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Multi-Level Factors Associated with Relationship-Centred and Task-Focused Mealtime Practices in Long-Term Care: A Secondary Data Analysis of the Making the Most of Mealtimes Study

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Résumé

Dans les établissements de soins de longue durée, les moments de repas peuvent renforcer les relations entre le personnel et les résidents grâce à des pratiques de soins axés sur les relations (SAR). Or, les repas exigent souvent des soins axés sur les tâches (SAT). Cette étude transversale explore les divers facteurs contextuels qui contribuent aux pratiques de SAR et de SAT au cours des repas. Des données secondaires provenant de résidents de 32 établissements de soins de longue durée canadiens ont été analysées (n = 634; âge moyen : 86.7 ans ± 7.8; 31.1 % d'hommes). Les données comprenaient des évaluations de dossiers de santé, des données d'outils normalisés d'observation des moments de repas et des résultats de questionnaires validés. L'étude a relevé une moyenne supérieure de pratiques de SAR (9.6 ± 1.4) par repas par rapport aux SAT (5.6 ± 2.1). L'analyse de régression multiniveaux a expliqué une proportion importante de la variation des scores SAR et SAT aux niveaux des résidents (coefficient de corrélation intraclasse $[CCI]_{SAR}$ = 0.736; CCI_{SAT} = 0.482), des salles à manger (CCI_{SAR} = 0.210; CCI_{SAT} = 0.162), et des établissements (CCI_{SAR} = 0.054; CCI_{SAT} = 0.356). La taille et le statut public ou privé des établissements a modifié les associations entre la dépendance fonctionnelle et les pratiques. En agissant sur les facteurs multiniveaux, on peut renforcer les pratiques de SAR et réduire les pratiques de SAT.

Abstract

Mealtimes in long-term care (LTC) can reinforce relationships between staff and residents through relationship-centred care (RCC) practices; however, meals are often task-focused (TF). This cross-sectional study explores multi-level contextual factors that contribute to RCC and TF mealtime practices. Secondary data from residents in 32 Canadian LTC homes were analyzed (n = 634; mean age 86.7 ± 7.8; 31.1% male). Data included resident health record review, standardized mealtime observation tools, and valid questionnaires. A higher average number of RCC (9.6 ± 1.4) than TF (5.6 ± 2.1) practices per meal were observed. Multi-level regression revealed that a significant proportion of variation in the RCC and TF scores was explained at the resident- (intraclass correlation coefficient $[ICC]_{RCC}$ = 0.736; ICC_{TF} = 0.482), dining room- (ICC_{RCC} = 0.210; ICC_{TF} = 0.162), and home- (ICC_{RCC} = 0.054; ICC_{TF} = 0.356) levels. For-profit status and home size modified the associations between functional dependency and practices. Addressing multi-level factors can reinforce RCC practices and reduce TF practices.

Introduction

Mealtimes in long-term care (LTC) homes are complex processes. In addition to the many necessary activities that occur during a meal (Gibbs-Ward & Keller, 2005), eating with others can reinforce identity, solidarity, and community, but can also elicit feelings of exclusion, objectification, and rejection (Henkusens, Keller, Dupuis, & Schindel Martin, 2014; Hung & Chaudhury, 2011; Palese et al., 2018). Although the social aspects of mealtimes may be as

important to a resident as the nutritional value of the meal itself (Bennett, Ward, Scarinci, & Waite, 2014), the embedded biomedical model that underpins Canada's LTC system places emphasis on the functionality of meals by prioritizing objective measures, such as resident food intake and efficient mealtime processes (Banerjee & Armstrong, 2015; Kontos, Miller, & Mitchell, 2010). As a result, the social importance of meals in these formal care settings is often discounted and fails to provide the comfort of meals past (Douglas, 1975). As communal mealtimes can occur at least three times a day, every day, for residents, staff (e.g., care aides, personal support workers), and families, there is the potential for these task-focused care practices to impair quality of life for those involved and may also impact food intake and nutritional status. Specifically, for those residents who rely on physical assistance for eating, the undervaluing of social connections during meals may compound feelings of social isolation and loneliness (Karlsson, Ekman, & Fagerberg, 2009; Moyle, Fetherstonhaugh, Greben, & Beattie, 2015; Palese et al., 2018). Understanding the multi-level factors associated with staff mealtime practices within these care settings is a first step towards identifying interventions to support more socially focused meals.

Relational Mealtimes

The complexities of mealtimes in LTC can be examined using a relational lens: relational theory postulates that individuals are shaped by their social, political, economic, and cultural circumstances, rejecting the notion that individuals function independently from the systems and structures around them (Sherwin & Winsby, 2011). Relational theory considers the interactions and interdependence between residents who eat in the dining room and family members who may join them, as well as direct care and managerial staff who support mealtime processes. In LTC, social models of care reinforce a sense of belonging for residents (Nolan, Davies, Brown, Keady, & Nolan, 2004), but are challenged by the hierarchical and systematized approaches taken towards mealtimes. For example, resident autonomy may be challenged in almost every aspect of the meal process, from what time meals are served, to whom one sits with in the dining room. When residents participate in mealtime processes by making choices, their relational autonomy and engagement are supported (Abbott et al., 2013; Sherwin & Winsby, 2011). For care staff, "the conditions of work are the conditions of care" (Baines & Armstrong, 2018, p.1), meaning that a precondition for meaningful resident care is a working environment that fosters supportive conditions for those providing the care. Thus, we recognize that micro-interactions between residents and staff are influenced by relational factors including policies, funding structures, and the marketization of the Canadian LTC sector (Baines & Armstrong, 2018; Harrington et al., 2017; Keller, Syed, Dakkak, Wu, & Volkert, 2022).

Mealtime Interactions: Relationship-Centred versus Task-Focused Practices

The mealtime practices that reinforce social connection between those who live and those who work in LTC are understood in this study as relationship-centred care (RCC). RCC is a social model of care that embraces the importance of reciprocity in caring relationships and understands that this reciprocity extends to the wider community including family and friends outside of the LTC home (McCormack, 2018; Nolan et al., 2004; Tresolini & the Pew-Fetzer Task Force, 1994). An example of an RCC practice between staff and residents at mealtimes is when residents are offered a clothing protector. The simple act of *offering* a resident assistance with putting on a clothing protector provides an occasion to acknowledge interdependent dynamics in which staff recognize a resident's autonomy (i.e., a choice to accept or decline assistance). In contrast, task-focused (TF) practices are those that prioritize essential mealtime processes, minimize opportunities for social connection, and are performed in such a way that undermine the relational autonomy of both residents and staff (Savundranayagam, 2014). Using the same example, staff placing a clothing protector on a resident without first asking permission (or at least foreknowledge for residents who are not verbally communicative) is a situation in which staff substitute their personal judgement for what they believe is best for that resident (Sherwin & Winsby, 2011). The staff member's personal autonomy may also be undermined in this situation if this behaviour was reinforced and mentored by more senior staff and leadership as a means of promoting meal efficiency.

Staff's relational autonomy should also be considered to understand TF scenarios more fully. Staff may be operating within a LTC context (e.g., regulations, policies, processes) that undermines their abilities to enact RCC practices. Previous research has demonstrated the link between care staff's experiences of job satisfaction and organizational context, specifically leadership, social capital, culture, and the organization's responsiveness to internal and external pressures (Chamberlain, Hoben, Squires, & Estabrooks, 2016; Squires et al., 2015). Situations in which staff feel a lack of support from leadership and peers (Kuo, Yin, & Li, 2008; McGilton et al., 2020) or disempowered because of a lack of decision-making capacity (Gaudenz, De Geest, Schwendimann, & Zúñiga, 2019; Parsons, Simmons, Penn, & Furlough, 2003) can result in lower quality of care, and can ultimately result in staff leaving the LTC workforce (Bowers, Esmond, & Jacobson, 2003). Personal support workers (e.g., care aides) provide anywhere between 75 and 90 per cent of direct care to residents (Bowers et al., 2003; Estabrooks et al., 2015a; Estabrooks, Squires, Carleton, Cummings, & Norton, 2015b), making the dynamics of this dyad one of the most important factors contributing to quality of life for residents (Kehyayan, Hirdes, Tyas, & Stolee, 2015). The current study seeks to understand the contribution of multi-level factors (i.e., resident, dining room, and home levels) to RCC and TF practices in the dining room in Canadian LTC homes. The following provides a basis for the resident-, dining room-, and home-level factors used in this analysis.

Resident-Level Mealtime Factors

Upwards of 70 per cent of residents living with dementia will experience challenges associated with neurological and visuomotor changes that can result in eating challenges and reduced mealtime socialization (Abdelhamid et al., 2016; Keller et al., 2017b; Namasivayam-MacDonald et al., 2018; Slaughter, Eliasziw, Morgan, & Drummond, 2011). Dysphagia risk (difficulty/discomfort while swallowing) was found to affect almost 60 per cent of residents in Canadian LTC homes, resulting in almost half of residents requiring modified-texture diets and thickened fluids to prevent choking, and in some cases, verbal and physical eating assistance (Keller et al., 2017b). Poor oral health is common among those living with dementia and can also make eating difficult and/or painful (Chalmers & Pearson, 2005). Yoon et al. (2018) found that oral health status likely impacted the eating ability of half of Canadian LTC residents. Residents living with dementia may experience challenges with verbal communication, making it

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difficult to express their mealtime needs and preferences, as well as their emotional and relational needs (Cadieux, Garcia, & Patrick, 2013; Liu, Perkhounkova, Williams, Batchelor, & Hein, 2020; Milte et al., 2017; Stubbs et al., 2016). Mealtime interactions between residents and care staff are typically discussed in the literature in relation to improving food intake and supporting residents with eating challenges, yet there is little reference to the quality of social mealtime care and other factors that may play a role in these interactions.

Dining Room-Level Factors

The meal time is made up of a series of processes (e.g., preparing to eat, serving foods and fluids in multiple courses) and interactions (e.g., asking permission, sharing a laugh, giving a light comforting touch) between key players: care staff, residents, and family members (Gibbs-Ward & Keller, 2005). Research that has examined mealtime processes in LTC homes describes them as hectic and TF (Hung & Chaudhury, 2011; Sloane et al., 1998; Watkins et al., 2017). In some provinces, such as Ontario, regulations stipulate for safety reasons that staff may support up to two residents at a time with eating assistance (Ministry of Health and Long-Term Care, 2007). As a result, family members or volunteers often compensate for low staffing levels by providing eating assistance, which also creates a space for meaningfully connection with their relative (Baumbusch & Phinney, 2014; Durkin, Shotwell, & Simmons, 2014; Wu et al., 2020). Instances in which little or no external supports are available may result in staff using negative approaches such as rushing residents through their meals (Liu, Tripp-Reimer, Williams, & Shaw, 2020; Lowndes, Daly, & Armstrong, 2017). The physical layout and operating systems of a LTC home play important functions in shaping mealtime experiences (Chaudhury, Cooke, Cowie, & Razaghi, 2018; Slaughter et al., 2020). Structural renovations to LTC homes (for example, to dining rooms) can provide an opportunity to create comfortable dining spaces for residents and to encourage teamwork among staff (Chaudhury, Hung, Rust, & Wu, 2017). Dining rooms in specialized dementia care spaces are often designed to maximize residents' autonomy, physical functioning, and well-being (Chaudhury, Hung, & Badger, 2013), in addition to providing staff who have received specialized dementia care training (e.g., Stein-Parbury et al., 2012). In contrast, general home areas typically put less emphasis on these factors and may or may not equip staff with training in specialized dementia care. Although the dining environment is an important aspect of creating enjoyable mealtime experiences, research has shown that improvements made to dining spaces can be less effective if a resident's higher order needs, such as feelings of belonging and self-esteem, are not being met (Chaudhury et al., 2017; Hung, Chaudhury, & Rust, 2015; Willemse et al., 2015).

LTC Home System Factors

Canadian research has demonstrated that municipal and non-profit homes typically operate with a higher staff-to-resident ratio than for-profit homes that may reduce staffing numbers to lower operating costs. This is a significant and consistent distinction between the different types of Canadian home ownership models (Berta, Laporte, & Valdmanis, 2005; Berta, Laporte, Zarnett, Valdmanis, & Anderson, 2006; Harrington et al., 2017; Hsu, Berta, Coyte, & Laporte, 2016; McGregor et al., 2005). A consequence of being understaffed, regardless of profit structure, is high staff turnover and staff burnout that can include emotional exhaustion, cynicism, and a lack of professional efficacy (Bos, Boselie, & Trappenburg, 2016; Chamberlain et al., 2017; Gaudenz et al., 2019). This in turn can result in lower quality resident care (Huang & Bowblis, 2018). Larger LTC homes (i.e., those with more than 100 beds) tend to be operated by for-profit chain companies that may also include continuums of care in which LTC homes are attached to retirement or assisted living facilities. These large for-profit chains have the ability to consolidate decision-making power to fewer stakeholders, which translates into economies of scale, thus allowing for further consolidation of their enterprises (Baines & Armstrong, 2018; Daly, 2015). Continuums of care in which LTC homes are attached to retirement communities may result in improved processes, such as stable staffing resulting from a larger pool to draw from between retirement and LTC areas. Furthermore, residents may be exposed to a greater sense of community, additional facilities (e.g., gym), visitors, and recreational activities if physical spaces and opportunities to mix with retirement residents are provided, although this remains an under-researched field (Zimmerman et al., 2003).

To our knowledge, this is the first Canadian multi-site observational study that examines the relationship between multi-level factors and mealtime interactions between residents and care staff. As such, this study explores the following question: what factors (resident, dining room, home) are associated with RCC practices and TF practices at mealtimes, when adjusting for theoretically modeled covariates?

Methods

Study Design

A secondary data analysis of the Making the Most of Mealtimes (M3) cross-sectional study was conducted. The M3 study examined multi-level factors associated with resident food and fluid intake across 32 Canadian LTC homes. Further details on the M3 study's research questions and data collection procedures can be found in the published study protocol (Keller et al., 2017a). This current study is a cross-sectional examination of resident-, dining room-, and home-level factors that may impact staff's RCC and TF practices at mealtimes.

Participants and Sample Selection

Purposive sampling was used to recruit LTC homes from Alberta, Manitoba, Ontario, and New Brunswick (Keller et al., 2017a). Eight homes per province were selected to achieve diversity in home size, profit status, models of care, ethno-cultural factors, geographic location (urban/rural), and other home-level factors that are known to impact food intake among residents (Keller et al., 2017a). Homes were eligible to participate in the M3 study if they: (1) had been operating for a minimum of 6 months and (2) had a minimum of 50 residents who met the inclusion criteria. From each LTC home, residents were recruited from one to four randomly selected care units. In LTC homes with dementia-specific units, one was selected to ensure the participation of residents living with dementia.

Residents were eligible to participate if they were: (1) 65 years of age or older, (2) required a minimum of 2 hours of direct care per day (e.g., bathing, dressing, eating), (3) had lived in the home for a minimum of 30 days, and (4) were able to provide informed consent and/or had a substitute decision maker to provide consent. Residents were ineligible to participate in the study if they: (1) were deemed medically unstable, (2) were receiving convalescent or

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respite care, (3) required tube feeding, (4) were at the end of life, 5) ate their meals in areas other than the dining room, or (6) had advanced directives that excluded their participation in research studies. Eligible residents were identified by trained LTC staff in participating home areas (i.e., care units). A random number table was used to determine the order of approaching residents for recruitment.

Upon expression of interest in participating, 20 residents per LTC home were recruited by M3 researchers (Keller et al., 2017a). Of the 640 residents who were initially recruited for the M3 study, one withdrew consent to participate. The remaining 639 participants in the final M3 sample were eligible for inclusion in this current study; those who had complete data on all variables of interest for each analysis were included. The final sample consisted of 634 residents within 82 dining rooms across 32 LTC homes. This sample was relatively small for interpreting upper- (e.g., home-) level variables given the small number of LTC homes included as per Snijders (2005). However, various statistical techniques, which will be described, were used to mitigate the limitations of low sample size.

Data Collection and Measures

M3 study data collection began in October 2014 and ended January 2016, with a duration of approximately 1 month in each home. Data at the resident, dining room, and home levels were collected according to the M3 conceptual model (Keller et al., 2014) to evaluate the multiple interacting factors associated with food intake (Keller et al., 2017a).

Resident-Level Data

Data on resident characteristics were collected from several sources. Resident health records were reviewed for age, gender, weight, body mass index (BMI; determined by recorded weight and researcher-measured ulna length), total number of diagnoses, and total number of medications. LTC staff were interviewed by M3 project coordinators to complete an assessment of selected components of the interRAI-Long-Term Care Form (LTCF) (Hirdes et al., 2008) for each resident participant. InterRAI-LTCF measures included the cognitive performance scale (CPS) score (Morris et al., 1994), aggressive behaviour scale (ABS) score (Perlman & Hirdes, 2008), depression rating scale (DRS) score (Koehler et al., 2005), and the activities of daily living long-form (ADL-LF) score (Morris, Fries, & Morris, 1999). Higher scores on the CPS (range: 0–6), ABS (0–12), DRS (0–14), and ADL-LF (0–28) indicated more advanced impairment or risk for each of the respective scores. Dysphagia risk was indicated if the resident: (1) was prescribed thickened fluids, (2) had failed the water and applesauce swallowing challenge, or (3) had been observed coughing or choking while eating/drinking during one of nine meal observations (Keller et al., 2017a). Residents' oral health was determined by a trained dental hygienist using a standardized assessment. This included rating the likelihood that a resident would experience eating challenges related to oral health conditions (e.g., loose teeth) or had an acute oral health care need (e.g., abscess). Resident nutrition risk was determined using the Mini-Nutritional Assessment-Short Form (MNA-SF) (Kaiser et al., 2009), using information obtained from the LTC home staff, residents' health records, and families. The MNA-SF scores range from 0 to 14, with a higher score indicating better nutritional status.

Trained research assistants conducted standardized mealtime observations that captured the mealtime characteristics of the participants and the care interactions that occurred between them and others in the dining room. Weighed food intake and other resident behaviours (e.g., leaving the dining room/walking during meals) were observed at a total of nine meals over 3 non-consecutive days to meet the original study aims (Keller et al., 2017a). More detailed observations of each resident were conducted at three of these meals, including one breakfast, lunch, and dinner. These observations provided data on the eating challenges experienced by residents using the Edinburgh Feeding Evaluation in Dementia Questionnaire (EDFED-Q) (Watson & Deary, 1997), and the quality of care interactions with staff and other residents using the Mealtime Relational Care Checklist (Iuglio et al., 2019), which will be described in more detail. A single item from the EDFED-Q was used to determine the level of physical eating assistance required, "Does the resident require physical help with eating/ feeding?"; scored as Never (1), Sometimes (2), or Often (3) (Watson & Deary, 1997).

The Mealtime Relational Care Checklist is a valid and reliable (RCC practices intraclass correlation coefficient [ICC] = 0.73; TF ICC = 0.85) checklist which is a part of the Mealtime Scan (described further), which can be used on its own for individual resident assessment of mealtime interactions (Iuglio et al., 2019; Keller, Chaudhury, Pfisterer, & Slaughter, 2018). Informed by a relational lens, the first 17 items in the checklist provide information on mealtime interactions observed for all residents (e.g., social conversation, supporting individual preferences; Supplementary Table 1). Each item was dichotomized so that the observer scored whether or not they observed RCC practice (e.g., resident is asked meal preference) and/or TF practices (e.g., resident is not asked meal preference) over the duration of the meal. It was possible for both positive and negative care actions to be scored for some, but not all, of the 17 items. For example, TF item 1: "Resident is told where to sit/ assigned seating", versus RCC item 1, "Resident is given choice/ not assigned seating", would be scored as either observed or not observed – never both – during a single meal observation, whereas TF item 7, "Is not informed of actions before taken" and RCC item 7, "Is informed of actions before taken" could both be observed during a single meal for the same resident. All RCC actions and all TF actions were summed separately for each resident-level mealtime observation and then averaged across the three meal observations to give an average RCC score and an average TF score per resident, with a maximum of 17 for each. These two Mealtime Relational Care Checklist scores, summarizing RCC practices and TF practices, are the main outcome variables of this study.

Dining Room-Level Data

Dining room-level mealtime audits included completion of the Mealtime Scan (MTS), which captures the social and physical dining environments, as well as the ways that care is provided (i.e., Mealtime Relational Care Checklist described previously but at the dining room level) during mealtimes in LTC settings (Keller et al., 2017a). The MTS has demonstrated good inter-rater reliability (Keller et al., 2018) and construct validity (Iuglio et al., 2018) for assessing the mealtime experience. MTS was completed by provincial research coordinators four to six times in each dining room representing all meals (breakfast, lunch, dinner) and the subscales and item scores were averaged (Keller et al., 2017a). Individual MTS items included in this analysis are the average number of

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residents who required physical eating assistance at a meal, the average number of staff involved in providing eating assistance, and the average number of family members/volunteers providing eating assistance. The average ratio of residents per care staff involved in eating assistance was calculated. Dining rooms located within a LTC home's specialized dementia care unit were differentiated from dining rooms in general home areas. Any structural renovations to the dining room done within the past 5 years were also noted.

LTC Home-Level Data

A comprehensive home survey was provided to all participating M3 LTC homes (n = 32) at the study outset and was completed by the directors of care and food services managers (Keller et al., 2017a). The questionnaire items captured several factors, including home characteristics (e.g., type of food production) (Keller et al., 2017a). Individual items of interest for the current analysis obtained from the home survey include: size of home (i.e., number of beds categorized as small, medium, or large based on LTC sector industry standards); whether the home was part of a chain corporation or independent; whether the home was for-profit or not-for-profit/charitable/municipal; and whether the home was part of a continuum of care (i.e., long-term care section of a continuing care retirement community) or a standalone residence (Keller et al., 2017a).

Ethical Considerations

Ethics clearance was obtained from the ethics boards associated with all study investigators' affiliated universities: University of Waterloo (ORE#20056), University of Alberta (Pro00050002), University of Manitoba (J2014:139), Université de Moncton (1415–022), and University Hospital Network, University of Toronto (16-5051-DE). Some individual LTC homes were required to obtain additional ethics clearance by their local/regional committees. Study participants or substitute decision makers provided written informed consent and assent to participate. Study protocol and ethics boards required research assistants to report instances of misconduct by care staff to home administrators, as well as to the research ethics board associated with the university conducting data collection within that LTC home.

Analysis

Multi-level regression analyses with three levels were used to assess the factors that are associated with the quality of care provided to LTC residents. Mixed-effects models with random intercepts accounted for within-class and between-class variance of residents clustered within dining rooms clustered within LTC homes. Models used restricted maximum likelihood (REML) estimation and Kenward-Roger degrees of freedom methods, which are appropriate for small samples (Bell, Ene, Smiley, & Schoeneberger, 2013; Kenward & Roger, 1997). Two outcomes, RCC scores and TF scores, were modeled separately using the multi-step process outlined by Bell et al. (2013) to identify the most parsimonious model. This process included testing random effects of all variables to determine if any associations of lower-level factors varied by dining room or home. Given the relatively small sample size for multi-level analysis, variables included in the final adjusted model were theoretically relevant based on the bivariate analysis and a priori knowledge. To maximize the sample, variables that were missing data on more than 5 per cent of participants were not included in the final regression analysis.

ICCs were calculated from the unconditional model without predictors and with random intercepts for the dining room and home to determine how much variance in the two outcome measures was explained at these upper levels. The bivariate fixed effect of each resident-, dining room-, and home-level characteristic was tested by adding each variable to the model separately. Random effects of each were also tested to determine candidates for modeling random slopes in the fully adjusted model. Statistically significant error variance for random slopes suggested that the association between the specified variable and the outcome varied by dining room or home (Bell et al., 2013). Variables included in the model were tested for collinearity and removed if necessary.

Cross-level interactions were explored to further quantify the influence of home and dining room level characteristics on the quality of the care practices provided to residents. All significant interactions were included in the final model. The fully adjusted model included the fixed effects of variables of interest, chosen based on theoretical importance, data availability, and considerations of model fit (e.g., collinearity), the random intercepts for dining room and home, and relevant interaction terms.

Data were analyzed using SAS® Studio version 3.5 (SAS Institute, Cary, NC, 2019). Statistical significance was determined at a level of $p < 0.05$ for all analyses. Missing data were not imputed.

Results

Of the 639 residents included in the M3 study sample, 634 (99.2%) were included in this study based on having complete Mealtime Relational Care Checklist data (Table 1). Approximately one third (31.1%) of residents were male and the average age was 86.7 ± 7.8 years. More than half of residents had moderate to advanced cognitive impairment (55.7%; CPS > 3) and 33.3 per cent of residents were at risk or had a diagnosis of depression. Eating challenges were common amongst this sample, in which more than half of residents were at risk or experienced dysphagia (59.2%), and half (49.4%) were found to have poor oral health that likely impacted their food intake. Almost one quarter of residents (23.2%) required some form of physical eating assistance at meals. Dining room and home-level characteristics are also described in Table 1.

Differences in Mealtime Care Provision at the Resident-, Dining Room- and Home-Levels

Residents received a mean of 9.6 ± 1.4 RCC practices and 5.6 ± 2.1 TF practices at mealtimes. The ICCs calculated from the unconditional model without predictors for RCC practices was 0.054 at the home level, 0.210 at the dining room level, and 0.736 at the resident level (Table 2). For TF practices, ICC was 0.356 at the home level, 0.162 at the dining room level, and 0.482 at the resident level (Table 3).

Bivariate fixed effects, controlling for multi-level clusters, indicated that at the resident level, higher BMI and overall better nutritional status were associated with more RCC practices (Table 1). Residents received fewer RCC practices from staff during meals if they were male, lived with moderate/advanced cognitive impairment, had higher ADL scores (i.e., were more dependent), were at risk of dysphagia, had poor oral health, had more eating challenges (ED-FED), or required any level of physical eating assistance. "Often" requiring physical assistance had the biggest effect on RCC practices: these individuals received fewer RCC practices

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Table 1. Bivariate association of relationship-centred and task-focused practices with resident-, dining room-, and home-level characteristics

	Total Sample Description		Mealtime Relational Care Checklist: Mealtime Care Practices	
Variable	*n*	Mean (SD) / % (*n*)	RCC Practices β (95% CI)	TF Practices β (95% CI)
Resident-Level Characteristics (*n* = 634)				
Age	634	86.8 (7.8)	−0.002 (−0.02, 0.01)	0.005 (−0.01, 0.02)
Sex, men	634	31.1% (199)	−0.26 (−0.50, −0.02)*	0.13 (−0.15, 0.41)
BMI	621	25.3 (5.7)	0.03 (0.01, 0.05)***	−0.04 (−0.06, −0.02)***
Cognitive Performance Scale Moderate to advanced (3-6) (vs. low to moderate [0-2])	629	55.7% (353)	−0.53 (−0.76, −0.30)***	1.13 (0.87, 1.64)***
Aggressive Behaviours Scale	627	1.9 (3.1)	−0.03 (−0.07, 0.01)	0.06 (0.02, 0.11)**
Depression risk (vs. not as risk)	634	33.3% (213)	0.12 (−0.12, 0.37)	−0.11 (−0.40, 0.18)
Activities of Daily Living – Long Form	629	15.0 (7.9)	−0.05 (−0.06, −0.03)***	0.11 (0.09, 0.12)***
Total number of diagnoses	634	5.4 (2.0)	0.0003 (−0.05, 0.05)	0.003 (−0.06, 0.07)
Total number of medications	634	7.5 (3.4)	0.01 (−0.01, 0.05)	−0.04 (−0.80, −0.002)
Dysphagia risk (vs. not at risk)	634	59.2% (378)	−0.34 (−0.56, −0.12)**	0.58 (0.32, 0.84)***
Oral health likely to affect food intake (vs. good oral health)	565	49.4% (280)	−0.32 (−0.56, −0.09)**	0.30 (0.03, 0.58)*
Total EDFED-Q Score	634	12.4 (2.3)	−0.26 (−0.30, −0.21)***	0.40 (0.35, 0.45)***
Level of physical eating assistance "Sometimes" (vs. Never) "Often" (vs. Never)	634	11.4% (72) 11.8% (75)	−0.44 (−0.75, −0.12) −1.61 (−1.93, −1.30)***	1.20 (0.85, 1.55) 2.22 (1.87, 2.57)***
3-day average energy Intake (kcal/day)	629	1553.5 (294.5)	−0.0004 (−0.0004, 0.0003)	−0.0002 (−0.0007, 0.0001)
3-day average protein intake (g/day)	629	57.4 (13.0)	−0.01 (−0.02, 0.0005)	0.002 (−0.008, 0.01)
Mini-Nutritional Assessment - Short Form	633	10.6 (2.5)	0.12 (0.08, 0.16)***	−0.20 (−0.25, −0.16)***
Dining Room-Level Characteristics (*n*=82)				
Number of residents requiring physical eating assistance at a meal	82	3.0 (2.6)	−0.08 (−0.15, −0.01)*	0.16 (0.07, 0.25)***
Number of staff involved in eating assistance	82	3.3 (2.1)	−0.10 (−0.19, −0.01)*	0.24 (0.13, 0.36)***
Ratio of residents per care staff involved in eating assistance[a]	74	7.4 (4.6)	0.04 (−0.01, 0.08)	−0.08 (−0.13, −0.02)**
Number of family members or volunteers involved in eating assistance	82	1.5 (1.4)	−0.02 (−0.17, 0.12)	0.18 (−0.05, 0.41)
Specialized dementia care unit (vs. general care unit)	82	29.3% (24)	−0.04 (−0.46, 0.38)	0.41 (−0.14, 0.96)
Structural renovation in past 5 years (vs. no renovation in past 5 years)	80	21.2% (17)	0.20 (−0.32, 0.72)	0.50 (−0.45, 1.44)
Home-Level Characteristics (*n*=32)				
Large home size (≥100) (vs. small/ medium [≤99])	32	65.6% (21)	0.08 (−0.40, 0.56)	0.97 (−0.06, 2.00)
Home part of chain (vs. independent)	32	37.5% (12)	0.09 (−0.38, 0.56)	0.64 (−0.40, 1.68)
For profit (vs. not-for-profit / municipal)	32	31.2% (10)	0.15 (−0.34, 0.65)	0.33 (−0.78, 1.44)
Home part of a continuum of care (vs. standalone home)	32	31.2% (10)	0.06 (−0.43, 0.55)	0.87 (−0.20, 1.94)

Note. Bivariates are modeled with dining room and home-level intercepts as random effects; random slopes of each variable were tested also.
Statistically significant at *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
SD = standard deviation; CI = confidence interval; BMI = body mass index; EDFED-Q = Edinburgh Feeding Evaluation in Dementia Questionnaire; RCC = relationship-centred care; = TF, task-focused.

(β = -1.61 [95% CI = -1.93, -1.30]) during meals than those who did not require eating assistance. Dining rooms with larger numbers of residents requiring physical eating assistance and a larger number of staff providing eating assistance were significantly associated with fewer RCC practices. None of the home level variables were associated with RCC practices at mealtimes in bivariate analyses.

Significantly more TF practices were observed among those residents living with moderate/advanced cognitive impairment (β = 1.13 [95% CI = 0.87, 1.64]) and among those who exhibited expressive behaviours, had higher ADL scores, were at risk of dysphagia, and had poorer nutritional status (Table 1). Poor oral health that impacted food intake and overall eating challenges (EdFED-Q) were also associated with more TF practices. Again, residents who were dependent on physical eating assistance "Sometimes" (β = 1.20 [95% CI = 0.85, 1.55]) and "Often" (β = 2.22 [95% CI = 1.87, 2.57]) experienced notably more TF practices. Those with a higher BMI or good nutrition status as per the MNA-SF were less likely to experience TF practices. Dining rooms that had a larger number of residents who required physical eating

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Table 2. Multi-level predictors of relationship-centred care practices

	Unconditional Model	All Variables without Random Slopes	All Variables with Random Slopes	Final Model with Interactions
n	634	615	615	615
Fixed Effects	Parameter Estimate (95% Confidence Interval)			
Intercept	9.63 (9.41, 9.86)***	10.10 (9.50, 10.69)***	9.89 (9.32, 10.46)***	9.66 (9.03, 10.28)***
Resident Level Effects				
Sex, men		−0.23 (−0.45, −0.005)*	−0.24 (−0.46, −0.02)*	−0.25 (−0.47, −0.02)*
Moderate/advanced cognitive impairment (vs. none/mild)		−0.17 (−0.42, 0.08)	−0.16 (−0.41, 0.09)	−0.21 (−0.46, 0.04)
Aggressive Behaviours Scale		−0.02 (−0.07, 0.02)	−0.03 (−0.07, 0.01)	−0.02 (−0.06, 0.02)
Depression risk (vs. not at risk)		0.08 (−0.17, 0.32)	0.08 (−0.16, 0.32)	0.09 (−0.15, 0.33)
Activities of Daily Living – Long Form		−0.002 (−0.02, 0.01)	−0.005 (−0.02, 0.02)	0.02 (0.002, 0.05)*
Dysphagia risk (vs. not at risk)		−0.26 (−0.47, −0.04)*	−0.24 (−0.45, −0.03)*	−0.24 (−0.46, −0.03)*
Level of physical eating assistance (vs. never)				
“Sometimes”		−0.28 (−0.62, 0.06)	−0.24 (−0.58, 0.09)	−0.24 (−0.5, 0.10)
“Often”		−1.46 (−1.83, −1.09)***	−1.44 (−1.82, −1.05)***	−1.39 (−1.76, −1.02)***
Dining Room Level Effects				
Number of staff involved in eating assistance		0.05 (−0.15, 0.04)	−0.04 (−0.13, 0.05)	−0.06 (−0.15, 0.03)
Number of family members or volunteers involved in eating assistance		0.03 (−0.13, 0.20)	−0.01 (−0.18, 0.15)	0.05 (−0.11, 0.21)
Specialized dementia care unit (vs. general care unit)		0.30 (−0.12, 0.72)	0.36 (−0.04, 0.77)	0.31 (−0.09, 0.71)
Structural renovation in past 5 years (vs. no renovation in past 5 years)		0.28 (−0.35, 0.91)	0.38 (−0.25, 1.01)	0.27 (−0.34, 0.89)
Home Level Effects				
Large home size (≥100) (vs. small/ medium [≤99])		−0.004 (−0.57, 0.56)	0.09 (−0.46, 0.64)	0.04 (−0.51, 0.59)
Home part of chain (vs. independent)		−0.06 (−0.74, 0.63)	0.04 (−0.64, 0.72)	−0.08 (−0.75, 0.59)
For profit (vs. not-for-profit / municipal)		0.37 (−0.35, 1.09)	0.52 (−0.19, 1.24)	0.98 (0.16, 1.80)*
Home part of a continuum of care (vs. standalone home)		0.12 (−0.48, 0.72)	0.36 (−0.23, 0.95)	0.84 (0.11, 1.57)*
Interactions				
ADLs For profit home				−0.04 (−0.07, −0.01)**
ADLs Home part of continuum of care				−0.05 (−0.08, −0.02)**
Error Variance	Covariance Parameter Estimate (Standard Error)			
Level-1 (resident level)	1.60 (0.10)[a]***	1.33 (0.08)***	1.25 (0.08)***	1.32 (0.08)***
Intercept (dining room)	0.46 (0.14)[a]***	0.34 (0.11)**	0.11 (0.13)	0.28 (0.10)**
Intercept (home)	0.12 (0.10)[a]	0.22 (0.13)*	0.19 (0.13)	0.23 (0.12)*
Slope (ADLs, dining room)			0.001 (0.0006)	
Slope (ADLs, home)			0.0005 (0.0005)	
Model Fit				
−2 log Likelihood	2204.6	2053.0	2039.1	2052.4
AIC	2210.6	2059.0	2049.1	2058.4
BIC	2215	2063.4	2056.4	2062.8

Note: [a]Intraclass correlation coefficients (ICC) calculated from error variance: dining room level, 0.210; home level, 0.054.
Statistically significant at *$p < 0.05$; ** $p < 0.01$; ***$p < 0.001$.
ADLs = activities of daily living; AIC = Akaike information criteria; BIC = Bayesian information criteria.

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Table 3. Multi-level predictors of task-focused practices

	Unconditional Model	All Variables without Random Slopes	All Variables with Random Slopes	Final Model with Interactions
n	634	615	615	615
Fixed Effects		Parameter Estimate (95% Confidence Interval)		
Intercept	5.60 (5.09, 6.11)***	2.86 (1.88, 3.85)***	3.24 (2.49, 3.98)***	3.57 (2.55, 4.60)***
Resident Level Effects				
Sex, man		0.06 (−0.17, 0.30)	0.08 (−0.15, 0.30)	0.08 (−0.15, 0.31)
Moderate/advanced cognitive impairment (vs. none/ mild)		0.34 (0.07, 0.60)*	0.34 (0.09, 0.60)**	0.40 (0.13, 0.66)**
Aggressive Behaviours Scale		0.02 (−0.02, 0.07)	0.03 (−0.02, 0.07)	0.02 (−0.02, 0.06)
Depression risk (vs. not at risk)		−0.06 (−0.32, 0.19)	−0.06 (−0.31, 0.18)	−0.08 (−0.34, 0.17)
Activities of Daily Living – Long Form		0.06 (0.04, 0.07)***	0.06 (0.04, 0.09)***	0.01 (−0.02, 0.04)
Dysphagia risk (vs. not at risk)		0.31 (0.08, 0.53)**	0.26 (0.04, 0.47)*	0.31 (0.08, 0.53)**
Level of physical eating assistance (vs. never)				
“Sometimes”		0.56 (0.21, 0.91)**	0.51 (0.16, 0.85)**	0.46 (0.12, 0.81)**
“Often”		1.35 (0.96, 1.73)***	1.27 (0.88, 1.67)***	1.27 (0.88, 1.66)***
Dining Room Level Effects				
Number of staff involved in eating assistance		0.07 (−0.04, 0.17)	0.09 (−0.001, 0.18)	0.07 (−0.03, 0.17)
Number of family members or volunteers involved in eating assistance		0.05 (−0.15, 0.26)	0.07 (−0.11, 0.25)	0.06 (−0.13, 0.26)
Specialized dementia care unit (vs. general care unit)		−0.24 (−0.69, 0.21)	−0.30 (−0.69, 0.09)	−0.27 (−0.70, 0.15)
Structural renovation in past 5 years (vs. no renovation in past 5 years)		−0.17 (−1.07, 0.73)	−0.36 (−1.10, 0.37)	−0.19 (−1.04, 0.66)
Home Level Effects				
Large home size (≥100) (vs. small/ medium [≤99])		0.73 (−0.32, 1.78)	0.44 (−0.35, 1.23)	0.14 (−0.98, 1.26)
Home part of chain (vs. independent)		0.33 (−0.95, 1.61)	0.01 (−0.96, 0.99)	−0.15 (−1.49, 1.18)
For profit (vs. not-for-profit / municipal)		0.30 (−1.02, 1.61)	0.08 (−0.92, 1.08)	0.27 (−1.04, 1.57)
Home part of a continuum of care (vs. standalone home)		1.01 (−0.09, 2.11)	0.56 (−0.27, 1.39)	0.34 (−0.83, 1.51)
Interactions				
ADLs large home size (>100 beds)				0.03 (0.005, 0.06)*
ADLs home part of a chain				0.03 (0.002, 0.06)*
ADLs home part of a continuum of care				0.04 (0.01, 0.08)**
Error Variance		Covariance Parameter Estimate (Standard error)		
Level-1 (resident level)	2.14 (0.13)***	1.42 (0.09)***	1.32 (0.08)***	1.40 (0.09)***
Intercept (dining room)	0.72 (0.21)***	0.34 (0.12)**	0.02 (0.11)	0.26 (0.10)**
Intercept (home)	1.58 (0.52)**	1.39 (0.46)**	0.60 (0.26)*	1.40 (0.45)***
Slope (ADLs, dining room)			0.001 (0.0005)*	
Slope (ADLs, home)			0.002 (0.001)*	
Model Fit				
−2 log likelihood	2434.4	2123.2	2093.7	2123.9
AIC	2440.4	2129.2	2103.7	2129.9
BIC	2444.8	2133.6	2111.0	2134.3

Note. Intraclass correlation coefficients (ICC) calculated from error variance: dining room level, 0.162; home level, 0.356
Statistically significant at *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
ADLs = activities of daily living; AIC = Akaike information criteria; BIC = Bayesian information criteria.

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assistance, and those that had more staff involved in providing eating assistance had more TF practices observed. Yet, a higher ratio of residents per care staff involved in eating assistance was associated with fewer TF practices (-0.08 [95% CI = -0.13, -0.02]). None of the home-level variables were associated with TF practices in bivariate analyses.

Random effects of all variables of interest were tested in the initial bivariate analysis. The only factor that had a significant random effect was needing assistance with ADLs, indicating that the association between needing assistance with ADLs and both RCC and TF varied across the dining room and home clusters. As such, needing assistance with ADLs was also tested as a random effect in the fully adjusted regression models, and interactions between needing assistance with ADLs with dining room and home level variables were also explored.

The multi-level regression models identified significant factors associated with RCC practices (Table 2) and TF practices (Table 3) after adjusting for theoretically modeled covariates and cross-level interactions. Being male (β = -0.25 [95% CI = -0.47, -0.02]), having less impairment in ADLs (β = 0.02 [95% CI = 0.002, 0.05]), risk of dysphagia (β =-0.24 [95% CI = -0.46, -0.03]), and "Often" requiring physical assistance with eating (β =-1.39 [95% CI = -1.76, -1.02]) were associated with fewer RCC practices in the final model with interactions (Table 2). When included in the fully adjusted model, the random slopes for needing assistance with ADLs at the dining room and home level were not significant. However, the interactions between needing assistance with ADLs and both profit status and being part of a continuum of care were significant. When these interactions were included, RCC practices were higher in for-profit homes than in not-for-profit homes, as well as in homes that were part of a continuum of care compared with standalone homes, but the effect of needing assistance with ADLs on RCC practices was inverse in these homes as indicated by the negative interaction terms, meaning that more impairment in ADLs was associated with fewer RCC practices.

Higher TF scores, indicating more TF practices, were found among residents with moderate/advanced cognitive impairment (β = 0.40 [95% CI = 0.13, 0.66]) and dysphagia risk (β = 0.31 [95% CI = 0.08, 0.53]), and among those requiring physical assistance "Sometimes" (β = 0.46 [95% CI = 0.12, 0.81]) and "Often" (β = 1.27 [95% CI = 0.88, 1.66]) (Table 3). The random effect of needing assistance with ADLs was significant at both the home and dining room level in the TF practices model, indicating that the association between needing assistance with ADLs and TF practices varied across the homes and dining rooms. None of the home or dining room level variables were independently associated with either RCC or TF practices. However, large home size, being part of a chain, and being part of a continuum of care moderated the association between needing assistance with ADLs and TF practices; the effect of ADL dependence was more pronounced among homes with these characteristics, as evidenced by the positive parameter estimates for each of the interaction terms.

Discussion

Mealtimes in LTC homes involve complex processes that can support or hinder caring and relational connections between those who live and work in these environments. This study sought to examine the independent associations between multi-level factors and care practices during mealtimes. Our findings provide novel insight into the relational aspects aspects of mealtimes and indicate that care provision influenced by resident-, dining room-, and home-level factors. In participating homes, RCC practices were more common than TF practices. We will discuss these different levels of factors and, where plausible, suggest interplay among the levels based on our multi-level analyses.

Findings from our study indicate that resident-level characteristics are strongly associated with the type of care received from staff at mealtimes. Fewer RCC practices were independently associated with male residents, which brings into question gender differences within the context of relational care. Research has shown that male residents living with dementia initiate more interactions with staff than female residents, whereas female staff initiate more interactions with male residents than with female residents (Lindesay & Skea, 1997). Further, male residents are more likely to be socially isolated, which could be a result of family factors (e.g., divorce) (Chamberlain, Duggleby, Teaster, & Estabrooks, 2020) and difficulty forming close friendships with other residents within the home (Davila et al., 2022). We contend that male residents may depend more heavily on mealtimes for social interactions and that their demands may be met by more TF responses from staff. This may occur more frequently in dining rooms with more residents who require eating assistance, where there are more staff involved in providing this assistance, who therefore may feel especially rushed and have less capacity to respond in RCC ways to the needs of male residents. Future research should explore gender differences using an intersectional lens within the context of relational mealtimes in LTC environments.

Residents who face any form of eating challenge, potentially related to cognitive impairment, including increased ADL dependence and dysphagia risk, received significantly more TF practices and fewer RCC practices. Varying levels of eating challenges among residents between meals has been noted as a barrier to optimizing eating performance and positive staff engagement. Liu, Tripp-Reimer, et al. (2020) reported that nursing assistants found it frustrating to balance resident autonomy at mealtimes with fluctuating physical and cognitive functions that required increased verbal and physical prompting. Most notably are the differences in care received by those residents who are most dependent on staff: the highest level of eating assistance (i.e., "Often") was the highest parameter estimate of residents receiving the fewest RCC practices and the most TF practices at meals. We know from previous research that residents with eating challenges have lower nutritional intake of both protein and energy (Carrier, West, & Ouellet, 2007; Keller et al., 2017b). With added pressure to ensure that residents are consuming sufficient food, staff may adopt inappropriate strategies (e.g., force feeding, coercion, intimidation) to fulfill this responsibility and neglect attending to the social aspects of meals (Palese et al., 2018).

Our analysis reveals that the quality of mealtime care, as measured by RCC and TF practices, is influenced at the individual-, dining room-, and home-level to varying degrees. The calculated ICCs indicated that 21 per cent of the variation in RCC practices was explained at the dining room level, whereas more than half of the total variation in TF practices was explained at the dining room- (16%) and home- (36%) levels combined. These findings confirm our hypothesis that relational mealtime practices are impacted by the broader environment and culture within which care interactions are situated. However, independent effects were non-significant in models without interactions, and only a few modifying effects were found among the home- and dining room-level variables included in our final model with interactions. This suggests that the interplay among macro-level factors

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(e.g., government regulations, economic factors, home policies) and the quality of mealtime care practices is complex and more nuanced than can be represented by simple measures such as the number of staff present or the profit status of the home. Greater dependency was more strongly predictive of more TF practices and fewer RCC practices in homes that were large, chains, for-profit, or attached to continuums of care. In other homes, the level of dependency was less important in predicting TF and RCC practice.

Chain homes, for-profit homes, larger homes, and those with a continuum of care may have challenges with understaffing, high staff turnover, fewer hours of direct resident care, and a higher number of reported deficiencies, and may have larger dining rooms, all of which would necessitate procedures to promote efficiency that can result in TF practices for those residents who require additional support (Bos et al., 2016; Chaudhury et al., 2013, 2018; Harrington et al., 2017; Hsu et al., 2016; McGregor et al., 2011). For example, Berta and colleagues (2010) reported that directors of care in LTC homes found managing larger facilities more challenging, as there is a greater emphasis on operational efficiency (i.e., cost reducing strategies), than did their counterparts in smaller homes. Also, directors of care at smaller homes explained that the size of their home was more conducive to staff–resident relationships and better emotional care (Berta, Laporte & Kachan, 2010). Large LTC homes may adopt standardization of work, quantifying "best practices" to promote efficiencies, and in doing so, reduce the ability for responsive staff–resident interactions that are preconditions for RCC practices, especially those that are needed at mealtimes for more functionally dependent residents (Baines & Armstrong, 2018). In addition, there is a paucity of literature that examines the association between LTC homes attached to continuums of care and quality of care provided (Zimmerman et al., 2003). Future research should examine how shared centralized services among the different levels of care offered within these continuums of care impact resident quality of life, mealtime care, and staff job satisfaction.

Findings from this study suggest that mealtime interactions between staff and residents are influenced by resident-level factors (e.g., gender, functional impairment, dysphagia risk, cognitive impairment, need for eating assistance) and these factors, particularly level of dependence, are impacted by home characteristics such as the built environment (e.g., size of home) and the marketization (e.g., profit status, chain homes) of the Canadian LTC system. Given the variation in LTC homes across Canada, the ways in which multi-level factors interact with one another to promote RCC or TF mealtimes, are for the most part context dependent. However, results from this study indicate clear linkages between macro-level factors and their associations with the type of care being provided by staff to functionally dependent residents with complex mealtime care needs. It is for these vulnerable residents that staff require a supportive organizational culture that recognizes the need for additional time and training to ensure not only adequate resident food and fluid intake, but, importantly, individualized interactions that reinforce social care and the relational autonomy of both staff and residents.

Within Canada, some LTC homes have responded to the culture change movement by formally adopting social models of care with the intention to improve organizational culture and quality of care, such as during mealtimes. For this transition to take place, home leadership must embrace the idiosyncratic nature of individualized care and the autonomy of staff to enact its principles (Rockwell, 2012). Yet, continued pressure to standardize mealtime care that can be TF, repetitive, and aimed at increasing efficiency and lowering costs, means that these social models are often simply being laid atop a deeply embedded biomedical model (Donnelly & MacEntee, 2016; Rockwell, 2012). This phenomenon has been demonstrated in implementation studies that look to support LTC homes in adopting social models of care (Ducak, Sweatman, & Keller, 2015; Scalzi, Evans, Barstow, & Hostvedt, 2006; Wu et al., 2018). For example, Keller et al. (2020) implemented a complex intervention aimed at creating RCC mealtimes in three LTC homes over a 12-month period with the support of an external facilitator. Although significant improvements were observed in all participating homes, the degree to which improvements were made and sustained depended markedly on the willingness or reluctance of the home's leadership and organizational culture to embrace RCC philosophy and mealtime practice change (Keller et al., 2020).

The adoption of social models of care and the culture change movement can no longer exist as rhetoric, and the onus to adopt these changes cannot exclusively depend on staff, residents, and families. Simply put, for mealtimes to improve, the system must change. Governments need to determine how to measure, reward, and reinforce social models of care and support the configuration of the physical spaces of homes necessary to support this type of care (e.g., smaller absolute size). Low staffing levels paired with a lack of mandated minimum care standards remains an ongoing issue in many provinces. Left unaddressed, the increasing numbers of residents with complex care needs with insufficient supports will continue to perpetuate the current system, to the detriment of resident and staff well-being (Daly, 2015).

The COVID-19 pandemic has resulted in a disproportionate amount of suffering and death within LTC communities, with variations in outcomes across Canada depending on each province's public health orders and LTC sector ownership type (proprietary, non-profit religious, not-profit lay) and jurisdiction profile (municipal, provincial) (Daly, 2015; Keller et al., 2021; McGregor & Harrington, 2020). Specific LTC home characteristics that resulted in increased outbreaks and resident deaths during the COVID-19 pandemic have been linked to many ongoing systematic issues within the LTC sector, including large, older institutional buildings and low staffing levels – features typically associated with for-profit and corporate chain status homes (Anderson, Bird, MacPherson, & Blair, 2016; Liu et al., 2020; McGregor & Harrington, 2020; Stall, Jones, Brown, Rochon, & Costa, 2020). The impact of other structural factors related to building design that may impact care delivery conditions, such as LTC homes being attached to assisted living or retirement communities rather than being standalone LTC homes, remains under-researched (Zimmerman et al., 2003). However, a recent study by Keller et al. (2021) indicates that staff's ability to continue to provide RCC mealtime practices immediately after the first wave (between July and September 2020) was impeded by multi-level factors, including the geographic location of the home, the size of the home, and the age of the building. Researchers undertaking implementation studies focused on changing practice to improve the mealtime experience, especially during times of outbreak, should consider the impact of multi-level factors that facilitate or hinder practice change uptake. Policy makers need to accept the trade-off that exists among quality care (e.g., RCC practices and minimum staffing ratios), resident quality of life over safety, and the funding necessary to protect and support RCC mealtimes in Canada's LTC homes (Keller et al., 2022; McGregor & Harrington, 2020).

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Limitations

This study is the first, or one of the first, studies to explore multi-level factors associated with mealtime care provision within Canadian LTC homes. The M3 study was a large and comprehensive analysis of food intake and mealtime environments in 32 LTC homes across Canada, which has allowed for the relational insight needed to identify factors associated with mealtime care provision, particularly among vulnerable residents. However, there are limitations to this work. First, the cross-sectional design of this study prevents conclusions related to causality between multi-level factors and care practices. Second, the purposive sampling of LTC homes in four Canadian provinces did not result in a representative sample of each province's LTC sector profiles. For example, although Ontario has the highest number of for-profit homes in Canada, only 6.3 per cent of the total resident sample lived in a for-profit home within that province. Third, although research assistants were rigorously trained to conduct observations using the Mealtime Relational Care Checklist, inter-rater reliability testing was not possible prior to data collection, and subjective differences in ratings may have affected interpretations of care interactions between staff and residents. Nevertheless, the Mealtime Relational Care Checklist has previously demonstrated reliability (Keller et al., 2018). Fourth, the reciprocal element of RCC was not captured in the Mealtime Relational Care Checklist from the resident's perspective. We recognize the oversimplistic nature of qualifying a care interaction as simply RCC or TF without recognizing resident roles in mealtime exchanges in this study. It is important to account for contextual factors that help to explain social interactions during mealtimes in LTC homes. In the M3 study, factors associated with poor food intake were largely the focus of data collection (e.g., eating challenges, dysphagia risk, health conditions). Covariates that could support and explain why certain mealtime practices occur at the dining room and home-level (e.g., training of staff in culture change, leadership style) were not assessed. Future research is needed to more fully understand other dining room and home-level contextual factors that may be impacting staff mealtime care practices, such as training of staff on culture change and leadership style.

Conclusion

Mealtimes in LTC settings play an important role in supporting resident physiological and psychological well-being, and help to reinforce a sense of community between those who live and those who work in these settings. This study explored the factors at the home, dining room, and resident level that were associated with mealtime care practices. TF practices are driven by resident-level factors, including advanced cognitive impairment and being more dependent at mealtimes. RCC practices are associated with residents being female and more independent, as well as living in a for-profit home or one attached to a continuum of care. However, profit status, size of home, and continuums of care interact with resident functional dependence to impact the quality of mealtime practices. Our findings further our understanding of the long-standing disruption between promoting philosophies of social care and their translation into everyday mealtime practices. To create RCC mealtimes, the focus for improvement must not only include the needs of residents, but also the needs of those providing care. Governments, policy makers, and researchers must recognize that these two conditions are contingent upon the other if we are to continue to move forward in improving the lives of those who live and work in Canada's LTC homes.

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