholm, T.; Jensen, G. To Create a Consensus on Malnutrition Diagnostic Criteria: A Report From the Global Leadership Initiative on Malnutrition (GLIM) Meeting at the ESPEN Congress 2016. *J. Parenter Enter Nutr.* **2017**, *41*, 311–314. [[CrossRef](#)] [[PubMed](#)]
19. Duque, G.; Lord, S.R.; Mak, J.; Racc, F.; Med, K.G.; Close, J.J.T.; Ebeling, P.; Papaioannou, A.; Inderjeeth, C.A. Treatment of Osteoporosis in Australian Residential Aged Care Facilities: Update on Consensus Recommendations for Fracture Prevention. *J. Am. Med. Dir. Assoc.* **2016**, *17*, 852–859. [[CrossRef](#)] [[PubMed](#)]
20. Keller, H.H.; Beck, A.M.; Namasivayam, A.; I-Dine consortium. Improving Food and fluid intake for older adults living in long-term care: A research Agenda. *JAMDA* **2015**, *16*, 93–100. [[PubMed](#)]
21. Volkert, D. Malnutrition in older adults—urgent need for action: A plea for improving the nutritional situation of older adults. *Gerontology* **2013**, *59*, 328–333. [[CrossRef](#)] [[PubMed](#)]
22. National Institute for Health and Clinical Excellence. Quality standard for nutrition support in adults, qs24. 2012. Available online: <https://www.nice.org.uk/guidance/qs24> (accessed on 1 July 2016).
23. Thomas, D.R.; Cote, T.R.; Lawhorne, L.; Levenson, S.A.; Rubenstein, L.Z.; Smith, D.A.; Stefanacci, R.G.; Tangalos, E.G.; Morley, J.E.; Dehydration Council. Understanding Clinical Dehydration and Its Treatment. *J. Am. Med. Dir. Assoc.* **2008**, *9*, 292–301. [[CrossRef](#)] [[PubMed](#)]
24. Cruz-Jentoft, A.; Kiesswetter, E.; Drey, M.; Sieber, C. Nutrition, frailty, and sarcopenia. *Ageing Clin. Exp. Res.* **2017**, *29*, 43–48. [[CrossRef](#)] [[PubMed](#)]
25. Welch, A. Nutritional influences on age-related skeletal muscle mass. *Proc. Nutr. Soc.* **2014**, *73*, 16–33. [[CrossRef](#)] [[PubMed](#)]
26. Agarwal, E.; Miller, M.; Yaxley, A.; Isenring, E. Malnutrition in the elderly: A narrative review. *Maturitas* **2013**, *76*, 296–302. [[CrossRef](#)] [[PubMed](#)]
27. Morley, J. Undernutrition in Older Adults. *Fam Pract.* **2012**, *29*, i89–i93. [[CrossRef](#)] [[PubMed](#)]
28. Hooper, L.; Bunn, D.; Jimoh, F.; Fairweather-Tait, S. Water-loss dehydration and aging. *Mech. Ageing Dev.* **2014**, *136–137*, 50–58. [[CrossRef](#)] [[PubMed](#)]
29. Hirani, V.; Primatesta, P. Vitamin D concentrations among people aged 65 years and over living in private households and institutions in England: population survey. *Age Ageing* **2005**, *34*, 485–491. [[CrossRef](#)] [[PubMed](#)]
30. Warriner, A.; Outman, R.; Saag, K.; Berry, S.; Colon-Emeric, C.; Flood, K.; Lyles, K.W.; Tanner, S.B.; Watts, N.B.; Curtis, J.R. Management of osteoporosis among home health and long-term care patients with a prior fracture. *South Med. J.* **2009**, *102*, 397–404. [[CrossRef](#)] [[PubMed](#)]
31. Aspray, T.; Stevenson, P.; Abdy, S.; Rawlings, D.; Holland, T.; Francis, R. Low bone mineral density measurements in care home residents—A treatable cause of fractures. *Age Ageing* **2006**, *35*, 37–41. [[CrossRef](#)] [[PubMed](#)]
32. El-Sharkawy, A.; Watson, P.; Neal, K.; Ljungqvist, O.; Maughan, R.J.; Sahota, O.; Lobo, D.N. Hydration and outcome in older patients admitted to hospital (The HOOP prospective cohort study). *Age Ageing* **2015**, *44*, 943–947. [[CrossRef](#)] [[PubMed](#)]
33. Kingston, A.; Wohland, P.; Wittenberg, R.; Robinson, L.; Brayne, C.; Matthews, F.; Jagger, C.; Cognitive Function and Ageing Studies collaboration. Is late-life dependency increasing or not? A comparison of the Cognitive Function and Ageing Studies (CFAS). *Lancet* **2017**, *390*, 1676–1684. [[CrossRef](#)]
34. Appleby, J. Spending on health and social care over the next 50 years Why think long term? 2013. Available online: [https://www.kingsfund.org.uk/sites/default/files/field/publication\\_file/Spending%20on%20health%20...%2050%20years%20low%20res%20for%20web.pdf](https://www.kingsfund.org.uk/sites/default/files/field/publication_file/Spending%20on%20health%20...%2050%20years%20low%20res%20for%20web.pdf) (accessed on 16 December 2016).
35. Crawford, E.; Read, C. *The Care Collapse: The Imminent Crisis in Residential Care*; ResPublica: London, UK, 2015; Available online: <http://www.respublica.org.uk/wp-content/uploads/2015/11/ResPublica-The-Care-Collapse.pdf> (accessed on 16 December 2016).
36. Fried, L.P.; Tangen, C.M.; Walston, J.; Newman, A.B.; Hirsch, C.; Gottdiener, J.; Seeman, T.; Tracy, R.; Kop, W.J.; Burke, G.; et al. Frailty in older adults: evidence for a phenotype. *J. Gerontol. A Biol. Sci. Med. Sci.* **2001**, *56*, M146–M156. [[CrossRef](#)] [[PubMed](#)]
37. Kaiser, M.; Bandinelli, S.; Lunenfeld, B. Frailty and the role of nutrition in older people. A review of the current literature. *Acta Bio-Med. Atenei Parm.* **2010**, *81* (Suppl. 1), 37–45.

38. Arksey, H.; O'Malley, L. Scoping studies: Towards a methodological framework. *Int. J. Soc. Res. Methodol.* **2005**, *8*, 19–32. [CrossRef]
39. Greenhalgh, T.; Peacock, R. Effectiveness and efficiency of search methods in systematic reviews of complex evidence: Audit of primary sources. *BMJ* **2005**, *331*, 1064–1065. [CrossRef] [PubMed]
40. Anderson, S.; Allen, P.; Peckham, S.; Goodwin, N. Asking the right questions: Scoping studies in the commissioning of research on the organisation and delivery of health services. *Heal Res. Policy Syst.* **2008**, *6*. [CrossRef] [PubMed]
41. Care Quality Commission. Health and Social Care Act 2008 (Regulated Activities) Regulations 2014: Regulation 14, Meeting nutritional and hydration needs. 2014. Available online: <http://www.cqc.org.uk/content/regulation-14-meeting-nutritional-and-hydration-needs> (accessed on 15 October 2015).
42. The Scottish Government. National Care Standards Care Homes for Older People. 2007. Available online: <http://www.gov.scot/Resource/Doc/349525/0116836.pdf> (accessed on 1 July 2016).
43. The Regulation and Quality Improvement Authority. RQIA Provider Guidance 2017–18 Nursing Homes. 2017. Available online: <https://rqia.org.uk/RQIA/files/b8/b862785a-5126-48c8-8eb4-72aa09312215.pdf> (accessed on 30 September 2018).
44. The Regulation and Quality Improvement Authority. RQIA Provider Guidance 2017–18 Adult Residential Care Homes. 2017. Available online: <https://www.rqia.org.uk/RQIA/files/c0/c0fedf25-2408-48c8-a83d-06d48212364a.pdf> (accessed on 30 September 2018).
45. Department of Health. Care Homes for Older People—National Minimum Standards, 3rd ed. 2003. Available online: [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4135403.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4135403.pdf) (accessed on 1 July 2016).
46. Public Health Agency. Nutritional Guidelines and Menu Checklist for Residential and Nursing Homes. 2014. Available online: [http://www.publichealth.hscni.net/sites/default/files/Nutritional\\_guidelines\\_and\\_menu\\_checklist\\_march\\_2014.pdf](http://www.publichealth.hscni.net/sites/default/files/Nutritional_guidelines_and_menu_checklist_march_2014.pdf) (accessed on 1 July 2016).
47. Department of Health Social Services and Public Safety. Promoting good nutrition. A Strategy for good nutritional care for adults in all care settings in Northern Ireland 2011–2016. 2011. Available online: [https://www.health-ni.gov.uk/sites/default/files/publications/dhssps/promoting-good-nutrition\\_0.pdf](https://www.health-ni.gov.uk/sites/default/files/publications/dhssps/promoting-good-nutrition_0.pdf) (accessed on 1 July 2016).
48. Scottish Care Commission. Eating well in care homes for older people. 2009. Available online: <http://www.holyroodpr.co.uk/images/uploads/documents/18SEPeatingwell.pdf> (accessed on 1 July 2016).
49. Scottish Care Commission. Promoting Nutrition in Care Homes for Older People. 2009. Available online: [http://www.dignityincare.org.uk/\\_library/Resources/Dignity/CSIPComment/promotingnutritionincare\\_homes1.pdf](http://www.dignityincare.org.uk/_library/Resources/Dignity/CSIPComment/promotingnutritionincare_homes1.pdf) (accessed on 1 July 2016).
50. Healthcare Improvement Scotland. Food, fluid and nutritional care standards. Feedback Consultation Report. 2014. Available online: [http://www.healthcareimprovementscotland.org/our\\_work/patient\\_safety/improving\\_nutritional\\_care/nutritional\\_care\\_standards.aspx](http://www.healthcareimprovementscotland.org/our_work/patient_safety/improving_nutritional_care/nutritional_care_standards.aspx) (accessed on 1 July 2016).
51. Healthcare Improvement Scotland. Food Fluid and Nutritional Care Standards. 2014. Available online: [http://www.healthcareimprovementscotland.org/our\\_work/patient\\_safety/improving\\_nutritional\\_care/nutritional\\_care\\_standards.aspx](http://www.healthcareimprovementscotland.org/our_work/patient_safety/improving_nutritional_care/nutritional_care_standards.aspx) (accessed on 1 July 2016).
52. Healthcare Improvement Scotland. *Improving Nutrition . . . Improving Care*; Healthcare Improvement Scotland: Edinburgh, UK, 2012.
53. NHS Scotland. Nutrition for physically frail older people. Best practice statement. 2002. Available online: [http://www.healthcareimprovementscotland.org/previous\\_resources/best\\_practice\\_statement/nutrition\\_frail\\_older\\_people.aspx](http://www.healthcareimprovementscotland.org/previous_resources/best_practice_statement/nutrition_frail_older_people.aspx) (accessed on 1 July 2016).
54. Welsh Government. Nutrition in Community Settings. 2013. Available online: <http://gov.wales/docs/dhss/publications/130704nutritionen.pdf> (accessed on 1 July 2016).
55. Welsh Assembly Government. Fundamentals of Care—Guidance for Health and Social Care Staff. 2003. Available online: <http://www.wales.nhs.uk/documents/booklet-e.pdf> (accessed on 1 July 2016).
56. National Institute for Health and Care Excellence (NICE). Older people in care homes Local Government Briefing, LGB25). 2015. Available online: <https://www.nice.org.uk/advice/lgb25> (accessed on 1 July 2016).
57. England NHS. Guidance—Commissioning Excellent Nutrition and Hydration 2015–2018. 2015. Available online: <https://www.england.nhs.uk/wp-content/uploads/2015/10/nut-hyd-guid.pdf> (accessed on 1 July 2015).

58. Malnutrition Task Force. Addressing malnutrition: Commissioners Mini Guide. 2013. Available online: <http://www.malnutritiontaskforce.org.uk/> (accessed on 1 July 2016).
59. The Association of UK Dietitians. The Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services. BDA, 2012. Available online: <https://www.bda.uk.com/publications/professional/NutritionHydrationDigest.pdf> (accessed on 1 July 2016).
60. The Caroline Walker Trust. Eating Well for Older People, 2nd ed. 2004. Available online: <http://www.cwt.org.uk/wp-content/uploads/2014/07/OlderPeople.pdf> (accessed on 1 July 2016).
61. Crawley, H.; Hocking, E. (The Caroline Walker Trust). Eating well: Supporting older people and older people with dementia. 2011. Available online: <http://www.cwt.org.uk/pdfs/OlderPeople.pdf> (accessed on 1 July 2016).
62. Finch, S.; Doyle, W.; Lowe, C.; Bates, C.J.; Prentice, A.; Smithers, G.; Clarke, P.C. *National Diet and Nutrition Survey: People Aged 65 Years and Over*; Report of the Diet and Nutrition Survey; MCB UP Ltd.: London, UK, 1998; Volume 1.
63. Department of Health. *Report on Health and Social Subjects 41 Dietary Reference Values for Food Energy and Nutrients for the United Kingdom*; Report of the Panel on Dietary Reference Values of the Committee on Medical Aspects of Food Policy. ("COMA" Report); The Stationery Office: London, UK, 1991.
64. Food Standards Agency. Guidance on food served to older people in residential care. 2007. Available online: <http://www.food.gov.uk/multimedia/pdfs/olderresident.pdf> (accessed on 1 July 2016).
65. Food Standards Agency. FSA nutrient and food based guidelines for UK institutions 2007. 2007. Available online: <http://www.food.gov.uk/sites/default/files/multimedia/pdfs/nutrientinstitution.pdf> (accessed on 1 July 2016).
66. Food Standards Agency. Example Menus for Care Homes. Contract Reference: NUB 246. 2007. Available online: <http://www.food.gov.uk/sites/default/files/multimedia/pdfs/carehomenumens.pdf> (accessed on 1 July 2016).
67. Public Health England. Healthier and More Sustainable Catering: Nutrition principles. 2014. Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/347883/Nutrition\\_principles.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/347883/Nutrition_principles.pdf) (accessed on 1 July 2016).
68. Public Health England. Healthier and More Sustainable Catering A toolkit for serving food to older people in residential care. 2014. Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/347890/Older\\_people\\_toolkit.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/347890/Older_people_toolkit.pdf) (accessed on 1 July 2016).
69. Public Health England. Pub Health Eng Diet Ref Values\_DRV\_tool. Available online: <https://www.gov.uk/government/publications/healthier-and-more-sustainable-catering-a-toolkit-for-serving-food-to-adults> (accessed on 1 July 2016).
70. Scientific Advisory Committee on Nutrition. Salt and health. 2003. Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/338782/SACN\\_Salt\\_and\\_Health\\_report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338782/SACN_Salt_and_Health_report.pdf) (accessed on 1 July 2016).
71. Scientific Advisory Committee on Nutrition. Dietary Reference Values for Energy 2011. 2011. Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/339317/SACN\\_Dietary\\_Reference\\_Values\\_for\\_Energy.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/339317/SACN_Dietary_Reference_Values_for_Energy.pdf) (accessed on 1 July 2015).
72. Scientific Advisory Committee on Nutrition. *The Nutritional Wellbeing of the British Population: Scientific Advisory Committee on Nutrition*; The Stationary Office (TSO): London, UK, 2008.
73. Clinical Resource & Audit Group. The Nutrition of elderly people and nutritional aspects of their care in long-term settings. Final Audit Report. 2000. Available online: [http://admin.1fife.org.uk/weborgs/nhs/uploadfiles/publications/c64\\_CHSR\\_Nutrition\\_Residential\\_Care\\_Older\\_People.pdf](http://admin.1fife.org.uk/weborgs/nhs/uploadfiles/publications/c64_CHSR_Nutrition_Residential_Care_Older_People.pdf) (accessed on 1 July 2016).
74. National Institute of Excellence. Vitamin D: Increasing supplement use among at-risk groups, ph56. 2014. Available online: <https://www.nice.org.uk/guidance/ph56> (accessed on 1 July 2016).
75. Council of Europe. *Nutrition in Care Homes and Home Care—From Recommendations to Action*; Council of Europe: Strasbourg, France, 2009.
76. World Health Organization. Keep Fit for Life. Meeting the Nutritional Needs of Older Persons. 2002. Available online: [http://apps.who.int/iris/bitstream/10665/42051/1/WHO\\_TRS\\_880.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/42051/1/WHO_TRS_880.pdf?ua=1) (accessed on 1 July 2016).

77. Hill, T.R.; Mendonça, N.; Granic, A.; Siervo, M.; Jagger, C.; Seal, C.J.; Kerse, N.; Wham, C.; Adamson, A.J.; Mathers, J.C. What do we know about the nutritional status of the very old? Insights from three cohorts of advanced age from the UK and New Zealand. *Proc. Nutr. Soc.* **2016**, *75*, 420–430. [CrossRef] [PubMed]
78. Public Health England. *Healthier and More Sustainable Catering: A Toolkit for Serving Food to Adults*; Public Health England: London, UK, 2017. Available online: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/648743/healthier\\_and\\_more\\_sustainable\\_catering\\_adult\\_toolkit.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/648743/healthier_and_more_sustainable_catering_adult_toolkit.pdf) (accessed on 31 May 2017).
79. Social Care Institute for Excellence. Dignity in Care: Dignity Factors—Eating and Nutritional Care. 2012. Available online: [www.scie.org.uk/publications/guides/guide15/factors/nutrition/index.asp](http://www.scie.org.uk/publications/guides/guide15/factors/nutrition/index.asp) (accessed on 1 July 2016).
80. Bunn, D.; Abdelhamid, A.; Copley, M.; Cowap, V.; Dickinson, A.; Howe, A.; Killett, A.; Poland, F.; Potter, J.F.; Richardson, K.; et al. Effectiveness of interventions to indirectly support food and drink intake in people with dementia: systematic review. *BMC Geriatr.* **2016**, *16*. [CrossRef] [PubMed]
81. Abdelhamid, A.; Bunn, D.K.; Copley, M.; Cowap, V.; Dickinson, A.; Gray, L.; Howe, A.; Killett, A.; Lee, J.; Li, F.; et al. Effectiveness of interventions to directly support food and drink intake in people with dementia: Systematic review and meta-analysis. *BMC Geriatr.* **2016**, *16*. [CrossRef] [PubMed]
82. Burger, C.; Kiesswetter, E.; Gietl, A.; Pfannes, U.; Arens-Azevedo, U.; Sieber, C.C.; Volkert, D. Size matters! Differences in nutritional care between small, medium and large nursing homes in Germany. *J. Nutr. Heal. Aging* **2017**, *21*, 1–9. [CrossRef] [PubMed]
83. Bunn, D.; Jimoh, F.; Howard, S.; Hooper, L. Increasing Fluid Intake and Reducing Dehydration Risk in Older People Living in Long-Term Care: A Systematic Review. *J. Am. Med. Dir. Assoc.* **2015**, *16*, 101–113. [CrossRef] [PubMed]
84. Stow, R.; Ives, N.; Smith, C.; Rushton, A. A cluster randomised feasibility trial evaluating nutritional interventions in the treatment of malnutrition in care home adult residents. *Trials* **2015**, *16*, e433. [CrossRef] [PubMed]
85. British Association for Parenteral and Enteral Nutrition (BAPEN). The “MUST” Toolkit. Available online: <http://www.bapen.org.uk/screening-and-must/must/must-toolkit/the-must-itself> (accessed on 1 July 2016).
86. Guigoz, Y.; Vellas, B.; Garry, P. Mini nutritional assessment: A practical assessment tool for grading the nutritional status of elderly patients. *Facts Res. Gerontol.* **1994**, *14* (Suppl. 2), 15–59.
87. Malnutrition Task Force. *Malnutrition in Later Life: Prevention and Early Intervention*. 2013. Available online: [http://www.malnutritiontaskforce.org.uk/downloads/other\\_resources/Prevention\\_Early\\_Intervention\\_Of\\_Malnutrition\\_in\\_Later\\_Life\\_Care\\_Home.pdf](http://www.malnutritiontaskforce.org.uk/downloads/other_resources/Prevention_Early_Intervention_Of_Malnutrition_in_Later_Life_Care_Home.pdf) (accessed on 1 July 2016).
88. Merrell, J.; Philpin, S.; Warring, J.; Hobby, D.; Gregory, V. Addressing the nutritional needs of older people in residential care homes. *Health Soc. Care Community* **2012**, *20*, 208–215. [CrossRef] [PubMed]
89. Van Bokhorst-de van der Schueren, M.E.; Guaitoli, P.R.; Jansma, E.P.; de Vet, H.C.W. A Systematic Review of Malnutrition Screening Tools for the Nursing Home Setting. *J. Am. Med. Dir. Assoc.* **2014**, *15*, 171–184. [CrossRef] [PubMed]
90. Hooper, L.; Abdelhamid, A.; Attreed, N.J.; Campbell, W.W.; Channell, A.M.; Chasagne, P.; Culp, K.R.; Fletcher, S.J.; Fortes, M.B.; Fuller, N.; et al. Clinical symptoms, signs and tests for identification of impending and current water-loss dehydration in older people. *Cochrane Database Sytematic Rev.* **2015**, CD009647. [CrossRef] [PubMed]
91. Hooper, L.; Bunn, D.K.; Abdelhamid, A.; Gillings, R.; Jennings, A.; Maas, K.; Millar, S.; Twomlow, E.; Hunter, P.R.; Shepstone, L.; et al. Water-loss (intracellular) dehydration assessed using urinary tests: How well do they work? Diagnostic accuracy in older people. *Am. J. Clin. Nutr.* **2016**, *104*, 121–131. [CrossRef] [PubMed]
92. South Essex Partnership University NHS Foundation Trust. GULP Dehydration Risk Screening Tool. 2012. Available online: <http://www.sept.nhs.uk/wp-content/uploads/2014/07/GULP-Dehydration-risk-screening-tool.pdf> (accessed on 1 July 2016).
93. Centers for Medicare & Medicaid Services. Long-Term Care Facility Resident Assessment Instrument (RAI) 3.0 User’s Manual. 2015. Available online: <https://www.cms.gov/Medicare/Quality/MDS-30-RAI-Manual-V1113.pdf> (accessed on 16 November 2015).

94. Moynihan, P. *Implementing Healthier Menus in Residential Care Homes for Older People: Evaluation of Barriers, Facilitators and the Impact on Dietary Intake*; Newcastle University: Newcastle upon Tyne, UK, 2011.
95. Community Care. How to improve nutritional standards in care homes. Available online: <http://www.communitycare.co.uk/2011/09/22/how-to-improve-nutritional-standards-in-care-homes/> (accessed on 1 July 2016).
96. Department of Health, Nutrition Summit Stakeholder Group. Improving Nutritional Care: A Joint Action Plan from the Department of Health and Nutrition Summit Stakeholders. 2007. Available online: [http://webarchive.nationalarchives.gov.uk/20130103010000/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_079931](http://webarchive.nationalarchives.gov.uk/20130103010000/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_079931) (accessed on 1 July 2016).
97. Bamford, C.; Heaven, B.; May, C.; Moynihan, P. Implementing nutrition guidelines for older people in residential care homes: A qualitative study using normalization process theory. *Implement. Sci.* **2012**, *7*, 106. [[CrossRef](#)] [[PubMed](#)]
98. Meijers, J.M.M.; Halfens, R.J.G.; Mijnaerends, D.M.; Mostert, H.; Schols, J.M.G. A feedback system to improve the quality of nutritional care. *Nutrition* **2013**, *29*, 1037–1041. [[CrossRef](#)] [[PubMed](#)]
99. Low, L.F.; Fletcher, J.; Goodenough, B.; Jeon, Y.H.; Etherton-Beer, C.; Macandrew, M.; Beattie, E. A systematic review of interventions to change staff care practices in order to improve resident outcomes in nursing homes. *PLoS ONE* **2015**, *10*, e0140711. [[CrossRef](#)] [[PubMed](#)]
100. Parsons, E.L.; Baldwin, C.; Fitzpatrick, J.; Knight, A.; Manthorpe, J.; Thomas, J.E.; Weekes, E.; Whelan, K.; Wilson, R.; Murrells, T.; et al. Designing a national clinical audit of nutritional care in health and social care settings: Consideration and future directions. *Proc. Nutr. Soc.* **2013**, *72*, 251–260. [[CrossRef](#)] [[PubMed](#)]
101. Malnutrition Task Force. Raising Their Game: Staff Equipped to Tackle Malnutrition. 2014. Available online: [http://www.malnutritiontaskforce.org.uk/wp-content/uploads/2014/07/CH-Raising\\_their\\_game-staff\\_equipped\\_to\\_tackle\\_malnutrition\\_Islington.pdf](http://www.malnutritiontaskforce.org.uk/wp-content/uploads/2014/07/CH-Raising_their_game-staff_equipped_to_tackle_malnutrition_Islington.pdf) (accessed on 1 July 2016).
102. Elia, M.; Russell, C.A.; Stratton, R.J. Malnutrition in the UK: Policies to address the problem. *Proc. Nutr. Soc.* **2010**, *69*, 470–476. [[CrossRef](#)] [[PubMed](#)]
103. Association for Nutrition. Improving Capacity. Confidence and Competence in Nutrition across the Workforce. 2012. Available online: <http://www.associationfornutrition.org/Portals/0/Public/Projectpages/WorkforceCompetenceModelBooklet.pdf> (accessed on 1 July 2016).
104. Nursing & Midwifery Council (NMC). *The code: Professional Standards of Practice and Behaviour for Nurses and Midwives*; NMC: London, UK, 2015.
105. Jefferies, D.; Johnson, M.; Ravens, J. Nurturing and nourishing: The nurses' role in nutritional care. *J. Clin. Nurs.* **2011**, *20*, 317–330. [[CrossRef](#)] [[PubMed](#)]
106. Richards, D.; Hilli, A.; Pentecost, C.; Goodwin, V.; Frost, J. Fundamental nursing care: A systematic review of the evidence on the effect of nursing care interventions for nutrition, elimination, mobility and hygiene. *J. Clin. Nurs.* **2017**, *27*, 2179–2188. [[CrossRef](#)] [[PubMed](#)]
107. Bell, C.L.; Tamura, B.K.; Masaki, K.H.; Amella, E.J. Prevalence and measures of nutritional compromise among nursing home patients: Weight loss, low body mass index, malnutrition, and feeding dependency, a systematic review of the literature. *J. Am. Med. Dir. Assoc.* **2013**, *14*, 94–100. [[CrossRef](#)] [[PubMed](#)]
108. Marra, M.; Simmons, S.; Shotwell, M.; Hudson, A.; Hollingsworth, K.; Long, E.; Kuertz, B.; Silver, H.J. Elevated serum osmolality and total water deficit indicate impaired hydration status in residents of long-term care facilities regardless of low or high body mass index. *J. Acad. Nutr. Diet.* **2016**, *116*, 828–836. [[CrossRef](#)] [[PubMed](#)]
109. Beattie, E.; O'Reilly, M.T.; Strange, E.; Franklin, S.; Isenring, E.A. How much do residential aged care staff members know about the nutritional needs of residents? *Int. J. Older People Nurs.* **2013**, *9*, 54–64. [[CrossRef](#)] [[PubMed](#)]
110. Gaskill, D.; Black, L.J.; Alsenring, E.; Hassell, S.; Sanders, F.; Bauer, J. Malnutrition prevalence and nutrition issues in residential aged care facilities. *Australas J. Ageing* **2008**, *27*, 189–194. [[CrossRef](#)] [[PubMed](#)]

