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IDENTIFYING PRIORITY AREAS FOR IMPROVING FOOD AND FLUID INTAKE IN LONG-TERM CARE: MULTI-PROFESSIONAL VIEWS

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Abstract: *Objective:* Poor food intake, which is preventable and treatable, is the primary cause of malnutrition among residents living in long-term care (LTC). The purpose of this study was to identify the perspective of a multi-professional group of LTC stakeholders on areas to target for intervention research in LTC to improve food and fluid intake of residents. *Design:* Descriptive survey design. Setting: long term care. *Participants:* A cross-provincial group of dietitians, administrators, food service managers, practice leads, policy makers, nurses, and physicians attended four symposiums and three presentations on a nutrition study. Attendees self-selected to participate. *Measurements:* Participants were asked to rank from 1 (first priority) to 10 (last priority) a list of potential determinants of resident food and fluid intake, which were previously prioritized by the International-Dining in Nursing home Experts (I-DINE) Consortium. *Results:* In total, 132 participants completed the ranking. Top ranked areas for intervention research were: adequate time to eat/availability of staff to assist; sensory properties of food; and choice and variety in the dining experience. Conversely, the I-DINE consortium highly ranked social interaction of residents; self-feeding ability; and dining environment. *Conclusion:* Perceptions of the priorities for targeting interventions to improve food and fluid intake may be divergent between expert groups and clinicians. Understanding priorities of local stakeholders is essential to developing effective interventions for the LTC context. The results of this study will inform future intervention development for improving food intake in LTC residents.

Key words: Determinants, long-term care; food intake, multi-professionals, perceptions.

Introduction

Poor food and fluid intake, and the subsequent malnutrition associated with low intake, has serious effects on the health and wellbeing of frail older adults in long-term care (LTC). It is estimated that 20-40% of residents living in LTC are malnourished and an additional 50% are at risk of malnutrition (1). Malnutrition can lead to increased risk of infection, poor wound healing, increased hospitalization, functional and cognitive decline, and death (2-5). In addition to the health consequences of poor food and fluid intake, there are quality of life considerations. Care staff and older adults perceive food to be one of the most important determinants of quality of life (6, 7).

To address issues of poor food and fluid intake, and malnutrition in LTC, an international group of experts and stakeholders convened in Ontario, Canada in May, 2014, to identify and prioritize determinants of food and fluid intake for residents in LTC that required further research to promote the nutritional health and quality of life of residents (8). This group, the International-Dining in Nursing home Experts (I-DINE) consortium, developed and ranked 20 determinants, and proposed a research agenda for LTC (8).

Integrated knowledge translation is the process of involving stakeholders in each step of the research process, including priority setting, generation of research questions, study design, implementation, analysis and dissemination (9). It is generally understood that involving stakeholders at each stage of research will increase the relevance and utility of the research outputs for knowledge users (9). Further, involving stakeholders in the production of research knowledge is a promising mechanism to improve health outcomes (10, 11).

Understanding the perceived importance of modifiable determinants of food and flood intake by multi-professional stakeholders can help researchers understand the intervention priorities and preferences of those working closely with older adults in LTC. This may lead to more effective development of interventions. The purpose of this study was to understand the prioritized determinants of food and fluid intake of a multi-professional group of cross-provincial clinicians and policy makers for development and testing of interventions.

Methods

Symposia were held in 4 Canadian provinces (Alberta, Manitoba, Ontario, New Brunswick) between March and June, 2016. Attendees included local and provincial policy makers, LTC administrators and directors of care, dietitians, registered nurses, food service management and other key LTC personnel. Potential participants were invited to attend the symposia through emailed invitations via the local network of each provincial research lead. The purpose of these symposia was

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to disseminate preliminary descriptive findings from the cross-provincial Making the Most of Mealtimes (M3) prevalence study (12) and to generate ideas for clinical interventions based on these data. During the same time period, dissemination of preliminary descriptive findings also occurred in the context of three conference presentations with nurse, physician and dietitian groups. Two presentations occurred in Alberta and one in Ontario. All participants self-selected attendance.

After receiving an overview of the M3 study results, attendees at the symposiums and presentations were provided an oral description of the top 10 areas to target for research to improve food and fluid intake in LTC identified by the I-DINE Consortium in their research agenda (8). Attendees were then asked to individually priority rank from 1 (first priority) to 10 (last priority) these potential determinants of food and flood intake. No identifiers for participants were recorded. The survey data were entered into Microsoft Excel 2007. The scores for each determinant were calculated by summing the ranked order for each item. Lower scores indicate a higher rank. Potential participants were informed of the voluntary and anonymous nature of completing the questionnaire prior to the ranking exercise and dissented to participate by not completing the ranking questionnaire. This study received ethics approval from the University of Alberta, University of Manitoba, University of Waterloo, and Université de Moncton research ethics boards.

Table 1
Rank Order of Priorities for Improving Food Intake in Long-Term Care

Ranking	Determinant	Total Scores*
1	Adequate time to eat/availability of staff to provide assistance	401
2	Sensory properties of food (eg., taste)	593
3	Choice and variety in dining experience	603
4	Staff attitude, knowledge, skills	612
5	Oral health	729
6	Nutrient density	841
7	Self-feeding ability	842
8	Dining environment (noise, ambiance, distractions, light, room temperature)	850
9	Hospitality and mealtime logistics	862
10	Social interactions of residents	927

*Low score equals a higher priority (e.g. 1 = first priority)

Results

The ranking exercise was completed by 132 participants. Table 1 depicts the priority order for developing interventions to improve food and fluid intake of LTC residents. Top ranked areas were time to eat/availability of staff to assist residents; sensory properties of food; and choice and variety in the dining experience. Social interaction among residents was deemed the least important area for research and intervention.

Discussion

Participants in this study ranked adequate time to eat/quality eating assistance, sensory properties of food, and choice and variety in the dining experience as more important areas for future research or intervention to improve food intake. In contrast, the I-DINE consortium (8) ranked adequate time to eat/quality eating assistance fifth, sensory properties of food sixth and choice and variety in dining eighth. Conversely, the three most important areas for research identified by the I-DINE consortium ranked in the bottom four for stakeholders. The top ranked item identified by the I-DINE group (social interactions of residents) ranked least important by this study's stakeholder group.

The divergence in rankings between decision makers and research experts is the most striking finding of this study. Those working in the field may have focused their ratings on areas they see as most problematic from a day-to-day perspective or what they perceive to be within their scope to improve. Social interaction between residents and the dining environment may not have been considered a relevant focus for clinicians' attention; although researchers have reported the potential of the social and physical environment to support the eating ability of older adults (13). In contrast, I-DINE experts likely knew the existing research better and during their think tank emphasized new areas for research where interventions had yet to be developed. Interventions for top ranked priorities of decision makers have been developed (14), yet implementation is lacking (e.g. eating assistance training).

The results of this study suggest that expert groups and stakeholders differ in their perceived priorities for targeted food intake intervention research in LTC. The I-DINE consortium developed their research agenda based on their expertise and knowledge of current research and practice issues, and could be biased by their areas of interest. As noted by the consortium, confirmation of their rankings was needed with research demonstrating association between determinants and food intake. It is proposed that expert rankings, stakeholder rankings and such research findings should be triangulated to identify priorities for intervention development and evaluation to improve food intake in LTC.

Our study has limitations. First, the context within which these ranking data were gathered was different from the I-DINE consortium context. By sharing the descriptive results of the Making the Most of Mealtimes (M3) study just prior to the ranking exercise, participants may have altered their opinions on the most important areas for improvement. Second, participants self-selected to attend the events and the opinions of those not represented are unknown. Nevertheless, by gathering the opinions and perspectives of those most

interested in improving resident mealtimes, this study is giving voice to participants who are the most likely to be informed and thoughtful in their ranking of determinants. Finally, we did not collect information on sex, discipline and years of practice to compare to rankings. We wanted decision makers to feel that their rankings were anonymous and elected to not collect this information.

Conclusion

Understanding the priorities of local stakeholders is an important first step to develop meaningful mealtime interventions that improve food and fluid intake for older adults in the LTC context. The results of this study will be used with the I-DINE research agenda and the M3 prevalence results to inform intervention development.

Conflicts of interest: None of the authors has a conflict of interest.

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Ethical Standards: This study received clearance from ethics boards at the University of Waterloo, University of Alberta, University of Manitoba, Université de Moncton and complies with the current laws of Canada.

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