

The Impact of Loneliness and Social Isolation on Dietary Choices and Practices among Older Adults: A Systematic Review of Qualitative and Mixed-Methods Research

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Introduction

Diet significantly impacts people's quality of life and physical and mental wellbeing (AlAmmar et al., 2020; Marx et al., 2021; World Health Organization, 2003). This is particularly relevant for older adults, as has been noted in different contexts (Shlisky et al., 2017; Tramontano et al., 2016; Tyrovolas et al., 2009). Dietary choices and behaviour, a complex subject that has been examined from various viewpoints and disciplines, are particularly significant (Conde-Caballero et al., 2021; Urala & Lähteenmäki, 2003; Verbeke, 2008). Aside from the purely nutritional dimension of food (Hays & Roberts, 2006; Locher et al., 2005; Posner et al., 1993; D. Shahar et al., 2003), dietary behaviour has been analysed based on its biological (Brown et al., 2020) and socio-cultural aspects

(Conde-Caballero et al., 2023; Melbye et al., 2013; Papachristou et al., 2013; Pliner & Mann, 2004; Vogel et al., 2019), the impact of marketing strategies (Barr-Anderson et al., 2009; Hitchings & Moynihan, 1998), food costs (Franck et al., 2013; Passos et al., 2020), health impacts (Scarborough et al., 2011; Schwartz et al., 2011), and the educational (Briefel et al., 2009) and socio-economic backgrounds of consumers (Oleschuk et al., 2023; Risvik et al., 2007). The existing literature has shown that dietary choices and behaviour are dynamic, complex, and liable to change over the course of people's lives (Franchi, 2012; Morgan & Burholt, 2020). As Mastronuzzi et al. (2019) have noted, during ageing, diet becomes a critical factor in people's health, with loneliness and isolation being key social factors affecting food behaviour among older adults (Björnwall, Sydner, et al., 2021).

Loneliness has been defined as a distressing experience of discrepancy between a person's desired level of social relations – their expectations – and the one they actually achieve (Perlman & Peplau, 1981, p. 32). Globally, the percentage of older adults experiencing loneliness ranges between 25–62% (Ortiz-Ospina & Roser, 2020). This percentage increases more markedly from the age of 70 onwards, due to declining health and the loss of friends and spouses that often comes with ageing (Hawkley et al., 2019). On the other hand, social isolation has been defined as a lack of significant social contact or communication sustained over time (Victor et al., 2000). Some studies have suggested that loneliness and social isolation are health risk factors comparable to well-established ones such as smoking and obesity (Holt-Lunstad et al., 2015). They are also associated with an increased risk of mortality – 14% higher for those experiencing loneliness, with a more significant impact on their mental health, and 32% higher for those experiencing social isolation, with a more significant impact on their cognitive and physical health (Wang et al., 2023). Although loneliness and social isolation are different concepts, research has suggested that they might be interrelated – living alone appears to be one of the main factors triggering feelings of loneliness, which in turn might contribute to social isolation, especially among older adults (Lykes & Kemmelmeier, 2014; Sundström et al., 2009).

In recent years, there has been increasing evidence of the impact of loneliness on dietary behaviour among older adults – particularly those aspects that involve habits and decision-making (Whitelock & Ensaff, 2018). For instance, it has been noted that the lack

of social interaction and commensality at mealtimes can affect choices regarding how food is acquired, prepared, served, consumed, and even stored to avoid wastage (Sobal & Bisogni, 2009). Eating alone is generally perceived as less pleasurable (Andersen & Brünner, 2020; Whitelock & Ensaff, 2018). At the same time, losing a spouse or other significant changes in social relations often affect dietary routines (Björnwall, Mattsson Sydner, et al., 2021; Courtin & Knapp, 2017; Vesnaver et al., 2016). These circumstances could lead to a lack of motivation to cook or eat, with people eating less and skipping meals or adopting poorer food choices – e.g., consuming more ultra-processed foods, which have lower nutritional values (Andersen & Brünner, 2020; Lane et al., 2014; Vesnaver et al., 2015, 2016). The available evidence suggests that there might be a significant connection between experiences of loneliness and the development of inadequate dietary habits, although some studies dispute this association (Hanna et al., 2023).

This article presents a systematic review (SR) of the literature examining how loneliness and social isolation¹ could mediate dietary choices among older adults. The review focuses on qualitative and mixed-methods research studies published between 2013 and 2023. The results reveal the impact of loneliness on three main areas: 1) how changes to a household affect dietary behaviour and appreciation of food; 2) the strategies that older people implement to regain or reconstruct commensality; and 3) living alone as an opportunity for exercising a greater degree of autonomy and control regarding food choices.

Material and Methods

Data collection

We conducted a systematic review of the literature using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist to report findings (Page et al., 2021). Data were collected from five electronic databases: Web of Science (Clarivate), PubMed (National Library of Medicine), Scopus (Elsevier), Social Science

¹ It should be noted that in several of the studies included in the review, the distinction between the different terms is not explicitly defined, which may lead to some conceptual confusion. Consequently, the causal relationships between the different forms of loneliness and eating practices may be unclear, so these studies should be interpreted with caution

Premium Collection (ProQuest), and EBSCOhost (EBSCO). Based on the research questions considered, the keywords were divided into four categories that were then used to search for related words in each category. The categories were as follows: older adults, food practices, loneliness/social isolation, and healthy food habits (Table 1). The search was limited to the fields “title”, “abstract”, and “keywords” of the indicated databases; articles in English; and published between January 2013 and December 2023. The main search was conducted in January 2024 by the first author.

Category Keywords	Search
Older adults	(“ageing” OR “aging” OR “age-related*” OR “elderly population” OR geriatric* OR “longevity” OR “old” OR “elder*” OR “elderly” OR “senior*” OR “aged” OR “old age” OR “over age 65” OR “65 and over”) AND
Food practices	(“food” OR “food intake” OR “food consumption” OR “food beliefs” OR “food practices” OR “nutrition” OR “food choice*” OR “food behaviour” OR “food behavior” OR “food variety” OR “culinary” OR “cook*” OR “diet” OR “appetite” OR “commensality” OR “meal”) AND
Loneliness/social isolation	(“loneliness” OR “social isolation” OR solitude OR alone OR “home living” OR “living at home” OR “home living” OR “widowhood” OR “eating alone”) AND
Healthy food habits	(“healthy food habits” OR “healthy eating” OR “healthy food choice” OR “healthy ageing” OR “diet quality” OR “nutrient” OR “dietary patterns” OR “nutrient density” OR “nutrient adequacy” OR “balanced diet” OR “portion

	control” OR “meal planning” OR “food literacy” OR “eating habits”)
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Table 1. Search categories and keywords used.

Inclusion and exclusion criteria

The following inclusion and exclusion criteria were defined (Table 2). Each publication was selected if it met all the inclusion criteria and excluded if it met any of the exclusion criteria.

The search focused on empirical studies examining dietary choices among older adults in situations of loneliness or social isolation. Due to the width of the research field on older adults’ dietary behaviour, a key factor for exclusion from our review was if papers focused only on the nutritional dimension of diets – e.g., articles measuring caloric intake or variations in nutrient levels, among others. As for the participants’ age, we included those studies in which participants were identified as “older adults” – 60 years and over in the final selection – in line with the most recent WHO reports on ageing (World Health Organization, 2020). Finally, regarding loneliness and social isolation, these variables were considered in a broad sense – if these categories were not explicitly defined in the text, we included research studies that focused on people living alone or widowed.

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> • The text is a peer-reviewed article or a conference publication. • The text is an empirical research. • The text fully or partially researches food choices or food habits. • The text fully or partially researches older adults (as defined by the articles). • The text fully or partially researches loneliness or social isolation. • Full article written in English. • The article was published after 2013 (included). 	<ul style="list-style-type: none"> • The text is a non-research article (i.e., editorial, commentary, book review, editorial letter, poster). • The text is a conceptual or theoretical study, study protocol, review article, or patent. • The text addresses food choices or food habits from a nutritional viewpoint only. • The article was published before 2013.

Table 2. Inclusion and exclusion criteria

Screening and study selection

A 3-stage screening protocol was followed (Fig. 1). First, a total of 2496 texts were identified in the databases consulted. Of these, 1010 records (40.41%) were duplicated and were thus eliminated. The remaining 1486 texts were screened. The screening steps were as follows: 1. title screening, 2. abstract screening, and 3. full-text screening. To avoid bias in the screening process, the results were handed over to two teams composed of two researchers each (DA and DCC; LLO and BRJ). Another researcher (LMJ) arbitrated in case of discrepancies between the teams. Once the texts that met the inclusion criteria were identified, a backward and forward citation search was carried out, through which we identified three additional publications. During the selection process, information such as authors' names and publication titles was not withheld. Mendeley reference management software was used to archive the articles and facilitate the screening process.

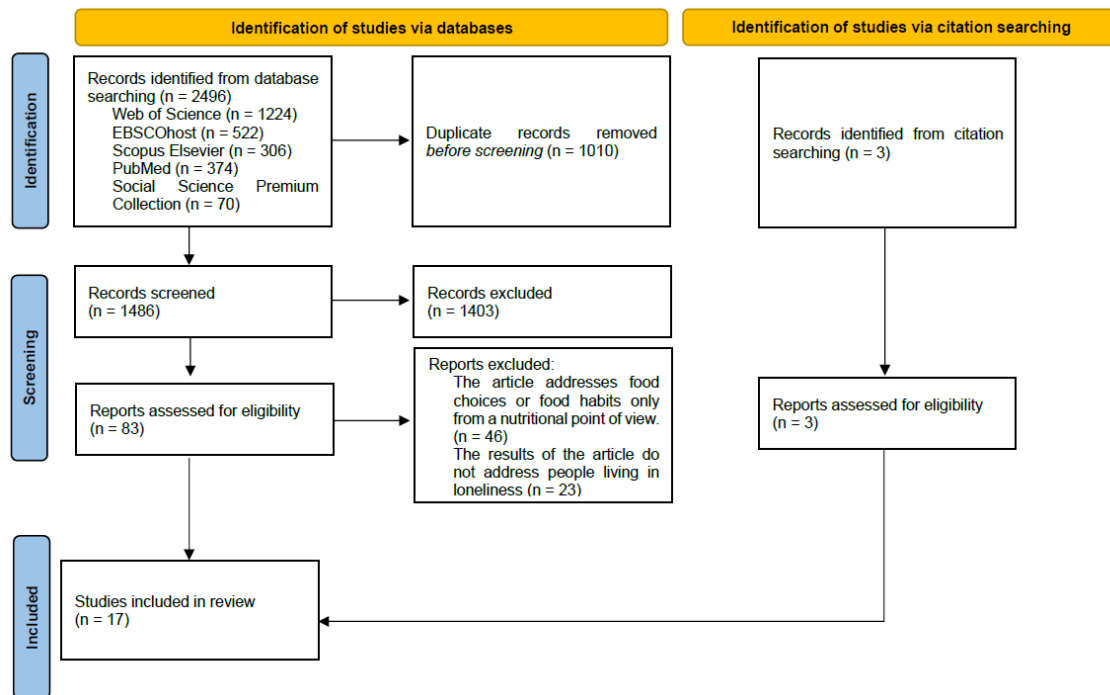


Figure 1. Data collection and data selection process diagram, adapted from Page et al. (2021).

Data extraction

After title and abstract screening, 86 texts aligned with the focus and scope of our study. Four research team members (DA; DCC; LLO; BRJ) read these 86 articles in full to identify those that were based on qualitative and mixed-methods research. This resulted in 69 texts being excluded: 46 articles were excluded due to addressing food choices or eating habits solely from a nutritional standpoint; another 23 articles were excluded due to the lack of specification regarding participants living alone.

The final selection resulted in 17 publications from which data were then extracted. A template with several columns was used for data collection (Table 4): source; research questions; country; recruitment strategy; sample description and inclusion criteria; research methods and data collection tools; methodology; CASP score; main findings. The included studies, along with the CASP template, data extraction table, and preliminary draft of this article were accessible and available on Microsoft 365 Sharepoint for all co-authors.

Question	Yes	Can't Tell	No
Section A: Are the results valid?			
1. Was there a clear statement of the aims of the research?			
2. Is a qualitative methodology appropriate?			
3. Was the research design appropriate to address the aims of the research?			
4. Was the recruitment strategy appropriate to the aims of the research?			
5. Was the data collected in a way that addressed the research issue?			
6. Has the relationship between researcher and participants been adequately considered?			
Section B: What are the results?			
7. Have ethical issues been taken into consideration?			
8. Was the data analysis sufficiently rigorous?			

9. Is there a clear statement of findings?			
10. How valuable is the research?			

Table 3. CASP critical appraisal tool (Critical Appraisal Skills Programme, 2018)

Quality appraisal

Incorporating a critical appraisal tool is crucial to ensure the quality and reliability of the studies assessed in a systematic review (Munthe-Kaas et al., 2019; Page et al., 2021). Although there is currently no consensus on what the standard for evaluating qualitative studies should be, various authors suggest that the CASP checklist is suitable for assessing such studies (Derrer-Merk et al., 2023; Long et al., 2020). Thus, in our review, we have employed the CASP Qualitative Studies Checklist (Critical Appraisal Skills Programme, 2018).

The CASP Qualitative Studies Checklist consists of ten questions (Table 3). To evaluate the quality appraisal, a numerical value was assigned to each question, aiming to determine whether the criterion was met or not: Yes=1; Can't Tell=0.5; No=0. Scores of 9-10 indicate high-quality papers; 7.5-9: moderate-quality papers; less than 7.5: low-quality papers; excluding the paper if it scores less than 6 points. While our emphasis was on higher-quality papers, we did not exclude any papers to ensure the inclusion of insightful and meaningful data. Paper quality was considered during the development of the discussion.

Data synthesis

Once a detailed reading of the articles was completed, a constructivist grounded theory approach (White & Cooper, 2022) was followed to identify discourses related to food practices among individuals experiencing loneliness or social isolation. This approach followed an inductive and iterative process. Firstly, participant quotes were identified, aiming for the synthesis to be grounded in the participants' experiences (Díaz de Rada, 2011). This reading was conducted by four team members (DA; DCC; LLO; BRJ), who systematically read through each eligible article line by line. Secondly, these quotes were systematically compared (Charmaz, 2014). Through an inductive procedure, the quotes

were coded into hierarchical categories (Díaz de Rada, 2011), thus generating two-level constructs on themes and subthemes.

Accepted

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
Andersen and Br�nner (2020)	How do older widows and widowers cope with the disruption of their shared meal routines, and what are their perceptions of community-based social meals?	Denmark	Professional agency recruited most participants, while some were from first author's network. Screening questionnaire sent to 80,000 members in Denmark with specific criteria	n=31; ≥ 65 y when entering widowhood; ≤ 5 y widowed, 16 F and 15 M	Qualitative, in-depth interviews	Thematic analysis	9,5	When people lose their spouses, they adapt to the loss of shared meals. Most of them reject shared meals in community settings because of practical issues – socialising with strangers and biases about the attendees, as they stereotype them as too old and associate old age with decline and frailty.
Bloom et al. (2017)	What are the influences on the diet, and how do different factors contribute to diet stability?	United Kingdom	Participants sampled from Hertfordshire Cohort Study based on diet assessments. Recruitment based on age-related factors, psychological,	n=92; 74–83 y (mean=78); 47 % F; community-dwelling adults	Qualitative, focus group	Inductive (data-driven) process and then thematically coded and analysed using a constant comparative approach	9	Bereavement affected cooking behaviour differently for men and women: women were less motivated to cook, while men faced cooking challenges. Participants shared food preparation tips for eating alone: one-pot dinners, cooking extra, and freezing meals.

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
			and social influences on diet					
Brownie (2013)	What are the views of older individuals regarding how ageing impacted their dietary practices?	Australia	Participants recruited via local radio station and extended network promotion	n=29; 60–93 y (mean=73); 23 F and 6 M; 15 participants lived with someone and 14 lived alone	Qualitative, focus groups (one with women only, one with men only, and two with men and women combined)	Inductive approach to thematic analysis of qualitative data	8	Social isolation, marital status, and living arrangements can impact the diet of older individuals. Widowhood and living with a partner affect control over food choices and meal preparation, leading to modified diets.
Brownie and Coutts (2013)	What are the perceptions and practices regarding a healthy diet, and how can these findings be interpreted in the context of nutrient requirements?	Australia	Participants recruited via local radio station and extended network promotion	n=29; 60–93 y (mean=73); 23 F and 6 M; 15 participants lived with someone (spouse or companion) and 14 lived alone	Qualitative, focus groups	Thematic analysis	8	The participants believed that a healthy diet for an older person is not different from a healthy diet for a younger person. Factors such as food costs, social situation, and health conditions influenced the participants' food choices, while the desire to regain or maintain wellbeing positively affected their food choices.
Choi and Bae (2023)	What is the impact of living alone on health	South Korea	Purposeful sampling	n=15; 68–88 y (mean=77); 10 F and 5	Qualitative, in-depth, semi-structured interviews and a survey	Thematic analysis	9	Participants expressed various difficulties associated with eating when living alone. They often skipped

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
	and wellbeing? What challenges do older adults living alone face, and what potential solutions can be identified?			M; 3–35 years living alone (median=16)	to collect demographic characteristics			meals, consumed small amounts, or struggled to maintain a balanced diet. Limited financial resources led older adults to limit social engagement and hobbies.
Cohen and Cribbs (2017)	What are older adults' food practices, and how do they relate to common ageing obstacles? What are the inhibiting and enabling factors for food preparation?	United States of America	Convenience sampling from SAGE's clients and volunteers. Participant recruitment involved flyer distribution and SAGE staff communication	n=31; ≥ 60 y; community-dwelling older adult clients of Services & Advocacy for LGBT Elders (SAGE)	Qualitative, focus groups	Thematic analysis using hierarchical coding	8,5	Food practices that maximise ease, convenience, and affordability enable individuals to sustain themselves independently. Proximity plays a significant role in food store availability, and frozen foods are commonly used to facilitate food preparation. The tools used for food preparation, such as microwaves and cookware, also affect food practices. The small size of kitchens and storage spaces and the use of outdated appliances have limited the diversification of food practices.

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
Hansen (2022)	How can food and meals reduce loneliness among the elderly?	Norway	Not addressed	n=76; 60–87 y; > 80% F. Individuals should exercise at least once a week, make their own meals at home, and purchase their own food	Qualitative, CurroCus® (CC) group interviews	Grounded theory	8,5	Older people alleviate loneliness through food-related activities, emphasising togetherness and life action. Gathering around meals fosters social connection, reducing loneliness. Shared dining experiences, whether at home or elsewhere, positively impact wellbeing by enhancing social bonds and increasing food intake among seniors, who also engage in food-related social activities.
Host et al. (2016)	What are the food shopping, cooking, eating habits, and attitudes towards the consumption of different food groups among healthy, independently	Australia	Participants were sourced from three low-care Illawarra Retirement Trust facilities.	n=18; ≥ 60 y (mean=78.2); 13 F and 5 M	Qualitative, three focus groups	Content and thematic analysis	9	People living alone often modify their food choices after significant events like children leaving the parental home or losing a spouse. Living alone or as a couple in retirement affects shopping and cooking strategies. Participants emphasise the importance of independence, community, and self-responsibility for maintaining good nutrition and overall health. Quality, price, and

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
	living Australians aged 60 years and older?							accessibility of food are important considerations for older individuals living alone.
Kvalsvik et al. (2021)	What environmental factors influence the eating behaviour of home-living older adults?	Norway	Initially used flyers, then senior centers, and street-intercept recruitment.	n=22; ≥ 60 y (includes one family member aged 28 and one family member aged 58); 10 F and 12 M; with diverse occupations, employment status, marital status, and living situation	Qualitative, including dyadic interviews and in-depth individual interviews	Content analysis	8,5	Social influences, particularly from significant others, were found to be the main factor in food choices and healthy eating for older adults. Social facilitation, like eating with others, positively impacted food intake. Senior centres played a crucial role in maintaining independence and social interaction.
Lane et al. (2014)	What are the dynamics surrounding older women's reduced food preparation and cooking?	United Kingdom	Recruitment involved lunch clubs, day centers, and community organizations, including leaflets in Age Concern Norfolk's newsletters,	n=40 F; 65–95 y (mean=82); who lived independently and had reduced contact with preparing and cooking meals	Qualitative, including in-depth, semi-structured interviews, focus groups, and observation	Grounded theory	10	The participants demonstrated a combination of intentional decisions and adaptations forced by circumstances such as changes in health, energy, relationships, and caring roles. Despite these changes, participants actively managed their contact with food and sought ways to maintain social engagement and independence. They explored

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
			word-of-mouth, posters, and local press announcements.					alternatives like shopping at smaller supermarkets, trying new foods, and prioritising social connections over meal preparation.
Lesakova (2016)	What is the empirical evidence on the behaviour and satisfaction of older customers during their food procurement process?	Not specified	Participants recruited through senior clubs and age-specific organizations.	Questionnaire: n=468 Focus groups: n=20; ≥ 60 y; living independently and carrying out their household shopping	Mixed-methods, quantitative survey, and two focus groups	Thematic analysis	7,5	Product and pack sizes often do not meet the needs of older people, especially those living alone, as they tend to contain more food than is required for one- or two-person households.
Peura-Kapanen et al. (2017)	What are the factors influencing the acceptability of and barriers to using convenience food among older individuals in Finland?	Finland	Participants through the Consumer Panel of the National Consumer Research Center and the	Empathy-based stories: n=114; 65–81 y; 70 F and 44 M Focus group discussions: Round 1: 3 focus groups, n=22; 65–82 y; 13 F and 9 M	Qualitative, empathy-based stories, and focus groups	Thematic analysis	8,5	The study found that older people mainly had negative attitudes towards convenience food, preferring to cook from scratch. They valued the taste, smell, appearance, and structure of food, wanting convenience food to resemble home-made food. Healthiness was a concern, with a preference for self-made meals containing fresh

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
			Finnish Population Information System	Round 2: 6 focus groups, n=32; 65–82y; 18 F and 14 M				ingredients. The price, effortlessness, and ease of convenience food were factors influencing its use. Older people desired independence but disliked relying solely on convenience food. Packaging that catered to individual needs was also important.
Thomas and Emond (2017)	What are the perceptions, preferences, and food habits of older people living alone? What are the factors that influence dining out experiences?	Scotland	Utilized online database to locate lunch clubs for older adults. Initial contact led to recruitment for research through in-person presentations and distribution of information leaflets	n=10; ≥ 65 y; 5 F and 5 M; attending a lunch club and living alone	Qualitative, including in-depth interviews, food diaries, and card-sorting exercises	Thematic analysis	9	Despite dining alone, participants valued the solitude and saw it as a positive experience, engaging in activities such as watching TV or reading. The freshness and variety of food were prioritised over the presence of family or friends. Dining out was characterised by sociability, freedom from food labour, and the rarity of eating out. The sociability of dining out outweighed the importance of the food itself.
Ueland et al. (2022)	What are the food-related practices, and how do these	Norway	Participants recruited through Nofima's consumer	Survey: n=1005; 67–97 y; 50% F and 50% M, 32% living alone	Mixed-methods, quantitative survey, two focus groups, and ten in-	Descriptive and inferential statistics	9,5	A group comprising 80+ older adults highlighted preparation difficulties, sensory losses, and social isolation. Younger participants valued cooking

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
	practices impact healthy ageing? What are the barriers and factors that promote healthy ageing in relation to food-related practices among this population?		database and local organization	and 68% living together Focus groups: Group 1: n=7; 67–76 y; 4 F and 3 M Group 2: n=6 F; 85–94 y Interviews: n=10; 69–88 y; 5 F and 5 M	depth, semi-structured interviews	analyzed data overview, comparing categorical variables and mean differences using Pearson chi-square, t-tests, and factor analysis. The methodology for qualitative analysis is not addressed in detail		from scratch, while older adults often relied on ready-to-eat meals. Leftovers were commonly repurposed. Interviewees emphasised dinner as the most challenging meal due to its social nature. Eating alone was less enjoyable for most participants.
Vesnaver et al. (2015)	How does older women's food behaviour change during the transition to widowhood?	Canada	Participants recruited through advertisement, word of mouth, and in-person sessions at senior	n=15 F; 71–86 y (mean=77); community-living women, living alone	Qualitative, in-depth interviews	Constant comparative analysis	9,5	The loss of commensality was the earliest change observed, followed by disrupted scripts, deprioritised food, and feeling down. Participants recognised the misalignment between their espoused food values

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
			recreation centres and one senior apartment complex					and behaviours, leading to a more satisfactory personal food system. Factors influencing this change process included the couple's prior food system, the gendered experience of nutritional care, their values, and food-related resources. Widows adjusted their behaviours to align with their present preferences and values, experimenting with different strategies.
Vesnaver et al. (2016)	How do widows experience the loss of commensality, and what shifts in their food behaviour do they attribute to this loss?	Canada	Participants recruited through advertisement, word of mouth, and in-person sessions at senior recreation centres and one senior apartment complex	n=15 F; 71–86 y (mean=77); community-living women, living alone	Qualitative, in-depth interviews	Constant comparative analysis	9,5	The shared meal was perceived as more enjoyable than eating alone, making a distinction between mealtimes and eating. Widowhood led to changes in food behaviours, with women feeling free from the commitment of commensality and engaging in food behaviours outside of established couple preferences (i.e., preferred times, expectations, appetites and food desires, etc.). Meal preparation efforts were

Source	Research questions	Country	Recruitment strategy	Sample description and inclusion criteria	Research methods and data collection tools	Methodology	CASP score	Main findings
								drastically reduced and simplified in widowhood. Elaborate meals were usually cooked only for others, such as friends or family.
Whitelock and Ensaff (2018)	What are the food choices and dietary habits of community-dwelling older adults living in areas of high deprivation?	United Kingdom	Recruitment targeted older adults via community and day centers, like lunch clubs and social activities, chosen based on deprivation levels	n=30; 63–90 y; 25 F and 5 M; 26 living alone, 28 retired, with diverse relationship status (17 widowed).	Qualitative, focus groups	Inductive thematic analysis	9	Living alone can impact the food practices of older adults, leading to a preference for simpler, easier-to-prepare meals, which can affect their dietary intake and create a nutritional risk. Reduced commensal eating and social isolation can also contribute to nutrition deficits and depression. The level of social support and access to means of transport can influence food access and shopping location. Cost is a significant factor in food choices.

Table 4. Descriptive overview of the articles included in the systematic review

Results

Descriptive details of reviewed studies

The final selection contained 17 research studies published between January 2013 and March 2023. A total of 2137 individuals participated in these studies, of which 928 were female, 731 were male, and 488 did not specify their gender. The sample size in these studies was heterogeneous – ranging from only 10 (Thomas & Emond, 2017) to 1028 participants, using different techniques (Ueland et al., 2022). The age groups also showed variability. The majority of studies (n=10, 59%) defined older adults as those with a minimum age of 65 years or above. The remaining studies included participants between 60–65 years of age (n=7, 41%). The participants' age ranges also varied. The smallest range was 74–83 years (Bloom et al., 2017), whereas Brownie (2013), Brownie and Coutts (2013), Lane et al. (2014), and Ueland et al. (2022) had the widest participants' age ranges, with differences of 30 years or more. Regarding the type of research, most of the studies used qualitative methods (n=15), and only two used mixed methods. The most common instruments for data collection were focus groups (n=11) and semi-structured interviews (n=8). Other techniques used were surveys (n=3), food diaries (n=1), observation (n=1), card-sorting exercises (n=1), and empathy-based stories (n=1).

Ten of the works are high-quality papers (scoring 9 or above on the CASP), and seven are moderate-quality papers (scoring 7.5 or above on the CASP). There are no papers with a score lower than 7.5 on the CASP. The score of each work is documented in Table 4. Lower scores are attributed to insufficient information provided on sampling and recruitment strategy, research methods and data collection tools, and methodology. Notably, one of the studies fails to document the location of the research (Lesakova, 2016). Additionally, not all studies mention the relationship between researchers and participants, which may impact the role and potential biases in the results (Hammersley & Gomm, 1997).

Most of the papers were written in Europe (4: United Kingdom; 3: Norway; 1: Denmark; 1: Finland), followed by Oceania (3: Australia), the Americas (2: Canada; 1: United States of America), and Asia (1: South Korea). As the review focuses on

publications in English, we are unable to comment on qualitative research conducted in languages other than English.

Results of individual sources of evidence

The main findings from the articles included in this review are shown in Table 4. Articles were grouped according to three main themes: 1) the impact of changes to a household on dietary behaviour; 2) the strategies implemented by older people to regain or reconstruct commensality, and 3) living alone as an opportunity for exercising greater autonomy regarding food choices. Each of these themes contains several subthemes, as shown in Table 5. We will discuss the themes one by one.

Theme	Subtheme
Impact of loneliness on diet	<ul style="list-style-type: none"> - Changing appreciation for food - Choices mediated by material deficiencies – e.g., loss of mobility, loss of earnings - Choices mediated by symbolic issues – e.g., lack of engagements, expectations regarding social relations
Strategies to reconstruct commensality	<ul style="list-style-type: none"> - Strategies to avoid loneliness – e.g., television, photographs - Replacement mechanisms - Opening to new environments for socialisation
Loneliness (living alone) as an opportunity for independent choices	<ul style="list-style-type: none"> - New strategies for food acquisition and preparation - Redefinition of roles and responsibilities regarding food and diet

Table 5. Themes and subthemes identified during the review.

Discussion

Impact of loneliness on diet

Several studies in this review addressed the impact on dietary behaviour of changes in social relations during ageing – particularly on commensal eating patterns. Within this theme, several subthemes were identified. Primary among these was the analysis of changes in dietary practices following significant changes to a household – i.e., bereavement, divorce, children leaving the parental home, retirement, or an older adult moving into a care institution. All these situations were closely associated with feelings of loneliness or perceived social isolation. Adapting to living alone after such a drastic change might open new dimensions regarding food and the social practices established around eating.

The articles reviewed addressed the impact of these changes on dietary behaviours (Andersen & Brünner, 2020; Bloom et al., 2017; Hansen, 2022; Lane et al., 2014; Vesnaver et al., 2015). Eating alone was described as a sad, less enjoyable, solitary, and emotionally challenging activity (Andersen & Brünner, 2020; Whitelock & Ensaff, 2018). These results are consistent with previous research on older adults (Rosenbloom & Whittington, 1993; D. R. Shahar et al., 2001; Sidenvall et al., 2000; Williams, 2004), which noted a negative perception associated with eating alone – described as less pleasurable than eating commensally. From an emotional viewpoint, changes to the household can directly impact food appreciation, with mealtimes acquiring a negative connotation for older adults getting used to living alone. However, the negative associations were not limited to food – the act of eating itself, being perceived as a social and shared activity, can become defined on the basis of absences. Eating alone represents a significant change in daily routines. People often miss social interactions and conversations during shared meals (Bjørner et al., 2018; Vesnaver et al., 2016). Indeed, the act of eating alone after a bereavement can become a symbol and a constant reminder of a lost spouse, transforming the meaning of the act of cooking – which used to be an effort made for others (Vesnaver et al., 2016).

As a consequence, older people living alone tend to consume more prepared, convenience food, and this, in turn, might create new barriers regarding how food products are presented and sold. For instance, Kvalsvik (2021) pointed out how portion

sizes varied depending on the number of people in a household – people living alone favoured individually packaged and smaller portions of food, while those living with others were not so concerned about portion sizes. Bloom et al. (2017) and Lesakova (2016) noted that packed food portions in supermarkets tended to be too large, particularly for women, and finding smaller alternatives was difficult, which resulted in either excessive consumption or food wastage.

Consequently, living alone had a direct impact on food shopping behaviour and the experiences associated with these practices. These were mediated by different factors – i.e., location, cost, accessibility of certain types of food, product quality, habits, and even the services or infrastructures at each retailer (Cohen & Cribbs, 2017; Host et al., 2016; Lesakova, 2016). Proximity to the place of residence was a central consideration, as it determined where and how food products were acquired (Cohen & Cribbs, 2017; Lesakova, 2016). Mobility problems, lack of access to a car, or public transport network deficiencies could limit the ability of older adults to travel to larger supermarkets, causing them to turn instead to shops closer to their residence (Lesakova, 2016). On the other hand, product quality and access to certain types of food were also key factors, particularly when buying fresh products. As Host et al. (2016) showed in their study, older adults often visited different places to buy better-quality products. This suggests that, for certain products, participants could prioritise buying in specialised, smaller shops rather than in supermarkets, even if costs were higher. These factors could become particularly relevant when older people were adapting to living alone, often with reduced mobility and limited help from relatives to acquire groceries. In some cases, this could cause older adults' diets to become less varied and nutritious.

Several studies examined the strategies older adults used to minimise these limitations. These included buying products when they were on offer, using discount vouchers, or comparing prices for the same product from different retailers (Cohen & Cribbs, 2017; Host et al., 2016). Another strategy was using specialised meal delivery services, which ensure adequate nutritional intake and help circumvent mobility issues (Cohen 2017). Similarly, Lane et al. (2014) noted how female participants in their study opted for frozen meal deliveries to cope with mobility limitations or those associated with health considerations. At the same time, there were frequent testimonies of an increased

reliance on convenience food – which is easier to use and store and provides good value for money (Cohen & Cribbs, 2017; Lane et al., 2014).

Strategies to reconstruct commensality

Older people living and eating alone often sought to regain or reconstruct their commensality with new practices that helped them minimise their losses and absences. These practices ranged from learning to cook – notably, more frequent among male individuals – to new arrangements to avoid feeling lonely – often involving technological devices – or finding new spaces for socialisation. For instance, in the early stages following the loss of a spouse, there usually is a phase that involves adopting alternative commensality practices – with a more unstructured approach to mealtimes and the simplification of food preparation, often with greater reliance on convenience food (Peura-Kapanen et al., 2017; Vesnaver et al., 2016). This is consistent with studies (Hughes et al., 2004; Johnson, 2002; Wells & Kendig, 1997; Wilcox et al., 2003) that have shown how recently bereaved older adults often experienced reduced appetite, skipped meals, and consumed fewer fresh products such as fruit and vegetables. Another common element in the articles reviewed is how the study subjects developed strategies to minimise the time and effort devoted to food preparation and consumption once they were alone – e.g., eating directly from pans or avoiding setting the table (Andersen & Brünner, 2020; Bloom et al., 2017; Whitelock & Ensaff, 2018). This was also noted by Vesnaver (2015) in his study of widowed women, describing how some participants gave less importance to their diet during their spouses' illnesses or in the immediate aftermath of their passing. These changes affected their appetite and interest in food preparation, often leading to more snacking between meals, in response to their mood at the time. Lane (2014) also noted a reduced interest in food preparation after losing a spouse.

However, as Bloom (2017) suggested regarding the reconstruction of commensality, responses varied depending on gender – while women experienced a loss of motivation to cook only for themselves after losing their spouses, male participants had to adapt to their new situation by learning to cook or finding alternatives. Indeed, while widowhood often leads to loneliness, it can also cause significant transformations in dietary behaviour, both in its purely biological aspects – i.e., nutrient intake – and in its social and cultural dimensions – i.e., the rituals associated with food and commensality.

Several studies (Andersen & Brünner, 2020; Grini et al., 2020; Hansen, 2022; Host et al., 2016; Thomas & Emond, 2017) focused on the diverse strategies adopted by widowed people to deal with the loss of commensality – the symbolic practice of eating together, with its social and cultural implications. Alternative mechanisms introduced to cope with losing a spouse were using electronic devices at the table, watching television while eating – scheduling mealtimes around the broadcasting of specific programmes – or placing a photograph of the spouse in the space where they used to sit. All these strategies revealed attempts at regaining the sense of commensality that defined their dietary routines before their bereavement (Vesnaver et al., 2015). However, none of them fulfilled the standard ideal of what a “proper” meal was for older adults (Andersen & Brünner, 2020).

On the other hand, attempts to adapt to loneliness by regaining the commensality lost also included seeking new companionship. Several studies examined the transition from eating alone to eating with friends, relatives, or other older adults living independently. The articles reviewed were in line with the body of research stressing how the support of family and friends or the existence of lunch clubs or centres promoting socialisation influence the relationships that older adults establish with food (Dean et al., 2009; Litwin & Shiovitz-Ezra, 2011; Marquet et al., 2020; Nimrod & Shrira, 2016; Simpson-Young & Russell, 2009; Winter Falk et al., 1996). This research has systematically highlighted the importance of eating with other people for older adults living independently (Andersen & Brünner, 2020; Bjørner et al., 2018; Bloom et al., 2017; Cohen & Cribbs, 2017; Hansen, 2022; Vesnaver et al., 2015). Sharing a meal is an activity that encourages conversation and fosters social relations and feelings of companionship (Vesnaver 2016). However, although the presence of other people and the associated opportunities for interaction generally can increase the enjoyment derived from food consumption (Bjørner et al., 2018; Hansen, 2022), some people valued the act of eating alone as an opportunity for being in charge of their diets – as opposed to contexts in which their food was prepared for them, such as restaurants or social clubs (Thomas & Emond, 2017). Those studies focused on the perception and attitudes toward community-based social meals noted that sometimes the sense of autonomy and freedom achieved by eating alone was prioritised over the benefits of sharing a meal. Indeed, Andersen and Brünner (2020) noted that many widowed adults were reluctant to enter new commensal

circles, with reasons ranging from cost and schedules to difficulties experienced when socialising and meeting new people, but also including negative prejudices about the kind of people who attended these meals – describing them as too old, physically frail, or having boring or pointless conversations. Bjørner et al. (2018) confirmed these findings, suggesting that negative stereotypes about old age affected how people attending community-based meals were perceived. Despite this, as Thomas and Emond (2017) noted in their analysis of lunch clubs, the social dimension of these experiences was generally more valued than other aspects, such as the quality of the food or, indeed, what food was served.

Loneliness as an opportunity for independent control over food choices

The reviewed articles also revealed that certain attitudes fostered healthier dietary behaviours among older adults. Maintaining a positive attitude, being resilient, seeking independence, and having an active lifestyle were some of the strategies through which the study participants tried to avoid being perceived as “old” or dependent (Bloom et al., 2017; Brownie & Coutts, 2013; Ueland et al., 2022). As mentioned before, some of the studies analysed underlined the participants’ desire for “independence” and how cooking and eating practices were seen as a means to secure their independence and control over their daily lives and social relations (Brownie, 2013; Cohen & Cribbs, 2017). The category “independence” often emerges in the literature on older adults and their dietary choices and practices (Gustafsson et al., 2003; McKie, 1999). For instance, several of the reviewed articles noted how their study subjects developed new strategies to maintain independence in food procurement – e.g., shopping closer to their place of residence or using food delivery services – and cooking – batch cooking, freezing leftovers, using ready meal deliveries – to adapt to their new circumstances, as well as seeking information and support services among friends, relatives, or different media channels (Cohen & Cribbs, 2017; Host et al., 2016; Lane et al., 2014). Indeed, some participants placed great importance on the opportunity to choose and prepare their meals, and tried to avoid excessive dependence on convenience food or ready-meal delivery services (Peura-Kapanen et al., 2017). Finally, some articles noted that food preparation was described as a pleasurable and even therapeutic activity, offering a creative outlet and a source of relaxation (Cohen & Cribbs, 2017).

Several studies pointed out that participants discovered new interests and opportunities in food-related activities during widowhood (Hansen, 2022; Lane et al., 2014; Thomas & Emond, 2017; Vesnaver et al., 2015, 2016). In this sense, eating alone could be seen as liberating and offering new opportunities. As Lane et al. (2014) and Vesnaver et al. (2015) have shown, participants – particularly women – adapted their shopping and cooking habits to their new circumstances, prioritising their preferences and their participation in those activities that remained meaningful for them, and disengaging themselves from the central role traditionally assigned to them as meal-preparers (Brownie, 2013; Kvalsvik et al., 2021). As Vesnaver et al. (2016) noted, for the female participants in their study widowhood meant freedom from the commitment to prepare food and having to follow the regular schedules, preferences, and dietary choices established during their marriages. In terms of shaping a new personal dietary behaviour after losing a spouse, the process of assessing and adjusting their preferences and values led to changes in their role and responsibilities around food. An important finding was that, despite these changes, the pleasure derived from consuming their favourite food remained intact after the loss of commensality (Vesnaver et al., 2016). These findings reinforce the body of evidence around dietary behaviours in widowhood, showing the importance of establishing conventions to adjust food practices (Hansen, 2022; Jastran et al., 2009), but also how these conventions are gender-modulated – given the different gender roles and competencies traditionally constructed around food preparation (Hughes et al., 2004; McDonald et al., 2000; Pfau & Saba, 2009) and the different emotional value attributed to eating commensally depending on the gender of the individual (Tani et al., 2015). However, despite these differences, some common changes can be identified after a bereavement – how, where, and when food is consumed, and in general, a simplification of the food acquisition, selection, and preparation processes.

Limitations

The studies reviewed presented several limitations. A crucial limitation was that none of the studies examined defined the concepts of “loneliness” or “social isolation” either categorically or as a result of the application of standardised instruments. Consequently, we had to infer the existence of both categories from circumstantial aspects, such as marital status (widowhood) and living arrangements (living alone). This might have caused

variability in the interpretation of results, hindering comparisons between the studies reviewed. There are also limitations regarding participant selection and how representative the sample was. For instance, some studies stressed the homogeneity of their samples in terms of the social and cultural background of the study subjects (Brownie, 2013; Brownie & Coutts, 2013). In addition, the specific nature of some of the studies' cultural or geographic context could limit their findings' relevance and applicability to other cultures or geographical locations (Choi & Bae, 2022; Lane et al., 2014). For instance, regarding possible bias in participant selection, certain studies, such as Host et al. (2016), could be over-representing specific profiles, such as those with a strong interest in health and nutrition. Similarly, recruiting participants through specific organisations or focusing the study on members of a single organisation could hinder the generalisation of results to other social groups or environments (Cohen & Cribbs, 2017; Lesakova, 2016). Likewise, selecting participants in a single, specific environment – e.g., apartment complexes for older adults or community centres, among others – could limit the diversity of the social networks and experiences of the study participants (Vesnaver et al., 2015, 2016). It is also important to consider the effect on testimonies of participants knowing each other (Whitelock & Ensaff, 2018), particularly when using instruments such as focus groups (Bloom et al., 2017). Finally, a lack of information on certain variables, such as the participants' socio-economic status or health conditions, could limit our understanding of the factors underpinning their attitudes and behaviours (Peura-Kapanen et al., 2017; Ueland et al., 2022).

Conclusions

Situations associated with loneliness or social isolation can significantly impact older adults' dietary behaviours, which are modified in contexts that include practical changes regarding food acquisition, preparation, or consumption. These changes, however, can also be socio-cultural – with transformations in sociability practices, which might be reconsidered and reconstructed – and even affect identity processes – with an acceptance and embodiment of loneliness leading to renewed identities, defined by resilience and satisfaction in the perception of their new realities.

In general, loneliness affects how food and food practices are perceived. Often, there is a loss of interest or motivation in culinary practices, which might lead to poorer diets. The importance attributed to and the satisfaction derived from food usually diminish in parallel with the reduction of the spaces of commensality and sociability. In contexts defined by loneliness, negative perceptions of what is consumed can be further modulated by issues of access to food and mobility and economic barriers. Consequently, eating alone is often associated with sadness and loss of pleasure.

The notion of loss can sometimes trigger cultural strategies to regain or reconstruct the spaces of commensality. Strategies to avoid loneliness and substitution mechanisms can include using electronic devices or televisions, which might be helpful in intervention processes and provide a certain degree of companionship. However, seeking new companies in social spaces can be ambivalent: while community-based meals can help restore the loss of commensality, some study participants prioritise their agency, independence, and control over dietary choices.

Finally, although the existing literature tends to associate contexts of loneliness with loss and poorer quality of life, the available evidence shows that living alone can also contribute to feelings of satisfaction and renewed forms of empowerment – for instance, widowhood can enable increased autonomy and feelings of empowerment for women whose dietary behaviours were, in the past, restricted under traditional forms of male domination.

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