How Are the Mealtime Experiences of People in Residential Aged Care Facilities Informed by Policy and Best Practice Guidelines? A Scoping Review

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Research Article

Keywords: aged care, long term care, mealtime, policy, Structuration Theory, dysphagia

Posted Date: December 6th, 2021

DOI: https://doi.org/10.21203/rs.3.rs-1122122/v1

Abstract

Background. Mealtimes are embedded routines of residents living in residential aged care facilities (RACFs) that directly impacts their health and quality of life. Little is known about how mealtime experiences are informed and affected by structures such as government and organisational policies and processes. This scoping review used Gidden's (1984) Structuration Theory to investigate how governance structures related to mealtime practices inform residents' mealtime experiences.

Methods. Using Arksey and O'Malley's (2005) scoping review framework, a systematic database, grey literature and policy search was completed in May 2020 and updated in July 2021. From 2725 identified articles, 137 articles were included for in data charting and deductive analysis, and 76 additional Australian government policy papers were used interpretatively.

Results. Data charting identified that the included studies were prominently situated in Western countries, with a progressive increase in publication rate over the past two decades. Qualitative findings captured structures that guide RACF mealtimes, how these relate to person-centred mealtime practices, and how these facilitate residents to enact choice and control.

Conclusions. Current policies lack specificity to inform the specific structures and practices of RACF mealtimes. Staff, residents, organisational and governance representatives possess different signification, legitimation and domination structures, and lack a shared understanding of policy, and how this influences processes and practices that comprise mealtimes.

Introduction

There are several benefits of positive mealtime experiences on the quality of life (QoL) and overall health for people who reside in residential aged care facilities (RACFs) (Carrier, West et al. 2009). However, mealtimes are highly variable depending on local RACF practices (Lowndes, Daly et al. 2018, Wang, Everett et al. 2020), and are also informed by broader government regulatory processes, local policies and guidelines (Bundgaard 2005). Mealtime interventions designed to improve resident nutrition and/or mealtime enjoyment are often implemented in a 'bottom-up' format by staff, families or the residents themselves (Abbey 2015). However, the outcomes are variable and often lack generalisation. Conversely, government and local policies and guidelines provide top-down directives that are likely to influence mealtime experiences. However, little is understood about the nature of this influence, nor how these governance structures could inform future mealtime interventions.

For residents, their histories, meanings and memories of food frame their understanding of mealtimes (Watkins, Goodwin et al. 2017). As mealtimes are among the most time-consuming of daily activities, residents' perceptions of QoL are inevitably linked with eating, nutrition and meals (Aselage, Amella et al. 2011). Speroff and colleagues (Speroff, Davis et al. 2005 p1) suggested that mealtimes in RACFs should "foster independence, promote self-esteem, and make the resident as comfortable and

safe as possible, while providing a nourishing, pleasant meal and minimising negative health outcomes".

Positive mealtimes are associated with quality care, relating to the number of qualified staff in the organisation, the degree of carer workload and stress (Gastmans 1998, Buelow and Fee 2000). Low staffing reduces time spent with residents, and fosters resident neglect when feeding, unsafe feeding practices, increased choking risk and reduced mealtime social interaction (Lowndes, Daly et al. 2018). Positive staff-resident interactions increase resident food consumption and improve mealtime experiences (Evans and Crogan 2005). There is also growing evidence that communal dining methods, such as restaurant-style or family-style dining create positive mealtime experiences through fostering choice of tablemates and social interaction (Barnes, Wasielewska et al. 2013, Philpin, Merrell et al. 2014, Keller, Beck et al. 2015). Similarly, dining room ambience may be modified to promote homeliness (Kenkmann and Hooper 2012). A positive dining culture that fosters social relationships amongst residents, enables social normalcy, a sense of belonging and increases interaction opportunities (Bundgaard 2005, Kenkmann and Hooper 2012, Watkins, Goodwin et al. 2017). Conversely, resident factors, including personality differences, health conditions or difficulties complying with RACF routines generate negative mealtime experiences and social anxiety (Watkins, Goodwin et al. 2017). For example, health conditions that affect a resident's eating or swallowing function may require texture-modified diets (TMDs) to reduce aspiration and choking risk, but these are known to negatively affect meal enjoyment, calorie intake and QoL (Hines, McCrow et al. 2010, Bailey, Bailey et al. 2017, Keller, Carrier et al. 2017, Ballesteros-Pomar, Cherubini et al. 2020). Thus, social and physical mealtime environments influence nutrition outcomes and resident QoL (Bundgaard 2005, Barnes, Wasielewska et al. 2013, Bennett, Ward et al. 2014). These factors are influenced by government policy and organisational practices that guide how RACFs resource and design mealtimes (Reimer and Keller 2009), but it remains unclear how these mealtime quality indicators are measured.

Despite evidence demonstrating the benefit for residents of mealtime environments that encourage choice and independence, logistical barriers often prevent RACFs from adopting these approaches (Maluf, Cheater et al. 2020). Person-centred care (PCC) approaches provide choice and control on when, what and where to eat, encouraging mealtime participation that improves resident QoL, and are considered best-practice (Evans and Crogan 2005, Reimer and Keller 2009, Grøndahl and Aagaard 2016). While some facilities attempt to facilitate person-centred mealtimes, dining practices remain largely staff-directed, staff-enhanced dependency is a common RACF phenomenon, and residents are often excluded from decisions or opportunities to exercise autonomy (Speroff, Davis et al. 2005, Palese, Bressan et al. 2018, Maluf, Cheater et al. 2020). Resident participation in decision-making and enactment of mealtimes is thus limited by the RACF's care approach and practices.

Government policies and standards that regulate and fund RACFs influence local RACF practices and processes (Buelow and Fee 2000). However, it is not known how these government level structures influence how RACFs enact mealtimes, their capacity to implement best person-centred mealtime practices, nor how mealtime quality is conceptualised, measured and assured. Whilst many studies have

identified the need for more specified policy to improve RACF mealtime service provision (Reimer and Keller 2009, Bennett, Ward et al. 2014, Keller, Carrier et al. 2017, Shune and Linville 2019), it is not clear how policy, practice guidelines or the evidence that informs this currently influences residents' mealtime experiences. This scoping review thus aims to explore how evidence about RACF mealtime experiences relate to policy and best practice guidelines. In this study, we have applied the Australian policy context as a case study to explore the broader context of international literature about RACF mealtime experiences. We consider policy and guidelines as structures that influence RACF mealtimes, and explore these using Gidden's (1984) Structuration Theory, which conceptualises the creation and reproduction of social systems (Giddens 1984, Varpio, Paradis et al. 2020). This scoping review explores the research question:

- How are the mealtime experiences of residents in RACFs informed by policy and best practice guidelines?

Methods

Theoretical Framework

Giddens (1984) Structuration theory was used as a deductive, analytic framework to explore how structures inform the actions of stakeholders within the RACF mealtime system, including those of residents, staff and organisational representatives (Varpio, Paradis et al. 2020). These structures and actions have dual influence: mealtime structures influence stakeholder actions, and simultaneously, stakeholder actions influence mealtime structures, with both shaping the mealtime experience. Structures provide rules, routines, traditions and resources that guide how individuals operate during mealtimes. Individuals act within these established mealtime structures, but can also influence or change these structures through their actions. Individuals store structures as memory traces that determine how they act during mealtimes, and how they predict the likely outcomes of these actions as mealtimes become repeated, routinised and internalised. The three memory traces, that are referred to as 'domains' in this research, are signification, legitimation and domination. In the context of RACF mealtimes, signification refers to how mealtime actions are encoded in language to form meaning. Legitimation refers to how an individual's actions operate within mealtime norms and routines. Lastly, domination refers to the resources that individuals use to direct power to accomplish mealtime actions. Together, these domains generated a coding framework to explore RACF mealtime experiences (Giddens 1984).

Search Strategy

The Population, Concept, Context protocol (Peters, Godfrey et al. 2020) was applied to generate terms to formulate the research question and scoping search, which is demonstrated in Appendix A. The scoping review was undertaken following Arksey & O'Malley's (2005) methodological framework in May 2020 (Arksey and O'Malley 2005). A subsequent secondary search that used the same strategy was conducted in July 2021.

A systematic search strategy, demonstrated in Appendix B, was conducted with input from a medical librarian. Nine databases and the grey literature were searched using Haddaway et al.'s (2015) guidelines (Haddaway, Collins et al. 2015). Included articles were publications in English. No date limitations were applied to capture RACF mealtime practices over time, as awareness and governance of the social and nutritional implications of mealtime care progressively increased. An initial search on how policy and best practice inform mealtimes yielded few results. Therefore, two separate database and grey literature searches were completed in May 2020, and repeated in September 2021 – Search A: mealtime experiences in RACFs and Search B: policies and guidelines that relate to mealtimes in RACFs. As policy documents that specifically addressed mealtimes were not addressed in Search B, two separate post-hoc hand searches for Australian aged care policy were applied using Google, to facilitate the drilling down to mealtime practices: 1) Australian aged care policies and 2) Australian Royal Commission into Aged Care Quality and Safety. Since policy and regulation varies between countries, the Australian context was chosen as a case study to illustrate policy impacts on RACF mealtimes.

Final search results were imported into EndNote X9 and screened to remove duplicates (The EndNote Team 2013). The first 200 results from the grey literature searches were imported, and added to the primary search dataset, shown in Appendix C (Haddaway, Collins et al. 2015).

Study Selection

From the primary search (May 2020), 2688 articles were identified and imported into Covidence to manage the screening and full text reviews (Covidence 2020). Following removal of duplicates, title and abstract screening were completed on 2422 articles. Next, 303 articles were randomly selected for screening by the third author to establish agreement. Thirty-four articles that were not agreed were screened and discussed against the inclusion criteria until a consensus was reached (Waffenschmidt, Knelangen et al. 2019). This yielded a high level of agreement between the researchers (91% and Cohen's Kappa score of 0.7) (McHugh 2012). Figure 1 shows a PRISMA diagram demonstrating the screening process for both the primary and secondary searches (Moher D 2009). For the primary search the first and third authors completed a full-text review on 319 articles, and 126 of these articles were included for analysis. The secondary search was conducted by the second and third authors, who completed abstract screening on 33 additional articles and full text review on 15 of these, with 11 included for analysis.

The first author compiled memos throughout the primary review process to gather preliminary ideas and identify early categories and themes in the data (Lewis 2015). Policy documents provided governance structures to interpret the primary data analysis. The original policy search yielded 51 policy documents, with a secondary search, conducted in September 2021 producing a further 25 documents, primarily related to the publication of the final report of the Australian Royal Commission into Aged Care Quality and Safety (Commonwealth of Australia 2021). Thus, a total of 76 policy documents, grounded within the Australian aged care regulatory context, were used to interpret the scoping review findings.

Charting the Data

Data extraction was completed on the 137 included articles by two researchers independently via Covidence, to obtain quantitative data that was charted against country of research, publication year, methodology and setting in Tables 1 – 3. Extracted data was tabulated, and qualitative analysis was subsequently conducted. NVivo version 12 was used to chart and manage the data (QSR International Pty Ltd. 2018). Structure and agency related to mealtime practice was coded according to a deductive framework derived from the three memory trace domains (Giddens 1984), as inductive data coding only identified themes well represented in the literature.

The conventions of Braun and Clark (2006) were used to guide coding, categorising and theming. Familiarisation of the data began during full-text reviews. Initial codes were generated for all 137 articles, and sorted according to the three domains. Once codes were sorted into each domain, further fracturing of data allowed the codes to be categorised into smaller sub-themes (Braun and Clarke 2006). The research team refined themes and reviewed the data to establish rigour (Patton 2002). Cross-checking and fine-tuning of themes ensured that they were relevant and accurately coded under each domain (Appendix D). Codes derived from articles included in the secondary search were iteratively included in the deductive analysis using constant comparison to ensure the data was grounded in the themes. No new concepts were identified from the secondary analysis. Policy documents were analysed for references to mealtime practice, processes or outcomes, and these were used to interpret the themes.

Results

Quantitative Data

As demonstrated in Tables 1 and 2, the 137 included articles yielded literature prominently from Western countries, that were most frequently cross-sectional studies reflecting diverse methods and methodologies. All articles were published between 1975 and 2021. Categorisation according to decade of publication identified that 59.1% were published after 2011, 29.9% were published between 2001 – 2010, and 10.9% were published ≤2000. Only two included studies were published prior to 1990 (Benedict 1975, Kayser-Jones 1982).

The included articles used diverse terminology due to the different language that countries use to refer to RACFs, as demonstrated in Table 3, which charts the study settings. Full-text reviews confirmed that these terminologies were equivalent. Table 4 demonstrates the range of mealtime interventions and the research populations in the included literature.

Qualitative Data

Major themes derived from each domain are described in order of their prominence in the data, illustrated by quotes and article citations. Policy information was used to interpret the themes, and was most prominent in the Legitimation and Domination domains that are more reflective of organisational practices than the Signification domain that explored the meanings residents attribute to mealtimes.

Domain 1: Signification

Four themes were captured in the Signification domain that related to the residents' understandings and interpretations of RACF mealtimes and regulations.

Theme 1: Mealtime experience. The most prominent theme identified, mealtime experience reflected the meanings that residents ascribed to mealtimes. These meanings were unique, formed from combined factors related to each resident's experience. Factors included staff (Pelletier 2005, Caspar, Berg et al. 2020, Caspar, Davis et al. 2021); social interactions (Bennett, Ward et al. 2014, Shune and Linville 2019, Morrison-Koechl, Wu et al. 2021), personhood (Gastmans 1998, Reimer and Keller 2009), food service (Evans, Crogan et al. 2003) and environment (Kenkmann and Hooper 2012, Maluf, Cheater et al. 2020) that each shape their mealtime experiences.

Mealtimes contribute to the broader RACF social environment as meanings are formed through dining interactions with staff and other residents (Watkins, Goodwin et al. 2017). The literature often referred to mealtimes as opportunities for social interaction that are shaped by "interactive efforts to create an appropriate version of a meal situation" (Harnett and Jönsson 2017 p839). The mealtime meanings that residents construct are therefore influenced by how social interactions are facilitated. "The social element, meaning conversing with residents, sharing stories and feeling a sense of community, defined the meal for some residents" (Simon 2015 p35), and is associated with improved nutritional outcomes (Morrison-Koechl, Wu et al. 2021). Staff permit residents' capacity to engage in meaningful social interactions with others during mealtimes through actions that facilitate, or do not facilitate residents' preferences and meaningful socialisation (Shune and Linville 2019, Trinca, Chaudhury et al. 2021). Staff also perceive a "good meal" according to their own nutritional knowledge, training in mealtime management and personal beliefs and values (Pelletier 2005, Reimer and Keller 2009). Thus, staff understanding of mealtime purposes and processes, influence how a resident interprets and makes meaning from mealtimes.

"Staff interpreted mealtimes in different ways. In some care homes there was little staff interaction with residents observed other than delivering the meals to the tables or rooms." (Holmes 2019 p125)

Meal delivery methods and the dining environment also influence how residents interpret and understand mealtimes (Keller, Beck et al. 2015), including interventions targeting food production and meal delivery (Abbey 2015), modifications to the environment, mealtime ambience and food service (Evans and Crogan 2005, Byles, Perry et al. 2009, Chaudhury, Hung et al. 2013, Keller, Beck et al. 2015, Matwiejczyk, Roberts et al. 2018), and improving staff ratios and access to education (Kayser-Jones and Schell 1997, Simmons, Bertrand et al. 2007, Bertrand, Porchak et al. 2011, Stone 2014). Additionally, moulded TMDs may improve mealtime experiences for residents with dysphagia as meaning is enhanced when food is recognisable and describable (Ullrich, Buckley et al. 2014). Interventions that combine environmental modifications with staff education improve mealtime experiences with greater impact than changing the physical dining space alone (Perivolaris, Leclerc et al. 2006).

Theme 2: Meaning of mealtimes.

Residents bring life experiences to the RACF that inform their values and preferences. Residents with choice and control perceive mealtimes as more successful, as they can attend to their preferences about when, where and what to eat (Evans, Crogan et al. 2003). Opportunities and barriers for RACFs to promote independence and personalisation thus contribute to the mealtime meanings that residents construct (Caspar, Davis et al. 2021, Trinca, Chaudhury et al. 2021). However, when their mealtime preferences do not align with RACF processes, residents may experience feelings of powerlessness and lost autonomy.

"Mealtimes are important opportunities to support residents' personhood; a pleasurable dining experience affects residents' perception of well-being and is inextricably linked with their quality of life." (Chaudhury, Hung et al. 2013 p492)

Beyond nutrition, food is associated with meanings, traditions, memories and personhood, constructed across a lifetime of interactions and contexts, that shape residents' expectations of mealtimes in the RACF (Bernoth, Dietsch et al. 2014, Abbey 2015, Fjellström and Sydner 2017). For example, some residents see food as a symbol of security resulting from wartime austerity (Chou, Boldy et al. 2002). Their past experiences, social associations and food memories combine to structure mealtime expectations and meaning.

"Food provides more than just a way to meet the physical nutritional requirements of the body, but can also be associated with memory, social occasions, and emotions, and provide a source of enjoyment, socialisation, nurturing and dignity." (Milte, Shulver et al. 2017 p52)

Theme 3: Meaning of residential aged care. The literature briefly described how residents' mealtime experiences connect with their broader understanding of their residential care experience (Watkins 2018). A duality of structure exists, where a resident's interpretation of mealtimes influences their RACF experience; and residing in RACFs influences the meaning they assign to mealtimes experiences. Traditionally, RACFs follow a bio-medical model (Davis, Byers et al. 2009, Milte, Ratcliffe et al. 2018), but changing public expectations, evidence and the marketization of residential care have directed more RACFs to provide home-like environments (Hogden, Greenfield et al. 2017). However,, many RACFs continue to view residents as care-dependent consumers with structures that institutionalise residents' understanding of mealtimes, including mealtime schedules, menus and seating arrangements that privilege routine, standardisation and dependence (Abbey 2015, Fjellström and Sydner 2017, Maluf, Cheater et al. 2020).

"When a resident moves in they find the menu already set and organised and then have to adjust to being told when to eat, what meals are served and who they will be sharing a meal with in the dining room." (Abbey 2015 p36)

Acknowledging this shift from traditional biomedical approaches, the final report of the Royal Commission into Aged Care Quality and Safety (Commonwealth of Australia 2021) recommends future

policy that incentivises the use home-like residential care environments, and a regulatory focus on PCC practices, including mealtime practices. The final report also references the integral relationship between residents' perceptions of quality aged care and the quality of food, the dining experience, and the implications for those who lack choice and control (Commonwealth of Australia 2020, Commonwealth of Australia 2020).

Theme 4: Interpretation of regulations. Loose interpretation and different understandings of organisations and aged care accreditors about mealtime regulations were commonly reported. In the Australian context, the Australian Aged Care Quality Standards that provide the regulatory standards that all Australian RACFs comply with, operate on an outcome-based rather than process-oriented approach (Aged Care Quality and Safety Commission 2020, Commonwealth of Australia 2020). Outcomes for food and nutrition care are measured using 'unplanned weight loss' as a single measure. Similarly, regarding meal provision, the Standards state that "where meals are provided, they are varied and of suitable quantity and quality" (Aged Care Quality and Safety Commission 2020 Requirement 3f), however, outcome measures related to this standard are lacking.

Consequently, regulators and aged care providers are permitted to variably interpret the Standards (Abbey 2015). Whilst these are purported to "[provide] a mechanism by which stakeholders achieve minimum standards of quality" (Hogden, Greenfield et al. 2017 p140), individualised interpretations form signification structures for assessors, RACF staff and other stakeholders that influence how RACFs are rated, and how particular resident activities or care processes, such as mealtimes, are ranked for accreditation purposes. Similarly, how RACFs understand the intent of the Standards translates to the structures that guide how facilities manage and enact mealtimes, which ultimately impacts residents' experience and their own interpretation of mealtimes (Hogden, Greenfield et al. 2017).

Domain 2: Legitimation

The domain of legitimation captured four themes that identified the rules, processes and routines that produce structures to guide a resident's mealtime experience.

Theme 1: Care approaches. Care approaches in RACFs set expectations and procedures that form legitimation structures that guide the resident's mealtime experience. PCC approaches (Hogden, Greenfield et al. 2017, Holmes 2019, Jones and Ismail 2019, Caspar, Berg et al. 2020), or a social model of care (Henkusens, Keller et al. 2014) guide mealtime processes that "[provide] choices and preferences, supporting independence, showing respect and promoting social interaction" (Reimer and Keller 2009 p327).

"*In recent years, the model for long-term care settings has gone through a major paradigm shift from the traditional institutional, medical environment to more interactive communities that focus on quality of life, individual choice, and a more person-centered, home-like culture*." (Dorner 2010 p1556)

Where RACFs operate under a biomedical model of care that lacks incorporation of PCC, staff may adopt a care approach that is more task-oriented than resident-focused, which impacts the mealtime experience (Watkins, Goodwin et al. 2019). Ultimately, the approach adopted by RACFs form structures that guide how mealtime care is enacted.

Theme 2: Norms and routines. Mealtimes in RACFs legitimise structures related to time, place, social interactions and normality each day (Bundgaard 2005, Philpin, Merrell et al. 2014). Mealtimes provide staff with an action repertoire that also form social rituals (Harnett and Jönsson 2017). For staff and residents, the daily routine of mealtimes often follows "an institutional script with established roles and a sequential order of action" (Harnett and Jönsson 2017 p839), involving set timings, predetermined menus and designated resident seating (Henkusens, Keller et al. 2014, Maluf, Cheater et al. 2020). However, these routines provide a sense of normality and structure to the day that also benefits resident health (Bundgaard 2005, Simon 2015). For example, saying grace is associated with initiating mealtimes (Ullrich, Buckley et al. 2014). Regular set menus are reported to be "imprinted into the olfactory memory" (Wang, Everett et al. 2020 p630) of residents and their meal choices reflect comfort in familiarity and routine.

Similarly, residents' rules and routines enacted whilst sharing food, space, company and interactions contribute to RACF mealtime structures (Palacios-Ceña, Losa-Iglesias et al. 2013). For example, when residents deviate from the 'code of conduct' that directs the rules of their table, they may face admonishment from others (Milte, Shulver et al. 2017). Conversely, conventions and manners are part of proxemic behaviour that facilitate residents with dementia to participate in mealtimes (Curtis 2008). Through mealtime habits and routines, residents can make sense of the broader experience of living in RACFs (Roberts 2011, Maluf, Cheater et al. 2020). These mealtime norms and routines provide structure for the daily activities for residents (Philpin, Merrell et al. 2014).

Theme 3: Best practice. In RACFs best practice is grounded in the evidence for PCC, which informs practice guidelines and norms that form legitimation structures (Bailey, Bailey et al. 2017). The literature identified some evidence supporting the assessment of mealtime needs, interventions and strategies. The FoodEx-LTC assessment tool successfully identified and incorporated resident perspectives in mealtime service delivery (Evans and Crogan 2005). Assessments including the *Dining Environment Assessment Protocol* (Chaudhury, Keller et al. 2017) for evaluating the physical environment and *Making the Most of Mealtimes* framework (Keller, Carrier et al. 2017) assist to develop and evaluate best practice mealtime interventions. Best practice assessment also requires multidisciplinary team input to develop appropriate care plans that generate new mealtime rules (Bennett, Ward et al. 2015). Additionally, open and regular communication with residents provide staff direct feedback and gauge resident expectations and experiences of meals (Wang, Everett et al. 2020).

Best practice menu guidelines for resident nutrition have been developed in Australia, but these are not mandated, and do not provide guidance about improving mealtime experiences (Williams 2012, Abbey 2015). For example, whilst studies have recommended policy that protects mealtimes and deters non-

mealtime related tasks during meals (Ullman 2009, Ullrich, Buckley et al. 2014), these are not policy measures. A submission to *The Productivity Commission Public Inquiry into the Care of Older Australians* recommended best practice guidelines to inform organisational processes and funding to improve RACF mealtimes (Wilson, Wright et al. 2010, Productivity Commission 2011), and similar recommendations are provided in the Final report of the Royal Commission into Aged Care Quality and Safety (Commonwealth of Australia 2021). Best practice recommendations form benchmarks that should set legitimation structures that underpin RACF mealtime practices, routines and actions.

Theme 4: Policies and regulations. Policies and regulations form legitimation structures that set norms for mealtime processes and routines for staff and residents but differ between and within countries. This review most prominently derived policy guiding mealtimes from the Aged Care Quality Standards, which contain regulatory standards related to nutrition and hydration, choice and decision making, and catering, cleaning and laundry services (Aged Care Quality and Safety Commission 2020, Aged Care Quality and Safety Commission 2020), but do not directly reference or measure quality mealtime practices (Wang, Everett et al. 2018).

Global regulations that direct minimum staff qualifications and care hours are lacking (Abbey 2015), and there are not standardised protocols or guidelines for feeding assistance, despite the relationship between eating dependency, malnutrition and complications of dysphagia (Milte, Shulver et al. 2017). Local organisational policies that govern the budget for food, staffing and time allocated for eating, vary between organisations (Lowndes, Daly et al. 2018, Wang, Everett et al. 2020). These rules and regulations direct local management and organisation of mealtimes, forming legitimation structures that translate to the practices that staff and residents enact during mealtime routines.

Domain 3: Domination

The four themes identified in the Domination domain related to power and resources individuals use to accomplish mealtime actions. These themes reflected resident, staff, organisational and government power over mealtimes.

Theme 1: Resident power. RACFs contain domination structures that often limit the power of residents to enact control over mealtimes, and position power with the staff and institution. For example, residents lose some independence and control on entry to an RACF, including reduced access to familiar foods (Abbey 2015, Wang, Everett et al. 2020). Residents value opportunities to exercise agency and have autonomy over preferred foods, location and timing of meals, and tablemates (Bailey, Bailey et al. 2017), and to participate in preparing food (Grøndahl and Aagaard 2016).

"When asked to rate the importance of control and choice over certain areas of their everyday life in a home, residents prioritised having choice over their foods as the most important." (Abbey, Wright et al. 2015 p7581)

However, paternalistic mealtime care approaches create domination structures that result in fewer opportunities for residents to make routine or participatory decisions (Schell and Kayser-Jones 1999, Henkusens, Keller et al. 2014), and residents are almost entirely dependent on the facility for nourishment (Hotaling 1990, Evans, Crogan et al. 2003). Many residents are also aware of government policies and RACF processes that direct the extent of their choice and control at mealtimes (Evans and Crogan 2005), and feel resigned to having limited control (Watkins, Goodwin et al. 2017), or are less inclined to raise concerns for fear of retribution (Pearson, Fitzgerald et al. 2003, Reimer and Keller 2009). This pertains particularly to dependent residents, such as those with cognitive impairment or dysphagia, where domination structures related to care further compromise control and dignity over mealtime situations, routines and practices (Grøndahl and Aagaard 2016, Milte, Shulver et al. 2017, Ballesteros-Pomar, Cherubini et al. 2020).

Theme 2: Staff power. RACF staff, including nurses, nursing assistants, dietitians, speech-language pathologists, occupational therapists and general practitioners, are directly involved in mealtime management and their interventions influence the extent that residents can exert power (Bennett, Ward et al. 2015). Staff responsibilities that include offering support to residents, fostering independence, facilitating social interactions and creating opportunities for residents to exercise autonomy can positively influence mealtime experiences (Barnes, Wasielewska et al. 2013, Holmes 2019). Whilst RACF staff have reported having little control in how RACFs operate (Gibson and Barsade 2003), when they are empowered and "invested, aware, and knowledgeable, residents… have more individualised and ultimately, successful experiences" (Shune and Linville 2019 p149). Shifting power from staff to resident requires staff access to quality education and training and organisational resources that sanction practices that enable residents to enact autonomy during mealtimes (Keller, Wu et al. 2021).

Theme 3: Organisational powers. How RACFs allocate and manage resources for mealtimes affects resident agency, mealtime culture and experience (Watkins, Goodwin et al. 2017). This includes fiscal and staffing constraints, such as food budget, staff workload and education (Beattie, O'Reilly et al. 2014, Lowndes, Daly et al. 2018, Matwiejczyk, Roberts et al. 2018). Resource allocation strategies that relate to poor-quality mealtime experiences for residents include staff attending to non-meal tasks during mealtimes, foodservice time limitations, and cost containment schemes such as menu cycling (Lowndes, Daly et al. 2018, Wang, Everett et al. 2018). Local organisational policy further impacts on mealtime experience as this directs how the dining environment is physically managed (Bundgaard 2005). RACFs report difficulty in balancing residents' individual needs with organisational constraints and often prioritise the organisation's needs (Bailey, Bailey et al. 2017). Consequently, these organisational structures can impact how residents can access positive mealtimes.

Organisational support structures may enable staff to build knowledge and learn together to implement best practice and new ideas, but hierarchical staffing structures also pose barriers to staff who have ideas for improvement (Lea, Goldberg et al. 2017). Organisational processes inform whether PCC is prioritised (Keller, Wu et al. 2021), and how staff enact teamwork to manage mealtimes (Byles, Perry et al. 2009), but a lack of clarity about RACF responsibilities to enact best practice has increased

recommendations for multidisciplinary mealtime management to be explicitly regulated (Hotaling 1990, Bennett, Ward et al. 2014, Holmes 2019). Thus, RACF organisational and resource allocation strategies generate domination structures related to the rules, procedures and routines that are enacted during mealtimes that impact residents' ability to exert power and control.

Theme 4: Government and regulatory powers. Cultural, political and economic contexts influence professional knowledge and theories on ageing which affect how RACFs are organised (Bundgaard 2005). Governments serve as regulatory bodies to organise aged care provision by mandating regulatory policies that are tied to government funding for providers (e.g. Australian Government 2018, Aged Care Quality and Safety Commission 2020). As such, through funding linked with compliance requirements, governments generate domination structures that direct the implementation of care and daily activity routines according to their priorities for funding and outcomes. However, Australian aged care policy contains no standards related to foodservice provision, mealtime quality, care or practice. There lack compliance measures that generate domination structures for minimum quality mealtime practices that would directly impact residents' mealtime experiences (Commonwealth of Australia 2021).

Discussion

This scoping review intended to identify the structures that surround and inform the mealtime experiences of RACF residents, using the Australian aged care policy context to illustrate this. The Structuration theory (Giddens 1984) domains of signification, legitimation and domination were used as a deductive framework, and the themes identified related to how structures facilitate and also bound the residents' mealtime experience. Data analysis captured meanings of mealtimes, norms and traditions that inform mealtime routines and practices, regulatory and governance structures, and levels of control that residents, staff, organisations and governments have at RACF mealtimes.

This study verified that RACFs lack specific policy and regulatory structures to direct mealtime practice. The initial database searches yielded few results addressing mealtime policies and regulations, despite finding that the amount of research addressing RACF mealtime practice has substantially increased in the past decade. Existing governance and regulatory structures are more prominently directed to supporting people to select facilities, and setting general expectations of services (Aged Care Quality and Safety Commission 2020, Aged Care Quality and Safety Commission 2020, Aged Care Quality and Safety Commission 2020, Aged Care Quality and Safety Commission 2020). In Australian policy, no regulatory structure exists to direct how facilities enact mealtimes or food service despite the centrality of eating in residential life (Aselage, Amella et al. 2011, Commonwealth of Australia 2021). Food service practices related to menu planning, food preparation, hygiene and delivery standards, staffing requirements and time allocated for mealtimes are often locally determined and vary across institutions (Ullman 2009, Abbey 2015, Lowndes, Daly et al. 2018, Wang, Everett et al. 2020). Domination structures set by organisations, including staff workload, time and resource pressures often legitimise task-oriented and mechanistic mealtime structures (Morris, Declercq et al. 2018, Holmes 2019). This is exacerbated when staff must reconcile resident capacity to participate in mealtimes, and encourage their autonomy and

independence, while maintaining work and resource efficiencies, and manage accreditation and regulatory requirements (Crack and Crack 2007, Wilson, Wright et al. 2010, Fjellström and Sydner 2017, Holmes 2019). Consequently, staff adaptive strategies often focus on adhering to care and compliance structures, i.e. what governance and organisations allow or not, which can impede PCC (Fjellström and Sydner 2017).

These structures create cognitive boundaries that limit how residents understand and experience meals, direct how mealtime practice norms and routines develop and become recursive, and inform the roles of residents and staff in enacting mealtimes according to organisational requirements (Giddens 1984). Thus, structures that direct mealtime rules, routines and practices can also reduce the power of residents to enact control and autonomy (Reimer and Keller 2009, Anderson and Blair 2021). Furthermore, mealtime rules and practices lack transparency for residents, who are rarely consulted about foodservice processes (West, Ouellet et al. 2003). Thus, residents' expectations of choice and control at mealtimes are not coherent with institutional processes that regulate mealtime practices and risk (Wang, Everett et al. 2020). Collaborating to foster a common understanding of good mealtimes across residents, staff and policy makers will facilitate signification structures that improve RACF mealtime experiences.

The absence of minimum quality regulation creates mealtime compliance issues that are particularly impactful for vulnerable populations, such as those with dysphagia or cognitive impairment, who are also more likely to depend on staff to facilitate nutrition and care outcomes (Bamford, Heaven et al. 2012, Miles, Liang et al. 2020). International guidelines exist to legitimise and standardise nutritional and swallowing practices for elderly populations, but these are inconsistently applied in RACFs. For example the *International Dysphagia Diet Standardisation Initiative* provides signification structures that give common and agreed terminology and standardisation for TMDs to reduce opportunities for error in meal preparation (International Dysphagia Diet Standardisation Initiative 2020). Similarly, expertise brought by professional staff supports residents and improves mealtimes. For example, dietitians who are involved in foodservice to residents and staff facilitate new mealtime signification structures by fostering understandings of nutrition that improve mealtime practice. However, access to professional expertise is not enshrined in policy, and compliance measures related to these professional services do not relate to quality outcomes (Aged Care Quality and Safety Commission 2019). Bennett and colleagues (2014) contend that mealtime management must be multidisciplinary and consistent with PCC to align service provision with best practice in aged care (Bennett, Ward et al. 2014). For this change to occur, adjustments to signification, legitimation and domination structures that direct RACF mealtimes are necessary, and must be informed by engagement and collaboration from all mealtime stakeholders.

Implementing person-centred mealtime practice

Australian aged care policy remains silent about the separate concepts of nutrition and PCC that constitute best practice mealtimes, and has not brought these together. Conversely, whilst regulations are necessary to assure minimum quality of care, they may also impede choice and control if they hinder residents' capacity for individualised care (Cohen-Mansfield, Werner et al. 1995, Gilbart 2005). For

example, residents may not be permitted to consume foods of choice when RACFs generate menus with specified foods to meet regulatory nutritional monitoring targets (Watkins, Goodwin et al. 2017). It is important then that the intended and unintended consequences of policy directives to legitimise improved mealtime practices are carefully scrutinised.

Quality is currently measured through technical outcomes, and in Australian policy, 'unexpected weight loss' remains a proxy measure used to infer all outcomes that relate to food, mealtimes and nutrition (Aged Care Quality and Safety Commission 2019). Whilst increasing acknowledgement of consumer concerns about their rights to choice, control, and quality aged care has underpinned recent investigations into Australian aged care service provision (Commonwealth of Australia 2021), best practice in mealtime care has not yet been transformed into policy, including in recent updates of the Standards (Aged Care Quality and Safety Commission 2020). Without policy based drivers, organisational structures that legitimise current mealtime practices that do not prioritise PCC are likely to continue, as these have reproduced recursive mealtime structures despite the substantial evidence that identifies mealtime person-centred practice as integral to positive resident outcomes.

This study identified inconsistent application of terminology and models of care in RACFs. These generate signification structures that situate different understandings and interpretations of how care is enacted that translate to legitimation and domination structures for mealtime practice. For example, the use of 'homes' instead of 'facility' or 'institution' connotes a social, rather than medical interpretation of care (Cohen-Mansfield, Werner et al. 1995). Whilst the 'medical model' with underlying values of individualism and reductionism legitimises structures that position care recipients as 'objects' who receive decisions made by professionals on their behalf, PCC models identify care recipients as 'subjects' with capabilities to make their own decisions (Gibson and Barsade 2003, Sydner and Fjellström 2005, Wu, Morrison et al. 2018). However, Sydner & Fjellström (2005) argued that viewing older people through a dichotomous lens as either "subjects" or "objects" is problematic, as individuals should be able to enact choice related to services, with appropriate staff support (Sydner and Fjellström 2005). In the context of mealtime practice structures, this dualistic perspective infers that residents' capacity for agency to enact choices about menu, seating, social and environmental preferences, can be supported by policy, organisational and staff structures that respond to their needs and capabilities.

Legitimation structures that guide routinized mealtime activities and practices help to explain that the challenges confronting RACFs to incorporate PCC are greater than the policy and funding adjustments needed to set quality expectations. In RACFs, a paradoxical situation exists where routine culture is used and reproduced by both staff and residents in mutual compliance with norms and routines (Harnett 2010, Maluf, Cheater et al. 2020). For example, staff and resident compliance to a mandated meal time and location reinforces this practice as a norm which becomes recursive when unchallenged. When new approaches to care are introduced, staff and residents must adjust from existing norms and routines. This requires conscious engagement to interpret how new structures differ to previous routines and practice, and effort to understand and enact these outcomes. Whilst it is plausible to change care models

and routines, in reality, the slow pace of change evidenced in the literature suggests that these practice and cultural changes require governance endorsement and effort from all stakeholders.

Gibson & Barsade (2003) outlined a framework for RACFs to implement culture change that supports PCC: Organisations must firstly develop an understanding of good mealtimes and critically compare this with current practice to generate new meanings. These new signification structures underpin goals, actions and outcomes, including setting parameters and quality indicators of successful and person-centred mealtimes. Strong leadership is needed to intentionally align internal structures, systems and policies with person-centred mealtimes, and develop governance structures that empower residents and staff to reflexively monitor mealtime practices, and modify structures to afford best practice outcomes (Giddens 1984, Hung, Chaudhury et al. 2016, Watkins, Goodwin et al. 2019). For example, policy adjustments to enable staffing, meal delivery and foodservice systems, or to flatten organisational structures may be required to legitimise staff to respond effectively to residents during mealtimes. The enactment of this framework enables the structures that direct mealtimes to be modified, and facilitates person-centred practices that relate to “good mealtimes” to become routinized and normalised.

Limitations

Structuration Theory is most often applied as a practice theory to explore the activities that unfold, are produced and then become reproduced within a particular social context (Giddens 1984). Whilst the notion of a scoping review suggests a context-free analysis, this review was situated within the policy and governance frameworks of the Australian aged-care context. Thus, in respect to literature constructed and gathered from a broad global context, Structuration theory provided a framework to examine how the Australian policy context generates and reproduces RACF mealtime practices. We acknowledge that in using the Australian policy context as a lens to explore mealtime practices, we have assumed both that international evidence gathered and analysed through the scoping review framework is or could be applied in the situation of Australian RACFs; and that social practices, which are known to be contextually bound, are similar across Australian RACFs. However, this does not attend to the broad range of RACF settings, even within Australia, which vary according to local sociodemographic, geographical, cultural and funding factors (Commonwealth of Australia 2021); and these assumptions are limitations of this study.

The use of Structuration Theory as a framework to explore how the Australian policy and governance context impacts mealtime practices in RACFs is, in itself, limiting, as the analysis is blind to concepts that are absent from the theory. For example, whilst this study explored notions of residents and staff as agents who operate within mealtime practice structures, it did not explore the social or cultural capital that individuals bring to their agency (Bourdieu 1986)(Bourdieu and Richardson, 1986), which may be an important lever of mealtime practice and outcomes that alternative theoretical framing may open up.

As this study was limited to the Australian policy and governance context, it is not known if recommendations from this study can be generalised to the international context as this review identified

that structures, policy and terminology that reflect aged care practices vary globally. The literature included in this review was strongly grounded in Western countries, and the structures that guide meaning-making, and are legitimised and sanctioned in these contexts may not translate to broader global contexts. This prompts the need for future research exploring global RACF mealtime contexts and how “good mealtimes” translate for ethnically, culturally and geographically diverse residents. However, this study provides a useful case study about how structures generated by policy and governance procedures in an Australian context directly and indirectly affect the mealtime experience of RACF residents.

Conclusion

This scoping review used Structuration Theory (Giddens 1984) as an interpretative lens to investigate how policies and regulatory guidelines translate into practice during mealtimes in RACFs. Data analysis identified structures that direct mealtime experiences for residents, examined the relationship between these structures and the resulting actions of residents and staff, and how these actions are informed by government regulations and organisational policy and procedures.

Current policy lacks specificity and is limited in informing structures and practices of RACF mealtimes. These inadequate regulatory and funding structures do not provide sufficient guidance to facilitate quality, person-centred mealtime experiences for RACF residents, despite this approach being best practice. Furthermore, residents, staff and policy-makers possess different signification, legitimation and domination structures that guide the meaning and practice of meals, and this lack of shared understanding is likely to negatively impact the residents’ mealtime experience. This is perpetuated by domination structures that guide mealtime resource allocation and staff structures, and these direct the capacity and accountability for person-centred mealtime practices. Organisational and cultural changes are required to align service provision with PCC, facilitate shared understanding, and translate these into positive practice changes that improve residents’ mealtime experiences, and ultimately their QoL.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analysed during this study are included in this published article (and supplementary information files).

Competing interests

The authors declare that they have no competing interests.

Funding

This study was not funded beyond the usual academic roles of authors 2 and 3.

Authors' contributions

GK conducted the primary review, including the quantitative and qualitative data charting and analysis. AT conducted the secondary review including the quantitative and qualitative data charting and analysis. SA designed and provided oversight of the study. SA contributed to data analysis and interpretation for the primary and secondary reviews and wrote the manuscript. All authors contributed to drafting and reviewing the manuscript and approved the final version.

Acknowledgements

Not applicable.

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Tables

Table 1: Countries of study

COUNTRIES	NUMBER OF STUDIES	CITATIONS
USA	39	(Benedict 1975, Hotaling 1990, Alibrio 1991, Minniear 1993, Cohen-Mansfield, Werner et al. 1995, Phillips and Van Ort 1995, Kayser-Jones and Schell 1997, Kayser-Jones and Schell 1997, Aziz and Campbell-Taylor 1999, Schell and Kayser-Jones 1999, Buelow and Fee 2000, Escott-Stump, Krauss et al. 2000, Crogan and Evans 2001, Crogan, Shultz et al. 2001, Dimant 2001, Evans, Crogan et al. 2003, Gibson and Barsade 2003, Castellanos 2004, Evans, Crogan et al. 2004, Remsburg 2004, Evans and Crogan 2005, Evans, Crogan et al. 2005, Simmons and Levy-Storms 2006, Andreoli 2007, Sikorska-Simmons 2007, Simmons 2007, Simmons, Bertrand et al. 2007, Mikula and Vanaman 2008, Wu and Barker 2008, Dorner 2010, McDonnell 2010, Bertrand, Porchak et al. 2011, Roberts 2011, Adams, Anderson et al. 2013, Bellomy 2014, Bowers 2014, Mahadevan, Hartwell et al. 2014, Simon 2015, Shune and Linville 2019)
Australia	29	(Chou, Boldy et al. 2002, Pearson, Fitzgerald et al. 2003, Roder-Allen, Willick et al. 2003, Crack and Crack 2007, Curtis 2008, Byles, Perry et al. 2009, Davis, Byers et al. 2009, Wilson, Wright et al. 2010, Ullrich, McCutcheon et al. 2011, Beattie, O'Reilly et al. 2014, Belardi 2014, Bennett, Ward et al. 2014, Bernoth, Dietsch et al. 2014, Ullrich, Buckley et al. 2014, Abbey 2015, Abbey, Wright et al. 2015, Bennett, Ward et al. 2015, Agarwal, Marshall et al. 2016, Bailey, Bailey et al. 2017, Hogden, Greenfield et al. 2017, Lea, Goldberg et al. 2017, Milte, Shulver et al. 2017, Matwiejczyk, Roberts et al. 2018, Milte, Bradley et al. 2018, Milte, Ratcliffe et al. 2018, Vivanti 2018, Murray and Hopf 2020, Wang, Everett et al. 2020, Anderson and Blair 2021)
Canada	22	(Steele, Greenwood et al. 1997, West, Ouellet et al. 2003, Lengyel, Smith et al. 2004, Gibbs-Ward and Keller 2005, Gilbart 2005, Carrier, West et al. 2009, Hung and Chaudhury 2011, Way 2011, Henkusens, Keller et al. 2014, Wu 2015, Hung, Chaudhury et al. 2016, Chaudhury, Hung et al. 2017, Chaudhury, Keller et al. 2017, Keller, Carrier et al. 2017, Keller, Carrier et al. 2017, Watkins 2018, Wu, Morrison et al. 2018, Caspar, Berg et al. 2020, Caspar, Davis et al. 2021, Keller, Wu et al. 2021)
Mixed	16	(Kayser-Jones 1982, Reimer and Keller 2009, Hines, McCrow et al. 2010, Aselage, Amella et al. 2011, Williams 2012, Chaudhury, Hung et al. 2013, Vucea, Keller et al. 2014, Keller, Beck et al. 2015, Anderson, Bird et al. 2016, Keller, Carrier et al. 2017, Watkins, Goodwin et al. 2017, Lowndes, Daly et al. 2018, Morris, Declercq et al. 2018, Wang, Everett et al. 2018, Fetherstonhaugh, Haesler et al. 2019, Ballesteros-Pomar, Cherubini et al. 2020)
United Kingdom	12	(Ullman 2009, Bamford, Heaven et al. 2012, Barnes, Wasielewska et al. 2013, Philpin, Merrell et al. 2014, Stone 2014, Murphy, Holmes et al. 2017, Watkins, Goodwin et al. 2017, Watkins 2018, Holmes 2019, Jones and Ismail 2019, Watkins, Goodwin et al. 2019, Maluf, Cheater et al. 2020)
European Union	12	(Gastmans 1998, Bundgaard 2005, Sydner and Fjellström 2005, Harnett 2010, Baur and Abma 2012, Palacios-Ceña, Losa-Iglesias et al. 2013, Grøndahl and Aagaard 2016, Fjellström and Sydner 2017, Harnett and Jönsson 2017, Westerberg, Hjelte et al. 2017, Palese, Bressan et al. 2018, De Wit 2020)
New Zealand	4	(CHISHOLM, JENSEN et al. 2011, Nell, Neville et al. 2016, Miles, Dennison et al. 2019, Miles, Liang et al. 2020)

Taiwan	1	(Chang and Roberts 2008)
Japan	1	(Annear, Otani et al. 2016)
Korea	1	(Park, Lee et al. 2021)
TOTAL	**137**	

Table 2: Study methods and methodologies

DESIGN	NUMBER OF STUDIES	CITATIONS
Cross-sectional Study	55	(Kayser-Jones 1982, Cohen-Mansfield, Werner et al. 1995, Kayser-Jones and Schell 1997, Kayser-Jones and Schell 1997, Schell and Kayser-Jones 1999, Crogan and Evans 2001, Chou, Boldy et al. 2002, Evans, Crogan et al. 2003, Pearson, Fitzgerald et al. 2003, West, Ouellet et al. 2003, Evans, Crogan et al. 2004, Lengyel, Smith et al. 2004, Remsburg 2004, Bundgaard 2005, Evans, Crogan et al. 2005, Sydner and Fjellström 2005, Simmons and Levy-Storms 2006, Simmons 2007, Simmons, Bertrand et al. 2007, Chang and Roberts 2008, Wu and Barker 2008, Harnett 2010, CHISHOLM, JENSEN et al. 2011, Hung and Chaudhury 2011, Ullrich, McCutcheon et al. 2011, Way 2011, Adams, Anderson et al. 2013, Palacios-Ceña, Losa-Iglesias et al. 2013, Beattie, O'Reilly et al. 2014, Bernoth, Dietsch et al. 2014, Mahadevan, Hartwell et al. 2014, Philpin, Merrell et al. 2014, Simon 2015, Grøndahl and Aagaard 2016, Nell, Neville et al. 2016, Bailey, Bailey et al. 2017, Harnett and Jönsson 2017, Hogden, Greenfield et al. 2017, Keller, Carrier et al. 2017, Lea, Goldberg et al. 2017, Milte, Shulver et al. 2017, Murphy, Holmes et al. 2017, Westerberg, Hjelte et al. 2017, Milte, Bradley et al. 2018, Milte, Ratcliffe et al. 2018, Morris, Declercq et al. 2018, Palese, Bressan et al. 2018, Watkins 2018, Holmes 2019, De Wit 2020, Wang, Everett et al. 2020, Keller, Wu et al. 2021, Morrison-Koechl, Wu et al. 2021, Park, Lee et al. 2021, Trinca, Chaudhury et al. 2021)
Retrospective Cohort Study	28	(Steele, Greenwood et al. 1997, Buelow and Fee 2000, Evans and Crogan 2005, Gibbs-Ward and Keller 2005, Gilbart 2005, Perivolaris, Leclerc et al. 2006, Sikorska-Simmons 2007, Carrier, West et al. 2009, Bertrand, Porchak et al. 2011, Bamford, Heaven et al. 2012, Bennett, Ward et al. 2014, Henkusens, Keller et al. 2014, Abbey 2015, Abbey, Wright et al. 2015, Bennett, Ward et al. 2015, Hung, Chaudhury et al. 2016, Chaudhury, Hung et al. 2017, Chaudhury, Keller et al. 2017, Watkins, Goodwin et al. 2017, Lowndes, Daly et al. 2018, Matwiejczyk, Roberts et al. 2018, Wu, Morrison et al. 2018, Miles, Dennison et al. 2019, Shune and Linville 2019, Watkins, Goodwin et al. 2019, Caspar, Berg et al. 2020, Miles, Liang et al. 2020, Caspar, Davis et al. 2021)
Literature Review	15	(Hotaling 1990, Phillips and Van Ort 1995, Dimant 2001, Gibson and Barsade 2003, Roder-Allen, Willick et al. 2003, Castellanos 2004, Simmons, Bertrand et al. 2007, Davis, Byers et al. 2009, Reimer and Keller 2009, Dorner 2010, Aselage, Amella et al. 2011, Chaudhury, Hung et al. 2013, Bellomy 2014, Agarwal, Marshall et al. 2016, Keller, Carrier et al. 2017)
Commentary	11	(Alibrio 1991, Minniear 1993, Escott-Stump, Krauss et al. 2000, Crogan, Shultz et al. 2001, Curtis 2008, Mikula and Vanaman 2008, Ullman 2009, Belardi 2014, Bowers 2014, Stone 2014, Vivanti 2018)
Systematic Review	5	(Hines, McCrow et al. 2010, Anderson, Bird et al. 2016, Watkins, Goodwin et al. 2017, Fetherstonhaugh, Haesler et al. 2019, Murray and Hopf 2020)
Case Study	5	(Crack and Crack 2007, McDonnell 2010, Roberts 2011, Keller, Beck et al. 2015, Jones and Ismail 2019)
Ecological Study	3	(Aziz and Campbell-Taylor 1999, Barnes, Wasielewska et al. 2013, Annear, Otani et al. 2016)

Action Research	3	(Byles, Perry et al. 2009, Baur and Abma 2012, Ullrich, Buckley et al. 2014)
Evaluation	1	(Benedict 1975)
Government Inquiry	1	(Wilson, Wright et al. 2010)
Integrative Review	1	(Wang, Everett et al. 2018)
Project Report	1	(Williams 2012)
Book Chapter	1	(Fjellström and Sydner 2017)
Ethical Appraisal	1	(Gastmans 1998)
Scoping Review	1	(Vucea, Keller et al. 2014)
Case-control Study	1	(Andreoli 2007)
Expert Review	1	(Ballesteros-Pomar, Cherubini et al. 2020)
Observational longitudinal study	1	(Anderson and Blair 2021)
Qualitative interviews	2	(Pelletier 2005, Maluf, Cheater et al. 2020)
TOTAL	**137**	

Table 3: Study settings demonstrating RACF terminology

SETTING	NUMBER OF STUDIES	CITATIONS
Nursing Home	39	(Kayser-Jones 1982, Alibrio 1991, Minniear 1993, Cohen-Mansfield, Werner et al. 1995, Kayser-Jones and Schell 1997, Gastmans 1998, Crogan and Evans 2001, Crogan, Shultz et al. 2001, Dimant 2001, Evans, Crogan et al. 2003, Pearson, Fitzgerald et al. 2003, Castellanos 2004, Evans and Crogan 2005, Sydner and Fjellström 2005, Simmons and Levy-Storms 2006, Andreoli 2007, Simmons 2007, Simmons, Bertrand et al. 2007, Chang and Roberts 2008, Mikula and Vanaman 2008, Wu and Barker 2008, Carrier, West et al. 2009, Reimer and Keller 2009, Harnett 2010, McDonnell 2010, Aselage, Amella et al. 2011, Bertrand, Porchak et al. 2011, Palacios-Ceña, Losa-Iglesias et al. 2013, Bellomy 2014, Grøndahl and Aagaard 2016, Harnett and Jönsson 2017, Milte, Shulver et al. 2017, Murphy, Holmes et al. 2017, Palese, Bressan et al. 2018, Ballesteros-Pomar, Cherubini et al. 2020, De Wit 2020, Maluf, Cheater et al. 2020, Park, Lee et al. 2021)
Nursing Centre	1	(Bundgaard 2005)
Skilled Nursing Facility (SNF)	4	(Benedict 1975, Evans, Crogan et al. 2004, Adams, Anderson et al. 2013, Bowers 2014)
Care Home	10	(Ullman 2009, Barnes, Wasielewska et al. 2013, Stone 2014, Ullrich, Buckley et al. 2014, Lea, Goldberg et al. 2017, Watkins, Goodwin et al. 2017, Watkins 2018, Holmes 2019, Jones and Ismail 2019, Watkins, Goodwin et al. 2019)
Care Facility	3	(Shune and Linville 2019, Murray and Hopf 2020, Anderson and Blair 2021)
Aged Care	7	(Wilson, Wright et al. 2010, Ullrich, McCutcheon et al. 2011, Belardi 2014, Annear, Otani et al. 2016, Matwiejczyk, Roberts et al. 2018, Milte, Ratcliffe et al. 2018, Vivanti 2018)
Aged Home	1	(Steele, Greenwood et al. 1997)
Residential Aged Care (RAC)	21	(Chou, Boldy et al. 2002, Crack and Crack 2007, Byles, Perry et al. 2009, Hines, McCrow et al. 2010, CHISHOLM, JENSEN et al. 2011, Williams 2012, Bennett, Ward et al. 2014, Bernoth, Dietsch et al. 2014, Abbey 2015, Abbey, Wright et al. 2015, Bennett, Ward et al. 2015, Agarwal, Marshall et al. 2016, Nell, Neville et al. 2016, Bailey, Bailey et al. 2017, Hogden, Greenfield et al. 2017, Milte, Bradley et al. 2018, Wang, Everett et al. 2018, Fetherstonhaugh, Haesler et al. 2019, Miles, Dennison et al. 2019, Miles, Liang et al. 2020, Wang, Everett et al. 2020)
Residential Care	10	(Roder-Allen, Willick et al. 2003, Curtis 2008, Davis, Byers et al. 2009, Bamford, Heaven et al. 2012, Beattie, O'Reilly et al. 2014, Philpin, Merrell et al. 2014, Watkins, Goodwin et al. 2017, Westerberg, Hjelte et al. 2017, Maluf, Cheater et al. 2020, Caspar, Davis et al. 2021)
Residential Home	1	(Baur and Abma 2012)
Residential Facilities	1	(Anderson, Bird et al. 2016)

Long-term Care	32	(Hotaling 1990, Phillips and Van Ort 1995, Kayser-Jones and Schell 1997, Aziz and Campbell-Taylor 1999, Schell and Kayser-Jones 1999, Gibson and Barsade 2003, West, Ouellet et al. 2003, Lengyel, Smith et al. 2004, Remsburg 2004, Gibbs-Ward and Keller 2005, Gilbart 2005, Perivolaris, Leclerc et al. 2006, Hung and Chaudhury 2011, Roberts 2011, Way 2011, Chaudhury, Hung et al. 2013, Vucea, Keller et al. 2014, Keller, Beck et al. 2015, Wu 2015, Hung, Chaudhury et al. 2016, Chaudhury, Hung et al. 2017, Chaudhury, Keller et al. 2017, Keller, Carrier et al. 2017, Keller, Carrier et al. 2017, Lowndes, Daly et al. 2018, Morris, Declercq et al. 2018, Wu, Morrison et al. 2018, Caspar, Berg et al. 2020, Keller, Wu et al. 2021, Morrison-Koechl, Wu et al. 2021, Trinca, Chaudhury et al. 2021)
Assisted Living	4	(Buelow and Fee 2000, Sikorska-Simmons 2007, Mahadevan, Hartwell et al. 2014, Simon 2015)
Healthcare Organisations	1	(Escott-Stump, Krauss et al. 2000)
Health Care Communities	1	(Dorner 2010)
Formal Institutions	1	(Fjellström and Sydner 2017)
TOTAL	**137****	

**The total is >137 as Maluf et al., 2020 included residential care and nursing home settings

Table 4: Range of interventions and specific study characteristics

INTERVENTIONS	NUMBER OF STUDIES	CITATIONS
CHOICE Program	1	(Wu, Morrison et al. 2018)
CHOICE + Program	2	(De Wit 2020, Keller, Wu et al. 2021)
Making the Most of Mealtimes (M3)	2	(Morrison-Koechl, Wu et al. 2021, Trinca, Chaudhury et al. 2021)
Staff Training Program	1	(Watkins, Goodwin et al. 2019)
Protected Mealtimes	1	(Ullrich, McCutcheon et al. 2011)
Mealtime Screening Tool	1	(Steele, Greenwood et al. 1997)
Paid Feeding Assistants	1	(Remsburg 2004)
Empower with Choice Program	1	(Mikula and Vanaman 2008)
Giving Choice of Mealtimes	1	(McDonnell 2010)
Educational Program for Food Service Providers	1	(Matwiejczyk, Roberts et al. 2018)
Dining Space Renovation	1	(Hung, Chaudhury et al. 2016)
FoodEx-LTC	1	(Evans and Crogan 2005)
Feasible and Sustainable Culture Change Initiative (FASCCI) Model	2	(Caspar, Berg et al. 2020, Caspar, Davis et al. 2021)
Implementation of Best Practice Guidelines	1	(Byles, Perry et al. 2009)
Household dining	1	(Bowers 2014)
Dining Assistance Program	1	(Bertrand, Porchak et al. 2011)
The Taste Buddies	1	(Baur and Abma 2012)

Texture modified diet	1	(Ballesteros-Pomar, Cherubini et al. 2020)
Implementation of Menus Based on Nutrition Guidelines	1	(Bamford, Heaven et al. 2012)
Buffet-Style Dining Program	1	(Andreoli 2007)
Staff Quality Improvement Program	1	(Crogan, Shultz et al. 2001)
Dining Environment Audit Protocol	1	(Chaudhury, Keller et al. 2017)
Dining space table allocation	1	(Maluf, Cheater et al. 2020)
Quality of Life and Quality of care	1	(Anderson and Blair 2021)
Situation, Background, Assessment, Recommendation approach	1	(Park, Lee et al. 2021)
Speech Pathology Services in Residential Aged-Care Facilities	1	(Murray and Hopf 2020)

RESEARCH POPULATION	NUMBER OF STUDIES	CITATIONS
Dementia	26	(Kayser-Jones 1982, Roder-Allen, Willick et al. 2003, Perivolaris, Leclerc et al. 2006, Chang and Roberts 2008, Hines, McCrow et al. 2010, Aselage, Amella et al. 2011, Hung and Chaudhury 2011, Roberts 2011, Way 2011, Beattie, O'Reilly et al. 2014, Henkusens, Keller et al. 2014, Stone 2014, Wu 2015, Anderson, Bird et al. 2016, Nell, Neville et al. 2016, Chaudhury, Hung et al. 2017, Milte, Shulver et al. 2017, Murphy, Holmes et al. 2017, De Wit 2020, Maluf, Cheater et al. 2020, Murray and Hopf 2020, Anderson and Blair 2021, Caspar, Davis et al. 2021, Keller, Wu et al. 2021, Morrison-Koechl, Wu et al. 2021, Trinca, Chaudhury et al. 2021)
Dysphagia	2	(Shune and Linville 2019, Ballesteros-Pomar, Cherubini et al. 2020)
Cognitive Impairment	3	(Kayser-Jones and Schell 1997, Carrier, West et al. 2009, Morrison-Koechl, Wu et al. 2021)
Old age	3	(Maluf, Cheater et al. 2020, Murray and Hopf 2020, Park, Lee et al.

2021)

Figures

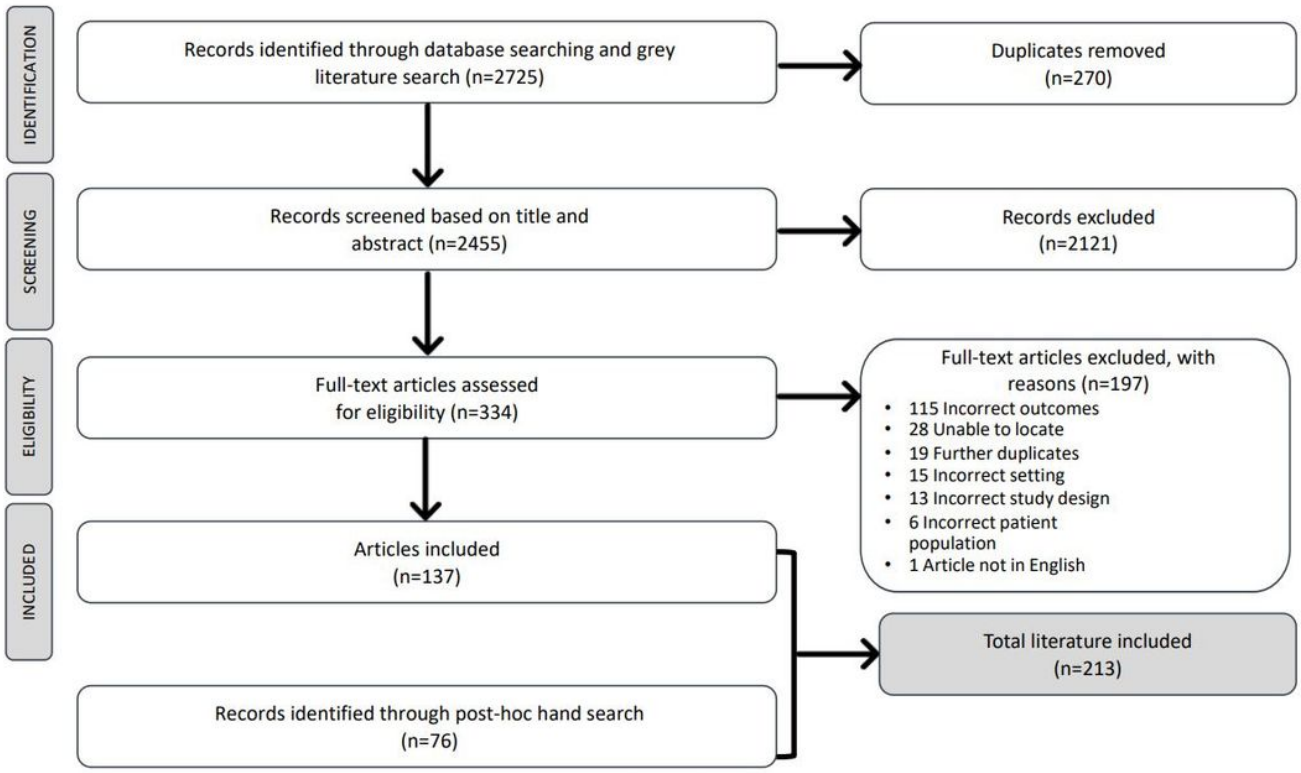

Figure 1

PRISMA flow diagram of included articles

Supplementary Files

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- AppendixA.docx
- AppendixB.docx
- AppendixC.docx
- AppendixD.docx