The use of finger foods in care settings: An integrative review.

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Abstract

Background: Reduced food intake is prevalent in people in residential and hospital care settings. Little is known about the use of finger-foods, (foods eaten without cutlery), to increase feeding independence and food intake. The Social Care Institute for Excellence [(1)] recommends the use of finger foods to enable mealtime independence and to prevent loss of dignity and embarrassment when eating in front of others. The aim of this review is to identify and evaluate existing literature regarding the use and effectiveness of finger foods among adults in health and social care settings.

Methods: An integrative review methodology was used. A systematic search of electronic databases for published empirical research was undertaken in October 2018. Following screening of titles and abstracts, the full text of publications, which investigated outcomes associated with the provision of finger foods in adult care settings, were retrieved and assessed for inclusion. Two independent investigators conducted data extraction and quality assessment using Critical Appraisal Skills Programme checklists. Thematic analysis was used to summarise the findings.

Results: Six studies met the inclusion criteria. Four themes were identified: Finger food menu implementation; Importance of a team approach; Effect on nutrition and Influence on wellbeing. Study designs were poorly reported, with small sample sizes.

Conclusions: There is some evidence that provision of finger foods may positively affect patient outcomes in long-term care settings. There is a paucity of research evaluating the use of a finger food menu in acute care settings, including economic evaluation. Future high quality trials are required.

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Introduction

The aging population living with multiple co-morbitities, for example dysphagia, stroke and dementia is increasing [2]. Older people, particularly those living in residential care settings and those admitted to hospital, are at risk of reduced oral food intake and malnutrition [3]. Being under- nourished can cause loss of muscle mass and weakness, together with other physiological effects, including increased susceptibility to infection and delayed wound healing [2]. It can impact on mental well-being and lead to reduced quality of life as a result of increased dependence on others [4; 5]. Malnutrition is associated with increased costs to national health services as a result of extended and more frequent hospital stays and multiple General Practicitioner (GP) visits [6].

Reduced food intake in institutional care can be due to a number of complex factors, including the environment and the patient [7]. Environmentally, staff shortages reducing access to mealtime assistance, limited choice, unappealing food and mealtime interruptions can lead to a patient refusing food. Patient factors relating to eating difficulties can be associated with older age [8] as well as specific diseases such as dementia or stroke. People with dementia experience change in cognition, which can cause difficulties recognising food or cutlery, uncoordinated transfer of food from the plate to the mouth and distraction during the mealtime task [9] . People after stroke experience physical changes such as hemiparesis, limb apraxia or visual disturbances, which can cause difficulty manipulating cutlery or transferring food from the plate to the mouth [10; 11; 12], alongside embarrassment when eating in view of others [13].

The need to improve food intake in care settings has been acknowledged internationally, resulting in the publication of guidelines [14]. Guidelines include various proposed strategies to improve intake in older adults and particularly adults with dementia, however little is known about the effectiveness of these strategies to improve oral intake [15; 16; 17]. Evidence based recommendations for healthcare promote the provision of adequate support for people who are unable to eat independently [18] and offering food that is appropriate for the person, using a food first approach [14]. Despite this, relatives of older people frequently report inadequate amount of appropriate food and lack of support for people unable to feed themselves [19; 20]. The European Society for Clinical Nutrition and Metabolism (ESPEN) clinical recommendations [21] suggests using finger foods for older adults due to their limited cost and low risk, although the supporting evidence for this intervention is sparse.

For the purpose of this integrative review, finger foods are defined as foods presented in a form that are easily picked up with the hands and transferred to the mouth without the need for cutlery. Finger foods are considered easier to eat as they do not require manipulation with cutlery [22]. Typically, a finger food menu includes small sandwiches, pieces of quiche, cut up vegetables and cake slices or foods presented in bite sized portions, for people managing regular textured foods [23].

The Social Care Institute for Excellence [1] recommends the use of finger foods to enable mealtime independence and to prevent loss of dignity and embarrassment when eating in front of others [24]. For people after stroke or with cognitive impairment, finger foods have the potential to support participation and to increase independence at mealtimes [21; 25; 26]. Potential benefits of using finger foods are enhancement of nutritional intake and maintenance of weight [21; 27]. Additionally, finger foods are described as a more flexible approach to dining [28]. They can be used as a portable alternative to a plated meal and can be eaten "on the go" [22].

No previous high quality reviews have purposefully addressed the use of a finger food menu with older adults in care settings. NHS hospital trusts have implemented finger foods as part of a multimodal approach to nutritional intervention, without evidence showing that they singularly have a positive impact on patients [29]. Locating and reviewing the literature to identify which finger foods are most appropriate, which groups would benefit and the cost effectiveness of the intervention would inform future research and support clinical practice, guiding decisions regarding resource allocation. Therefore, the aim of this review was to locate and synthesise empirical published literature on the use of finger foods in adults in care settings.

Materials and methods

An integrative review methodology allows full understanding of a phenomenon [30]. It supports the objective critique and summary of selected quantitative and qualitative research studies, as opposed to a systematic review which addresses a distinctive clinical question and evaluated the effectiveness of an intervention [31]. This integrative review follows the five steps outlined by Souza *et al.* [32]: definition of the guiding question, a detailed and systematic search of the literature, data extraction, critical analysis of included publications and interpretation and synthesis of results.

Selection criteria

Eligible studies were selected through predefined inclusion criteria developed using the PICOST tool (Population, intervention, comparator, outcome, setting, type) [33]. Studies were included if, (i) the sample population included adults aged 18 years or above, (ii) the study involved use of finger foods, including an increase in finger foods offered, (iii) Any comparator was present, or none at all, (iv) Any subsequent outcomes were used, (v) the study was conducted in any institutional setting (e.g. long-term care centres, assisted living residence, residential homes, nursing homes, ~~hospital, medical~~acute hospital ward) (vi)~~and~~ was an example of empirical research. Review publications were not included, as the aim was to find empirical evidence.

Search strategy

Databases were searched using a wide range of pre-defined search terms developed with the assistance of a medical librarian and combined using Boolean operators (And/Or/Near) and MeSH (Medical Subject Heading) terms.~~.~~ This aimed to retrieve the widest scope of publications possible across different platforms. In addition, reference lists of selected publications were searched. In attempt to review the most robust publications, grey literature was not included in this search.

Databases searched to October 2018 included MEDLINE, EMBASE, CINAHL Plus® with Full Text (1937-2018), Psych INFO (1880-2018), Web of Science, Cochrane and Ahmed. No language restrictions were placed during the search. Search terms included: adult, patient, elderly, senior, geriatric, dementia, Alzheimer's, neurocognitive impairment, neurocognitive decline, finger food, buffet, utensil less, menu modification, mealtime intervention, dementia diet and eating with hands or fingers.

The inclusion criteria were used by two investigators (MH and NG) to screen title and then abstracts initially. Full texts of publications that appeared to be relevant were retrieved for further consideration by three investigators (MH, NG, SG).

Data extraction and quality

Selected publications were read multiple times to ensure familiarity. Data were extracted using a pre-prepared and piloted instrument based on the data extraction table by Souza *et al.* [32]. Studies were appraised using the appropriate Critical Appraisal Skills Programme (CASP) tool for the study design [34]. This tool supports systematic evaluation of published papers, considering validity, credibility, relevance and results of papers [34]. Results of the

CASP tool were discussed and agreed with multiple authors (SG and MH). None of the publications included met all the criteria assessed by the CASP appraisal form. However, it was not possible to assess whether the publications omitted these key components or whether it was simply not reported by the authors, despite attempts to contact authors.

Data synthesis

Primary data sources were coded, categorized and synthesised ~~Initial codes were derived inductively~~ using a systematic approach in accordance with guidelines for preparing an integrative review -[30]. Due to the small number of publications found, it was not necessary to subgroup papers. Initial codes were derived inductively from publications, using descriptive codes to simplfy and sort data into manageable data forms. Next, these descriptive codes were displayed in a visual matrix to observe patterns and themes. Codes were analysed iteratively by clustering descriptive codes into overarching themes and comparing and contrasting codes. These overarching themes were discussed and agreed with the other authors. All relevant studies identified were included in the thematic analysis regardless of quality.

Results

Descriptive findings

Six publications were included in the final selection. Figure 1 summarises the selection process using the preferred reporting items for systematic review and meta-analysis (PRISMA) flow diagram, including reasons for exclusion.

Table 1 provides a summary of the publication characteristics. Publications reported studies undertaken in long-term care settings in the United States of America [35; 36], the United Kingdom [24; 27; 37] and France [38]. None described the use of a finger foods in acute care settings. Study designs varied including, observational studies [36; 37; 38], a pilot study [35], a case-study [24] and a reterospective study [27], but did not include randomised controlled trials. Sample sizes were generally small ranging from six participants [24] to 114 participants [38] using a range of outcome measures.

All participants included had a diagnosis of dementia or other psychiatric conditions. Participants presented with a range of physical and cognitive eating difficulties, which were attributed to their cognitive impairment. These included difficulties using utensils [24; 27; 35; 36;

[37], for example poor hand or finger control, tremor and limited concentration or high level of distractibility [36].

Quality assessment

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Assessment using the CASP case control critical appraisal tool indicated that two publications reporting quantitative findings were of low quality [27; 35]. Soltesz and Dayton [27] used a control group, which differed in key characteristics to the intervention group. The control group comprised of 11 residents consuming a modified pureed diet, and an intervention group of 43 residents with no swallowing difficulties eating a normal diet. In addition, confidence intervals were not provided for key outcomes, giving no indication of variability [27].

In the study by Jean [35], participants acted as their own control groups, in a pre-post study design. No confounding factors were reported, making it difficult to attribute maintenance or increase in weight to the finger food menu intervention [35]. Additionally, Jean [35] presented results using only descriptive statistics, which makes it difficult to generalise the results found and places at risk of external validity. Based on the CASP case control checklist, Pouyet *et al.* [38] study satisfied most criteria of the three studies, however being the only study of its kind, reporting on attractiveness of pureed finger foods, limits the external validity.

The studies employing a qualitative methodology were assessed as low quality [24; 36; 37]. Ford [37] did not report sufficient detail of the study methodology or findings. Barratt *et al.* [24]; Nangeroni and Pierce [36] did not adequately consider the researcher and participant relationship, ethical considerations and included unclear statements of findings and credibility. Limited information regarding the recruitment strategy or reasons for population recruited, makes it difficult to establish target sample for all studies.

Meta synthesis

Four main themes were identified inductively through thematic analysis: (i) Finger food menu implementation; (ii) Importance of a team approach; (iii) Effect on nutrition (vi) Influence on wellbeing.

Finger food menu implementation

Included publications defined finger foods as food that did not require cutlery [27; 37; 38], or could be eaten easily with the hands [24; 36; 38]. Generally, finger foods offered were considered

appropriate for residents eating normal or regular textured foods [23] and with no evidence of oropharyngeal dysphagia. However, Barratt *et al.* [24]; Nangeroni and Pierce [36]; Pouyet *et al.* [38] used softer foods and pureed forms of finger food [38] to support older people with dysphagia or difficulties chewing. Pouyet *et al.* [38] showed the pureed finger foods were generally well accepted by adults with Alzheimer's disease, with reports that shape was not an influence on food attractiveness [38]. The authors, however, did consider shape as important to support manipulation with the hands.

Details of the specific implementation of a finger foods varied. In two studies, finger foods were offered alongside the normal menu to increase variety of food offered [27; 36]. Soltesz and Dayton [27] added extra finger foods to the existing menu, however the overall number of finger foods increased minimally, leading to difficulties comparing the control and intervention group. This contrasts with other publications, where a finger food menu was developed to replace the standard menu offered over lunch and dinner times [24; 35], or offered as smaller, more frequent meals [37]. None of the publications reported difficulties with intervention fidelity and suggested no additional staff or additional food items were required [27]. Success with using finger foods was supported using simple and easy foods for staff to make [35].

The cost of implementing a finger food menu was considered by Barratt *et al.* [24]; Soltesz and Dayton [27]; Jean [35]. However, none reported a robust economic evaluation, resulting in conflicting results. Soltesz and Dayton [27] suggested the implementation of a finger food menu cost no more than the provision of standard foods and Jean [35] suggested that high energy and protein supplements were discontinued in 25% of participants receiving a finger food menu giving a cost saving. Conversley, in a later study Barratt *et al.* [24] described an increase on cost per person to implement the finger food menu.

Importance of a team approach

Collaboration between clinical and catering teams to support the provision of a finger food menu was a common theme arising in three papers [24; 27; 35]. Despite catering services often perceived as non-clinical services, their involvement in ensuring food was presented in a way that patients could access allowed observable changes in clinical outcomes [24]. In publications showing increased costs for providing finger foods, agreements between budget holders - often clinical managers, commissioning services and catering teams - is required to justify the need for this intervention [24]. Staff training in understanding the need and rationale

of finger foods was one approach influencing maintenance and success of implementing the intervention across departments [35; 37].

Barratt *et al.* [24]; Soltesz and Dayton [27] described collating feedback from the clinical and catering team to support the development and implementation of the finger food, however little detail was given about the changes made and how this data was collected.

Effect on nutrition

Nutritional outcomes were measured in only three studies by assessing food intake via food chart reviews, plate waste observations and changes in weight [35; 37]. Increased nutritional intake and weight maintenance during the finger food menu intervention period was demonstrated in all three studies [27; 35; 37]. Full description of the menu offered with nutritional values was not provided, therefore, although there was an increase in weight of food consumed, the nutritional value of the foods eaten could not be evaluated. Ford [37] suggested that changes in nutritional status could affect medical status, however an explanation as to how medical status will change was not included.

Influence on wellbeing

The fourth theme describes the improvement in wellbeing during the implementation of finger foods which was reported in all publications. Wellbeing was measured formally by Barratt *et al.* [24], using Dementia Care Mapping. Barratt *et al.* [24] demonstrated an increase in mean wellbeing scores of residents offered a finger food menu which was maintained six weeks after the introduction. However, the small sample size used by Barratt *et al.* [24] and pre-post study design limits control of confounding variables in the complex long-term care setting and makes it difficult to attribute these findings wholly to the food offered.

Increased independence with eating for people chosing to eat finger foods was described in three studies [24; 35; 36], despite variation in outcome measures used. Barratt *et al.* [24] observed an increase in the mean percentage of observations recorded as ‘independent feeding’ over lunchtime meals. This contrasts to Jean [35] who created a scale which demonstrated 3 of 12 residents became fully independent eating their meal when offered finger foods, despite during the baseline measure being fully dependent with feeding. Nangeroni and Pierce [36] did not provide details of how independence was measured. Within these studies, blinding or reflexive views of the researcher were not described, which increases the risk of bias and makes it difficult to distinguish whether this would lead to a reduced requirement for support by staff and visitors [24].

Discussion

The aim of this integrative review was to locate and synthesise empirical published literature on the use of finger foods for adults in care settings, to inform future research and support clinical practice and policy decisions.

The lack of high quality trials identified suggests the use of a finger foods with adults is yet to be robustly evaluated. There is some evidence to demonstrate improvement in relevant outcomes, such as food intake, but this has been shown in studies that lacked a control making it difficult to ascertain the cause of the effect shown. The variation in interventions provided across these publications provides additional challenges when comparing outcomes. However, this does highlight the need for a pragmatic approach to future research, considering all stakeholders involved. A study by Cluskey and Kim [39] undertaken in the USA suggested that finger foods are judged by healthcare professionals, working in long term care settings, as being beneficial for residents, cheap and easily implemented in institutions. The limited adverse effects and expense to provide these types of foods means that their use continues to remain in clinical guidelines on nutrition and hydration in geriatrics [21]

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Despite guidelines suggesting that finger foods could be used to support people with other conditions, such as stroke [25], all studies focussed on people with cognitive impairment. Ford [37] acknowledged the potential of using a finger food menu to support older adults with a wide range of eating difficulties, including mental health or physical difficulties. An increase in food intake in people with cognitive impairment has been shown in other studies with different presentations of food. In a cross over, randomised controlled trial undertaken in a nursing home, Young *et al.* [40] demonstrated increased energy intake when high carbohydrate foods were offered in place of a usual meal which was not fully described. Although this study did not aim to evaluate the use of finger foods, it was noted many of the high carbohydrate foods could be defined as finger foods, such as bread with jam, hard boiled egg, muffins and slices of cheese. In addition, greater severity of cognitive deficit and atypical motor behaviour was associated with greater intervention success [40]. Young et al acknowledged that in this trial, people with nutritionally controlled diabetes were excluded from the trial. This highlights that the suitability for a finger food diet would need to be assessed individually as the nutritional content and presentation may not meet some people's dietary needs.

None of the research studies in this integrative review conducted a well described economic evaluation, to assess the benefits of individual interventions and to evaluate the best use of available resources alongside highest patient satisfaction [41]. It is important to reflect the true direct and indirect costs of healthcare interventions, particularly when implementing a change in practice [42].

Interestingly, none of the studies in this review included or explored the views of staff, carers or the recipient of the finger foods, despite suggestions that they may have positive benefits on quality of life and wellbeing. A conference abstract, with no associated published paper, was identified which used a survey methodology to explore residents, caregivers and relatives experiences of providing a finger food menu in a nursing home [43]. It appears further in depth research investigating the experience of residents, caregivers and relatives could give further information on the acceptability of this menu [43] to support effective and efficient service delivery [44].

The findings of this review are in agreement with broader reviews on nutritional interventions. Abdelhamid *et al.* [45]; Malerba *et al.* [46] suggest positive outcomes for the use of finger foods, but further need for high quality investigation and well powered randomised control trials. The review by Abdelhamid *et al.* [45] focussed on interventions to support food intake in people with dementia and included two studies which classified the use of finger foods as a direct dietary intervention [27; 35]. Adressing the use of multiple dietary interventions meant the review did not focus specifically on the use of finger foods and limited the range of publications found. However, two studies [27; 35] were also included in this integrative review and interestingly no studies published later than 2016 were found. The descriptive review by Malerba *et al.* [46], in France, commented on the use of finger foods for people with dementia in community and home settings. Malerba *et al.* [46] suggests beneficial outcomes relating to the use of finger foods, for example reduced workload of carers, increased independence and individualised care for people with dementia. Despite useful results, the review did not show a systematic approach to searching the literature or quality critique of publications included.

Strengths and limitations to integrative review

The range of study designs included in this review and the synthesis of quantitative and qualitative data adds a level of complexity to the review and therefore can introduce bias [30]. To ensure the quality of this review, rigorous systematic approaches were used throughout.

To reduce bias, two reviewers (MH and NG) screened 347 abstracts for inclusion and discrepancies were dealt with through discussion.The full texts were chosen following discussion with the other authors of this paper.

Conclusions and future recommendations

The findings suggest that the use of finger foods may increase nutritional intake and enhance independence and wellbeing for adults with cognitive impairment in long term care settings. However, the low quality of the studies included do not provide robust evidence for the effectiveness for using these types of foods in care settings. Therefore results should be interpreted with caution.

The review highlights key considerations to implementing a finger food menu within care settings, and a particular need to focus on the use of this menu in hospital settings. Further research is required to suggest whether this intervention is cost effective, feasible and acceptable to be used in acute care settings for older adults.

Transparency Declaration: The lead author affirms that this manuscript is an honest, accurate, and transparent account of the study being reported. The reporting of this work is compliant with PRISMA3 guidelines. The lead author affirms that no important aspects of the study have been omitted and that any discrepancies from the study as planned have been explained.

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