ORIGINAL RESEARCH

Factors influencing hospital foodservice staff's capacity to deliver a nutrition intervention

Running title: Evaluation of a foodservice intervention

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Abstract

Aim: Implementation of an intervention can result in a discrepancy between what was planned and what is delivered, affecting outcomes for recipients. The aim was to explore from the perspective of hospital foodservice staff, their experiences delivering a nutrition intervention and the barriers and enablers to its implementation.

Methods: A process evaluation of a pilot study was undertaken using qualitative description. A purposive sample (n=15) of hospital foodservice supervisors and foodservice assistants responsible for delivering a higher energy menu to hospital patients participated in focus groups and semi-structured interviews. Theoretical frameworks of behaviour underpinned the method. Content analysis elicited factors (sub-themes) influencing foodservice staff's capability, opportunity and motivation to provide the nutrition intervention. Thematic analysis (by two independent researchers) further explored factors (themes) related to the process of the intervention's implementation.

Results: Five key themes (and 15 sub-themes) explained factors affecting implementation of the nutrition intervention. Aspects of the foodservice environment and patients' resistance were barriers to implementation and perceived sustainability. Teamwork, problem solving, leadership and job satisfaction were enablers. There was opportunity to optimise training and feedback. Characteristics of foodservice staff including their: knowledge; beliefs and perceptions of diet, health and their job role had the potential to influence their behaviours and decision making.

Conclusions: A number of interacting factors influenced foodservice staff's delivery of a higher energy menu as planned. Addressing the challenges of time, foodservice structure, patients' resistance, gaps in knowledge and misconceptions among foodservice staff may enhance similar nutrition interventions in the future.

Key words: behavioural research, food services, malnutrition, qualitative research, workforce.

Introduction

Efforts to address inadequate dietary intake among hospital patients are paramount to improve health outcomes. A number of oral nutrition-based interventions have been described in the literature¹ yet little is known about the experience of providing these interventions ‘on the ground’ or factors influencing success. Generally, they rely on volunteers or healthcare staff such as foodservice or catering staff, nurses or allied health assistants. Their effectiveness may, in part, be dependent on the extent to which they are implemented by these individuals. Failure of policies, programs and clinical practices to achieve desired outcomes for patients has been observed across healthcare disciplines and is not restricted to nutrition interventions.

Frameworks of behaviour such as the Capability, Opportunity, Motivation Behaviour (COM-B) System and the Theoretical Domains Framework (TDF) help to understand and interpret the process of transforming intentions into effects.²⁻⁴ They illustrate that behaviour change is complex and influenced by a number of personal (internal) and organisational (external) factors. Importantly, the healthcare environment introduces specific social, cultural, economic and physical considerations that can challenge intervention implementation.^{5,6} Exploring this phenomenon is essential to ensure that healthcare interventions translate into improved patient outcomes.

A foodservice-based nutrition intervention was developed and evaluated in a pilot study (reported elsewhere).⁷ The aim of this present process evaluation was to investigate the experiences of those responsible for providing the nutrition intervention to patients during that pilot study. Process evaluation is recommended to complement summative outcome data,

to unpack and understand findings of traditional quantitative designs.⁸ Specifically, the objectives were to explore from the perspectives of foodservice staff, in the context of theoretical frameworks of behaviour/implementation: [1] the strengths and limitations of the intervention, [2] the barriers and enablers of its implementation and [3] the way in which foodservice staff engaged with and responded to the intervention. Subsequently, this would enable development of recommendations regarding the key considerations (inherent to the individuals, setting, process or intervention) to inform future implementation efforts of similar nutrition interventions in the hospital setting. This may improve the efficiency and sustainability of service delivery in healthcare.

Methods

A parallel controlled pilot study was undertaken to test a nutrition intervention aimed at improving the nutritional status of subacute patients by increasing food intake. The intervention consisted of a new menu higher in energy and protein, achieved by substituting items at breakfast, lunch and mid-meals (morning tea, afternoon tea and supper) with more energy dense items (e.g. omelettes, pikelets, hot chocolate, muffins). It required foodservice staff to change their usual job tasks, specifically: [1] prepare and plate non-standard food and drink items and [2] use a visual menu and encourage patients' selection at mid-meals. Further details of the intervention, study design and the primary outcomes are reported elsewhere.⁷

A process evaluation of the pilot study using qualitative description⁹ was undertaken with hospital foodservice staff, focusing on potential and actual influences on the progress and effectiveness of implementation efforts.⁸ The need for this evaluation was recognised following reflections throughout the pilot study by JC, who led the project and was present on the wards collecting data. A discrepancy between the planned and actual provision of the intervention by foodservice staff, and between the anticipated and actual uptake of the higher

energy menu by patients was observed. Understanding the experience of those involved in intervention delivery was proposed to explain, in part, the findings of the pilot study and multiple realities of implementing change to foodservices. The Institution Review Board at Eastern Health approved this study protocol and all participants provided written informed consent.

Target participants were a purposive sample of foodservice staff employed at the public hospital in Victoria, Australia where the pilot study was undertaken. Eligible staff ($n = \sim 38$) were casual, part time or full time foodservice supervisors (FSSs) (i.e. staff who complete administrative duties and supervise the department) and foodservice assistants (FSAs) (i.e. staff responsible for cleaning kitchen areas, serving and delivering meals) who had been involved with the intervention from a supervisory role or on the ward at the coalface. They were identified as having the most extensive and powerful experiences with the intervention and therefore best positioned to provide qualitative description of the phenomena (i.e. the intervention). Other foodservice staff (i.e. chefs, cooks and menu monitors) in addition to nurses, dietitians and other health professionals were not targeted for recruitment as they did not play a key role in the delivery of the nutrition intervention.

Participants were recruited using advertising flyers displayed in the hospital kitchen and personalised copies provided to potential participants. To increase response, a department store gift card (\$20AU) was provided to staff who participated in focus groups or interviews.

Data were collected in June 2014 once the pilot study had been completed but before primary outcome data were known. Foodservice assistants ($n=12$, $\sim 35\%$ eligible participants) participated in three focus groups ($n=4$ in each). Focus groups were utilised to obtain perspectives from a range of different viewpoints and encourage discourse of opinion. This method provided opportunities for interaction and dynamics to stimulate discussion about attitudes, experiences and beliefs.¹⁰ Data were collected separately from FSSs and FSAs to

avoid the effect of potential hierarchical influences on dialogue. It was not possible to schedule a focus group with all FSSs due to conflicting work schedules, therefore FSSs (n=3, 100% eligible participants) completed an individual semi-structured interview.

The inquiry and subsequent analyses were informed by frameworks of behaviour; the COM-B System and TDF (Figure 1). The COM-B System proposes that capability (physical or psychological), opportunity (physical or social) and motivation (emotional or reflective) interact to influence behavior.⁴ The TDF describes 14 domains that have been mapped to the COM-B System: capability (knowledge; skills; memory, attention and decision processes; behavioural regulation), motivation (social/professional role and identity; beliefs about capabilities; optimism; beliefs about consequences; intentions; goals; optimism, reinforcement; emotion) and opportunity (social influences; environmental context and resources).^{2,3} An interview guide was used as the basis for all data collection with questions and prompts specifically developed to elicit responses relating to the COM-B System (Table 1). Interviews and focus groups ran for approximately 20-30 minutes and 40 minutes, respectively. They were conducted at the hospital following the work shift for participants' convenience. Data collection was facilitated by a trained researcher CEH, who contributed to the conceptualisation of the intervention and the pilot, but was not known to staff to promote honesty and frankness from participants.

Discussions were audio recorded and transcribed verbatim by a research assistant. Recordings and transcripts were cross checked for accuracy and to foster data immersion. Analysis was undertaken by two researchers JC and CP to allow for cross checking and triangulation. JC's interpretation was influenced by her investment and previous immersion in the pilot study as the lead researcher. CP was not involved in the pilot and therefore provided objectivity to analyses. Data from FSS and FSA were analysed together and congruence or divergence of views between these groups, or of individuals, were considered.

Content and thematic analyses (Figure 2) were used to construct a qualitative description of the nutrition intervention from the point of view of foodservice staff. Directed content analysis¹¹ was completed independently by JC using the COM-B System and the TDF as a framework to code data. Inductive thematic analysis¹² was then undertaken whereby codes were identified as emergent from the data then grouped together to form sub-themes independent of theory and frameworks. A second qualitative researcher CP independently coded the transcripts and thematically analysed the data to verify sub-themes. There was little disagreement between the independent researchers, with consistent conclusions despite individual representations of the data. The sub-themes were grouped together to form themes through consensus between the two authors and using a third theoretical framework; the Consolidated Framework for Implementation Research (CFIR).¹³ Coding matrixes and concept maps were used in this process to visualise relationships between codes, sub-themes and themes. Direct quotes from transcripts provided evidence and explanation of themes and deviant cases.

Results

In general, participants (n=15) were middle aged, English speaking and regular employees (Table 2). All participants were female; there were no male foodservice staff employed during the study period.

Five themes were identified that provided a rich qualitative description of the critical events, responses and implications of the nutrition intervention from the perspective of the foodservice staff (Figure 2). Generally, there was no difference in the views of FSSs and FSAs.

Theme 1 – Environmental factors: The foodservice system was portrayed to be linear and rigid, with the department operating on a strict time schedule and all staff having

allocated jobs to complete. The participants reported this structured approach ensured optimal operation of the foodservice system however the downside was the inflexibility in response to change. Variations to 'business as usual' sent the system into turmoil and were felt to negatively impact patients across the whole hospital who were reliant on the service.

"Everything is timing with us in the kitchen. We're on a time; there is always a job after a job." [Participant 12, FSA].

The participants reported additional tasks associated with the nutrition intervention took extra time to complete. The department was already operating at full capacity and it was reported there was no time or labour workforce available to manage this. There was a strong feeling described of being pressured for time, as more had to fit into the already busy schedule. Consequently, the intervention made staff run late and fall behind which had a snowball effect that lasted the whole day. Participants described feeling guilty when they were late as they believed they were letting down their colleagues.

"They liked doing it but they were put under a lot of pressure because we were already running on a tight schedule in the kitchen so they were under the pump a lot, the girls. So some of them got a bit stressed if they were running a bit late."
[Participant 3, FSS]

To overcome these challenges, processes were changed, for example extending the work hours of one staff at breakfast, reordering the timing of meal plating and instigating greater teamwork. However, these changes took time and there was a lag between identifying and rectifying problems. Additionally, participants explained that more was still required to cope better with the nutrition intervention.

Theme 2 – Characteristics of the nutrition intervention: The nutrition intervention was felt to be unsustainable to adopt across the whole hospital as it was ill-fitting in the current

foodservice structure and labour capacity. It was reported that significant restructuring of processes and expanding the workforce would be required to ensure smooth operation of the foodservice if the nutrition intervention became usual practice. The associated costs were acknowledged as a barrier to its wider roll out. The perceived higher amount of plate waste occurring during the pilot study was also felt to be cost prohibitive.

“If we were offering that type of menu to all patients I just don’t know how the kitchen would cope time-wise with that. I don’t think it would be viable.”

[Participant 2, FSS]

Participants recounted their role was to promote the higher energy menu items to patients. To achieve this, they described employing a range of techniques including encouraging, prompting, upselling, tailoring suggestions to food preferences and suggesting alternatives. Informal competition among foodservice staff to see who could ‘sell’ the most items from the higher energy menu acted as an incentive for staff to do their best.

Theme 3 – Responses of the patients: Despite their attempts, most staff explained that patients were resistant to engaging with them and declined food and drink items offered. This was reported to occur particularly among longer stay patients because they tired of the menu repetition. Patients’ lack of receptiveness was perceived to be associated with the large amount of food they received.

“I know with the elderly, you put (down) this whopping tray of food and they’ve just gone “Oh God no, take it away.” It was just so overpowering, so much food in one hit.” [Participant 7, FSA]

Participants reported patients disliked wasting food and this contributed to their resistance. Food waste was described to occur due to the provision of too much food, and possibly food that did not match patients’ preferences. There was variability in perceptions of

whether the higher energy menu met patients' food preferences and which items were popular. Together, patients' resistance and food waste appeared to be a source of negative feedback for foodservice staff and may have generated a perception that the nutrition intervention, or aspects of it, were futile.

Theme 4 – Implementation process factors: Participants were eager to know whether the nutrition intervention had “*worked*”. Interestingly, some participants perceived the nutrition intervention had been effective despite results being unknown at that time. This perception was based on their observations of patients during the pilot study.

“...If you were trying to put weight on patients, visually to me it worked. Because visually, I saw that they had put on weight.” [Participant 2, FSS]

Participants reported they received face to face training, instruction and demonstration by the researcher and FSSs, but it was unclear the extent to which they gained new knowledge and skills. They perceived the content of training and the support from the researcher to be adequate. However, the casual and shift-work nature of their employment was reported as a barrier to access training. FSAs reported showing and telling their colleagues who did not receive formal training

“It’s very awkward because there are so many girls working in the kitchen and if (the trainer) only comes down, say, twice in that week she’s still going to miss people. So unless she’s there every shift (at) the beginning of every shift to make sure everyone knows, it’s very hard.” [Participant 5, FSA]

Managing the additional tasks associated with the nutrition intervention when time and workforce capacity were limited was expressed as the biggest barrier. The researchers and FSSs worked together to find solutions, with effective communication advantageous for this. Teamwork and camaraderie were reported as essential to ensure all tasks were completed to

minimise the disruption to patients. There was variability in FSAs' perceived support; some felt well supported by their colleagues and supervisors and they took the time needed to do their job properly. Conversely, it was also reported that not all FSAs were willing to help out, not limited to the intervention, and changes in work culture were required for effective and forthcoming teamwork.

"We all helped out in different areas to compensate for (the nutrition intervention) because it was a big job doing all those extra things that we had to do up there."

[Participant 15, FSA]

"It's hard though because not everyone is so forthcoming (with assistance) and that is very hard because you can be very intimidated out there, but that's another issue and it's a big issue actually." *[Participant 12, FSA]*

The FSSs championed the nutrition intervention among the department. They explained they were highly motivated to carry out the pilot to the best of their ability because it was their responsibility to do so. They described leading by example by providing assistance on the floor when required. FSAs reported supervisors were influential in culturing teamwork to overcome the time burden.

Theme 5 – Characteristics of the foodservice staff: Participants described they were able to be more involved with patients during the pilot. This was perceived to have a range of benefits for patients; opportunity to interact with someone, wider range of food choice and overcoming communication barriers. Involvement with patients was also reported to improve work satisfaction among some participants, but not all. Communicating more with patients and having the challenge of implementing the intervention were rewarding and enabled them to do their job the way they would like it to be done. On the other hand, feelings of guilt, time

pressure, lack of collegial support and perceptions of high food waste reported by some participants meant they were disapproving of the intervention.

“The other part as well is you were using your brain a little bit more. You weren’t just walking in and checking the name, you were actually communicating with them and you had to make sure they got the right things. So I found it great.” [Participant 13, FSA]

“Some of them didn’t enjoy it at all because it was more work. They felt (that) we’ve got enough work and we don’t need this added (job).” [Participant 1, FSS]

The data revealed gaps in participants’ knowledge of the intervention procedure and general nutrition, with no noticeable difference between FSSs and FSAs. Despite this, participants reported confidence in their skills and that their knowledge was adequate. Additional education was not perceived to be warranted. Some participants indicated no need for them to be more knowledgeable about nutrition as this was the dietitians’ role. Participants stated they knew the purpose of the intervention - it was related to nutrition, weight status and *“building patients up”*. However, their responses lacked detail and their language indicated uncertainty suggesting a gap between their perceived and actual knowledge. Additionally, it appeared there was limited understanding of how a higher energy menu functioned to achieve the aim of the intervention.

Participants referred to nutrition care practices they believed were aspects of the intervention, that were not in fact part of the protocol. For example, there was no limit to the number of items patients could order. There also appeared to be confusion between usual dietetic care practices and the ‘rules’ of the intervention.

There was a strong negative perception towards the amount and type of food in the higher energy menu and its inappropriateness. The high frequency, volume and portion size of food items led to the perception that patients were provided with too much food. It was felt there was more plate waste than under usual care conditions. This belief also appeared to be shaped by participants' observations of what was 'normal' food intake for patients and their perceptions of the nutritional needs of the sick and elderly. For example, some participants reported that since patients were sedentary they didn't need to eat much food.

Participants reported the higher energy menu was unhealthy and unsuitable for patients. This was based on their health beliefs that were consistent with general public health nutrition messages (e.g. reduce saturated fat and sugar intake). There was a lack of recognition by participants that sick and elderly patients have different needs and priorities to the overall population. Sugar and the "wrong kind of fat" (i.e. saturated fat) were perceived not to be nutritious and consequently, there was concern and confusion about providing the higher energy menu (e.g. cakes, muffins, chocolate biscuits) to patients, particularly those with diabetes.

"We understood it to be for nutritional purposes and that's why I don't understand why I was offering you (the patient) four lots of sugary things." [Participant 4, FSA]

Participants described their role as gate keepers of food and providers of nutrition care, playing an important part in patients' recovery. FSSs and some FSAs were more connected to this professional identity than others. Supervisors reported feeling frustrated when staff did not appreciate this role, and a responsibility to change these attitudes. They explained that their department was obliged to participate in nutrition research since it can benefit patients. There was a firm trust that the researchers knew what they were doing and belief that the

intervention must have a purpose. Because the intervention was for research it was held in high regard.

“I must say, I didn’t feel pressured when I was up there because you knew you had to do it. It was part of a research thing so you can’t rush around like a mad fool, you’ve got to actually speak to them and do each one.” [Participant 13, FSA]

Participants expressed their role was to respect patients’ wishes in regard to food. However, staff had been asked to encourage patients’ selection of food from the higher energy menu. Consolidating these expectations meant finding the balance between forcing and encouraging intake.

“If they didn’t want it, they didn’t want it. But you would try and encourage them as much as you could and say “Have you tried this? Really, it’s the best.” [Participant 1, FSS]

Participants acknowledged nutritional care was a team effort, with foodservice staff, nurses and dietitians needing to work together. They described nurses’ role as continuing the provision of assistance and encouragement they initiated when they delivered the meal trays. Participants viewed dietitians as more senior and reported they were obliged to do as the they (including the researcher) instructed.

Situations where participants intentionally deviated from the intervention protocol were described. Some FSAs who believed strongly the higher energy menu was inappropriate refused to provide food items to particular patients. This behaviour was not supported by other FSAs.

"I would never offer them (diabetic patients) hot chocolate; any diabetic, never ever. I don't want to give them (hot chocolate) because that's sugar, that's very high."
[Participant 9, FSA]

"I think she (the researcher) set it out quite well in we sort of knew what we had to do so long as we really followed the instructions. And really, at the end of the day that's what our role is. It's not to provide nutritional education to patients."
[Participant 10, FSA]

Some participants described providing patients with smaller serves of higher energy menu items although the portion sizes were set. They also provided toast, tea and coffee although these had been removed from the higher energy menu. This was perceived to be acceptable because it was better for patients to have something to eat rather than nothing. Participants also described they would provide higher energy menu items to patients in the control group because they didn't feel it was fair they missed out on the 'better' food, especially if it was tray waste.

Discussion

This process evaluation using qualitative description provides insight into factors impacting foodservice staff's capability, opportunity and motivation to provide a foodservice-based nutrition intervention to subacute patients. It found that the foodservice structure, time pressures and patients' resistance were barriers to successful implementation and sustainability of the intervention. Teamwork, leadership of FSSs, collaborative problem solving between researchers and FSSs and improved work satisfaction were enablers. There was opportunity to optimise the provision of timely feedback and access to training. Characteristics of the foodservice staff, including their knowledge, beliefs and perceptions of

diet, health and their job role, had the potential to influence their behaviours and decision making. Together these factors may have influenced the primary outcomes of the nutrition intervention among patients.

Previous findings relating to eating environments¹⁴⁻¹⁷ and quality improvement efforts¹⁸⁻²⁰ indicate congruence with these data suggesting a number of common challenges to nutritional care are experienced in healthcare. The frameworks of behaviour and implementation (e.g. COM-B system, TDF, CRIF) in addition to the Diffusion of Innovation theory may provide insight. Overall, they are consistent in indicating there are multiple, interacting factors that influence behaviour and change at an individual or organisational level. Consequently, a comprehensive plan is required to improve the likelihood of success of an intervention. Table 3 lists suggestions based on key learnings from this study contextualised using the frameworks that may inform the use of this nutrition intervention or similar strategies in research or clinical practice in the future.

‘System readiness’, including dedicated and sufficient time and resources is essential for change.²¹ The setting (inner and outer) are two domains of the CRIF.¹³ The opportunity to provide the nutrition intervention as planned was limited by environmental systems and availability of resources and time. The rigidity of the foodservice structure appeared to hamper this intervention. Healthcare staff experience time pressures and competing priorities at meal times that impede the provision of nutritional care.¹⁴⁻¹⁶

The third domain of the CRIF is individuals involved in the intervention.¹³ Foodservice staff’s capability to deliver the intervention was largely influenced by their knowledge, rather than skills or psychological processes. Their knowledge was below what was anticipated, given the education and training they had received. Poor nutrition knowledge among non-dietetic healthcare staff and the function of this as a barrier to implementation have been found in other studies.^{16,19,20} Participants’ misconceptions about diet, dietary needs, disease

(e.g. malnutrition, diabetes), lack of knowledge about the links between these and disinterest in further education appeared to influence their views and appreciation of the nutrition intervention. Another consequence may have been their intentional deviation from the nutrition intervention. Lambert *et al.*¹⁹ also describe similarities among nursing staff who exercised their own agency and altered prescriptions for oral nutritional supplements (ONS).

An innovation is more likely to be successful if it demonstrates relative advantage (benefit over the status quo), observability (visible results), compatibility (consistent with norms, values, needs), complexity (simple to use) and trialability (able to be experimented with on a small scale).²¹ The intervention itself is also a domain of the CFIR.¹³ Findings suggest the nutrition intervention may have lacked relative advantage over the current menu and compatibility with patients' appetite, food and size preferences and perspectives on food waste. These barriers to intake have been reported elsewhere.²²⁻²⁴ Consequently, foodservice staff felt patients were resistance toward the higher energy menu. Lambert *et al.*¹⁹ also report nurses' challenges in encouraging patients to consume ONS. Elderly clients' lack of receptiveness of snacks has also been attributed to their misconceptions about nutritional value of these items, their risk of malnutrition and its implications.¹⁸

Successful implementation processes require individuals (champions) who will promote the intervention and provide social influence to support its adoption. The Diffusion of Innovation theory is based on the premise that opinion leaders' adoption of change will spark the spread of change among the peer network.²¹ This is recognised in the process domain of the CRIF.¹³ In this pilot, the FSSs were such individuals - problem solvers, teachers, owners and leaders. Permitting and empowering FSSs to participate in intervention development and implementation process maximised their position as 'insiders'. Importantly, they fostered a culture of valuing foodservice staffs' role in patient care and belief in the intervention. Previous studies of nutrition care practices also recognise the pivotal role of

champions, suggesting they are a key facilitator of change.^{20,25,26} Rogers²⁷ provides a succinct description of the diffusion process and strategies to utilise peers in this process.

There are strengths and limitations of this evaluation to acknowledge. Data gathered from different types of participants together with independent analysis in duplication enhanced trustworthiness of the data.²⁸ The two-fold analysis approach balanced the use of frameworks to provide grounding (codes, themes) and ‘free’ analysis (sub themes) to let the data tell the story. Repetition of sub-themes and themes suggested data saturation was reached. The objectivity created through the semi-structured inquiry mode may have limited the depth of exploration of some aspects. The perspectives and experiences of foodservice staff who did not participate are not known, but may be different to participants’. This study captured experiences of foodservice staff; the providers of the nutrition intervention. Directly engaging with recipients (patients) to explore their receptiveness toward nutrition interventions would also support understanding of what did and did not work and why. Transferability of these data may be possible where there are sufficient parallels between foodservice staff and the setting.²⁸ The researchers’ roles in this evaluation and the pilot study have been made transparent in order to acknowledge the potential effects (both positive and negative) of their position on these findings.

This process evaluation provided answers to critical questions about a pilot study⁷ that would not have been revealed through the traditional quantitative study design. Research methods particularly suited to exploring questions of ‘what’, ‘how’ and ‘why’ have been proposed in the literature.⁵ Mixed methods studies and participatory action research are among those suggested. While these methods were not formally used here, elements were adopted (i.e. the use of qualitative data to supplement quantitative findings; engaging foodservice staff in the pilot study process) and proved extremely valuable. The use of frameworks (e.g. COM-B System, TDF, CFIR) was effective to bring structure, direction and

objectivity to the conception, design and findings of the evaluation. Consulting and utilising key frameworks and theories is encouraged when developing, evaluating and/or implementing change in foodservice systems to reflect the evidence on what ‘works’, how and why.

This data affords insight into the complexities of piloting nutrition clinical trials in the healthcare setting. Future nutrition interventions within foodservice systems should consider the influence of the ‘human element’, the implementation process, resources and environmental aspects on the ability to deliver an intervention as planned. There is an opportunity to address internal and external barriers to optimise the capability, opportunity and motivation of healthcare staff providing nutrition interventions in healthcare.

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Conflict of interest

JP is an employee of the health service but was on secondment to the university at the time of the study. JC was also employed as a casual dietitian at the health service during the time of the study.

Authorship

JC, JP, CEH and CP conceptualised this research and have approved the final manuscript. KH conducted the focus groups and interviews. JC transcribed and analysed data and wrote the manuscript. CP analysed data. JP, CEH and CP reviewed the manuscript.

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References

- 1 Cheung G, Pizzola L, Keller H. Dietary, food service, and mealtime interventions to promote food intake in acute care adult patients. *J Nutr Gerontol Geriatr* 2013; **32**: 175-212.
- 2 Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implement Sci* 2012; **7**: 37.
- 3 Michie S, Johnston M, Abraham C, Lawton R, Parker D, Walker A. Making psychological theory useful for implementing evidence based practice: a consensus approach. *Qual Saf Health Care* 2005; **14**: 26-33.
- 4 Michie S, van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implement Sci* 2011; **6**: 42.
- 5 Peters DH, Adam T, Alonge O, Agyepong IA, Tran N. Implementation research: what it is and how to do it. *BMJ* 2013; **347**: f6573.
- 6 McCormack B, Kitson A, Harvey G, Rycroft-Malone J, Titchen A, Seers K. Getting evidence into practice: the meaning of 'context'. *J Adv Nurs* 2002; **38**: 94-104.
- 7 Collins J, Huggins C, Porter J, Truby H. A foodservice approach to enhance energy intake of elderly subacute patients: A pilot study to assess impact on patient outcomes and cost. *Age Ageing* 2016; doi: 10.1093/ageing/afw238.
- 8 Stetler CB, Legro MW, Wallace CM *et al*. The role of formative evaluation in implementation research and the QUERI experience. *J Gen Intern Med* 2006; **21**: S1-S8.
- 9 Sandelowski M. Focus on research methods-whatever happened to qualitative description? *Res Nurs Health* 2000; **23**: 334-340.
- 10 Davidson P, Halcomb E, Gholizadeh L. Focus groups in health research. In: Liamputtong P, editor. *Research Methods in Health: Foundations for Evidence-Based Practice South Melbourne*. Victoria: Oxford University Press, 2010.
- 11 Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res* 2005; **15**: 1277-1288.
- 12 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; **3**: 77-101.

- 13 Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci* 2009; **4**: 50.
- 14 Ullrich S, McCutcheon H, Parker B. Reclaiming time for nursing practice in nutritional care: outcomes of implementing Protected Mealtimes in a residential aged care setting. *J Clin Nurs* 2011; **20**: 1339-1348.
- 15 Dickinson A, Welch C, Ager L. No longer hungry in hospital: improving the hospital mealtime experience for older people through action research. *J Clin Nurs* 2008; **17**: 1492-1502.
- 16 Ross LJ, Mudge AM, Young AM, Banks M. Everyone's problem but nobody's job: staff perceptions and explanations for poor nutritional intake in older medical patients. *Nutr Diet* 2011; **68**: 41-46.
- 17 Keller HH, Vesnaver E, Davidson B *et al*. Providing quality nutrition care in acute care hospitals: perspectives of nutrition care personnel. *J Hum Nutr Diet* 2014; **27**: 192-202.
- 18 Charlton KE, Walton K, Moon L *et al*. "It could probably help someone else but not me": A feasibility study of a snack programme offered to meals on wheels clients. *J Nutr Health Aging* 2013; **17**: 364-369.
19. Lambert K, Potter J, Lonergan M, Tapsell L, Charlton KE. Qualitative study of patients and health-care professionals' views on the efficacy of the nutrition as medication oral nutrition supplement program. *Nutr Diet* 2015; doi: 10.1111/1747-0080.12152.
- 20 Ijkema R, Langelaan M, van de Steeg L, Wagner C. What impedes and what facilitates a quality improvement project for older hospitalized patients? *Int J Qual Health Care* 2014; **26**: 41-48.
- 21 Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q* 2004; **82**: 581-629.
- 22 Walton K, Williams P, Tapsell L *et al*. Observations of mealtimes in hospital aged care rehabilitation wards. *Appetite* 2013; **67**: 16-21
- 23 Hartwell HJ, Shepherd PA, Edwards JS. Effects of a hospital ward eating environment on patients' mealtime experience: A pilot study. *Nutr Diet* 2013; **70**: 332-338.

- 24 Moynihan P, Macdonald A, Teal G, Methven L, Heaven B, Bamford C. Extending an approach to hospital malnutrition to community care. *Br J Community Nurs* 2012; **17**: 614-621.
- 25 Rasmussen HH, Kondrup J, Staun M *et al.* A method for implementation of nutritional therapy in hospitals. *Clin Nutr* 2006; **25**: 515-523.
- 26 McKinlay AW. Improving Nutritional Care in Hospitals Project: (INCHP) establishing a network of nutrition champions. *Proc Nutr Soc* 2010; **69**: E534.
- 27 Rogers EM. Diffusion of preventative innovations. *Addictive Behaviors* 2002; **27**: 989-993.
- 28 Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information* 2004; **22**: 63-75.

Figure legends

Figure 1 Overview of data collection and analysis using theoretical frameworks of behaviour

Figure 2 Five themes (wedges) and 15 sub-themes (outer circles) describing the key aspects of the nutrition intervention from the perspective of the foodservice staff

Table 1 Semi-structured interview and focus group schedule and inquiry logic

Questions	
What did you think of the new food items and the new way of delivering mid meals to the patients participating in the study?	
Were there any other things that made it easier or difficult to provide the new food items and deliver the mid meals in the new way?	
Prompts	Element of COM-B System²⁻⁴ that informed inquiry
Tell me about the training, support and instructions that were provided	Capability Opportunity Motivation
What was the purpose of providing these new foods and delivering the mid meals in a new way?	Capability
What were the patients' responses to the new menu items and the new way of delivering the mid meals?	Opportunity Motivation
How did it make you/the food service staff feel about your/their job and the work you/they do in the hospital?	Motivation
How did it affect the usual work tasks that had to be done by the food service department?	Opportunity
What did you think of the nutritional value of the new foods that were offered?*	Capability Motivation

* Prompt added during data collection process after concept was revealed through focus group and interview discussion

Table 2 Demographic characteristics of foodservice staff participating in focus groups and interviews (n=15)

Demographic characteristic		Response, n (%)
Age (years)	18-30	1 (7)
	30-40	0
	40-50	6 (40)
	50-60	8 (53)
Duration of employment in general hospital foodservice (years)	< 5	7 (47)
	5-10	2 (13)
	10-20	4 (27)
	> 20	2 (13)
Duration of employment at the hospital (years)	< 2	3 (20)
	2-5	4 (27)
	5-10	3 (20)
	10-20	3 (20)
	>20	2 (13)
Language spoken at home	English	15 (93)
	Other	1 (7)
Number of shifts worked during an average week	2	2 (13)
	3-4	5 (33)
	5	5 (33)
	6-7	3 (20)

Table 3 Key findings and suggestions for implementation of nutrition interventions that aim to address inadequate intake among patients in healthcare settings

Recommendations	Relevance to frameworks		
	TDF	COM-B	CFIR
1. Identify champions that will support the intervention among the social network.	Soc Inf	Soc Opp	Pro
2. Empower intervention providers to participate, contribute to, and evaluate the process.	B Cap	Ref Mot	Pro
3. Ensure regular communication between researchers and intervention providers.	-	-	Pro In Set
4. Emphasise the role of the intervention providers in nutrition care and how their role fits into the multi-disciplinary team approach to nutrition care.	Soc Role	Ref Mot Aut Mot	Ind
5. Educate intervention providers on basic nutrition, diet and disease relationships; differentiate between the nutrition requirements of the general population and the study sample.	Kno B Con	Psych Cap Ref Mot	Ind
6. Ensure the education and training schedule is flexible to ensure all intervention providers have access.	Ski	Phys Cap	Pro
7. Provide intervention providers with timely feedback on progress and outcomes.	Rf	Aut Mot	Int
8. Ensure sufficient staff and time are allocated for the provision of the nutrition intervention.	Env	Phys Opp	In Set
9. Re-organise environmental structures, systems and processes so they support the nutrition intervention.	Env	Phys Opp	In Set

TDF, Theoretical Domains Framework.^{2,3} Domains: Soc Inf, social influence; B Cap, beliefs about capabilities; Soc Role, social/professional role and identity; Kno, knowledge; B Con, beliefs about consequences; Ski, skills; Rf, reinforcement; Env, environmental context and resources. Additional domains not represented – optimism; intentions; goals; memory, attention and decision processes; emotion; behavioural regulation.

COM-B, Capability, Opportunity, Motivation Behaviour System.⁴ Domains: Soc Opp, social opportunity; Phys Opp, physical opportunity; Ref Mot, reflective motivation; Aut Mot, automatic motivation; Psych Cap, psychological capability; Phys Cap, physical capability.

CFIR, Consolidated Framework for Implementation Research.¹³ Domains: Pro, process; In Set, inner setting; Ind, individuals; Int, intervention. Additional domain not represented - outer setting

Figure 1 (new).jpg

Figure 2.jpg

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