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research article

Food and drink care-related quality of life of older adults accessing community-based care services in England

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Community-based social care plays an important role in addressing food and drink care-related quality of life (QoL) outcomes and associated needs of older people. An analysis of data from the English Adult Social Care Survey was conducted to explore the QoL and unmet needs of older people using social care services. Between 4.3 per cent (in 2011) and 8.1 per cent (in 2022) of older adults reported unmet needs. This increased over time, after controlling for other factors, potentially due to context, for example, the cost of living and underfunding of social care. The analysis demonstrates the importance of understanding older adults' QoL outcomes/needs as reflective of effective community-based care.

Keywords community work and services • home care • quality of life • older people

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Background

In many countries, the funding and delivery of community-based long-term care services (known as 'social care' in the UK), including homecare, day centres and meals services, is an important policy response to address the food and drink care-related needs of community-dwelling older adults (Watkinson-Powell et al, 2014; Fleury et al, 2021; Scientific Advisory Committee on Nutrition, 2021). Typically, older people's food and drink care-related needs are understood in terms of their functional limitations in activities of daily living (ADLs) (that is, the difficulty older

adults experience in preparing, consuming or purchasing food or drink). Such difficulties arise due to cognitive or physical impairment or mobility or dexterity limitations (Williams et al, 1997; Ipsos Mori, 2017). If unaddressed, these difficulties may lead to malnutrition and dehydration among older adults living at home, which are major causes of health deterioration and mortality among community-dwelling older adults (Purdam et al, 2019). Service planning, design and delivery are often shaped by concerns over older people's nutrition and hydration, with the role of community-based social care delivery framed as a way of preventing older people's health deterioration and their resulting health service use and expenditure (see, for example, Buys et al, 2012).

The purpose and value of community-based social care services, however, is broader than the prevention of malnutrition or dehydration due to functional limitations, associated health deterioration and healthcare service use. By adopting a person-centred conceptual framework or theoretical lens, community-based social care services also aim to promote independence, a sense of self and dignity, well-being, and quality of life (QoL) from the perspective of the older person accessing care (Netten et al, 2012). This conceptual framework repositions the understanding of care planning and delivery from 'what is done' (that is, a task or functional focus) to 'how and with whom it is done' (that is, a well-being or QoL outcome and relational focus). In England, a QoL outcome and relational conceptualisation of care needs is central to the Care Act 2014 and the Care and Support (Eligibility Criteria) Regulations 2015. These require English local authorities (LAs), which are responsible for care needs assessment and care planning, to consider the person's 'views, wishes, feelings and beliefs' when assessing care needs and planning support (Section 1.1.3b). This perspective is also evident in the English care regulator's definition of 'effective care', which requires that people are involved in decisions about what they eat and drink, that personal, cultural and religious preferences are adequately considered (Key Line of Enquiry [KLOE] E3.1), and that meals are flexible to meet people's needs (KLOE E3.3) (Care Quality Commission, 2022).

Aligned with these legislative and regulatory frameworks in England, which define food and drink care-related needs assessment, care planning and service delivery, there has been interest in how to conceptualise and measure older adults' food and drink care-related QoL outcomes and associated needs in a way that considers the person's personal, social, cultural, religious and ethical preferences. This includes taking into account whether a person is able to access food/drink they like, when they wish to and in a way that considers the person's safety, dignity and well-being. Examples include considering whether someone wishes to be actively involved in food choice and preparation, has access to vegetarian, kosher or halal food, or wishes to engage in social or cultural activities involving food/drink (for example, festivals, celebrations or communal meals) and tailoring support accordingly. It also involves ensuring that food/drink is stored safely and appropriately, as well as that someone eats and drinks enough, with socio-emotional or physical support to facilitate eating or drinking, or is able to manage special diets or dietary restrictions. In England, the self-completion version of the Adult Social Care Outcomes Toolkit (ASCOT-SCT4) was developed to measure the social care-related QoL of adults accessing social care services, including their QoL with regard to food/drink (Netten et al, 2012). ASCOT-SCT4 is based on Sen's capability approach (van Loon et al,

2018) and is designed to enable people to express their social care-related QoL against their personal preferences, views and attitudes, which can then be taken as an indicator of how well care services are supporting the person. Low QoL can be taken as an indicator of unmet needs.

ASCOT-SCT4 and other ASCOT measures have been culturally adapted, translated into other languages and applied in research and evaluation studies internationally (Trukeschitz et al, 2020; 2021; Linnosmaa et al, 2020). In England, ASCOT-SCT4 data are routinely collected in an annual survey of adults accessing publicly managed social care, the Adult Social Care Survey (ASCS) (NHS Digital, 2020). These data feed into the Adult Social Care Outcomes Framework (ASCOF) to provide an overarching indicator of the performance of the public social care system in England, against its stated purpose (according to the legislative and regulatory frameworks) of supporting and promoting people's well-being (Department of Health and Social Care, 2018). Of the eight ASCOT-SCT4 domains, one relates to food and drink care-related QoL (*Food and drink*). This aligns the personal QoL outcome and relational conceptualisations of social care need and outcomes, including with regard to food/drink-related care, described earlier.

ASCOT-SCT4 data collected in the ASCS has been applied in various policy analyses, including studies published in the academic literature, to address questions related to the effectiveness and quality of social care services (see, for example, van Leeuwen et al, 2014; Rand and Malley, 2017a; Yang et al, 2017; Longo et al, 2021). In a previous study, ASCOT-SCT4 *Food and drink* care-related QoL data from the 2011/12 ASCS was presented alongside other national data sets to describe patterns of UK food insecurity (Purdam et al, 2016). However, despite the vital importance of the food/drink-related care of older adults living at home, especially if considered through a personal QoL outcomes rather than functional perspective (as enabled by ASCOT-SCT4 data), no previous in-depth analysis of these data has been undertaken to understand the food and drink care-related QoL outcomes and needs of older adults, including any trends over time. Such an application of ASCOT-SCT4 data from the ASCS would contribute to addressing the paucity of evidence of the food and drink care-related QoL outcomes and associated needs of older adults (Watkinson-Powell et al, 2014; Thomas and Emond, 2017; Björnwall et al, 2021). Most previous studies have applied qualitative methods, with a specific and limited focus, while the small number of published quantitative studies apply indicators of (mal)nutrition and/or healthcare utilisation, rather than QoL outcomes, which may not fully capture the effect of social care services on older people's lives (Rand et al, 2024).

Understanding the needs profile of older adults using community-based care and also the factors related to higher risk of unmet needs (defined in terms of social-care-related QoL) could offer insights into system-level performance, including trends over time. These insights may be useful in informing future analysis, research and evaluation studies in other contexts, including the application of ASCOT-SCT4 data to understand food/drink-related unmet needs and outcomes, beyond malnutrition or healthcare utilisation. Therefore, the aim of this article is to establish the profile and trends in food and drink care-related QoL outcomes and unmet needs (defined in terms of care-related QoL) among community-dwelling older adults using publicly managed care services in England, as well as to identify factors related to QoL outcomes and unmet needs, with implications for policy and practice.

Methods

Study design

The study is a secondary quantitative analysis of ASCS data. The ASCS is a mandatory cross-sectional survey of adults using publicly managed social care services in England, conducted annually since 2011. The anonymised ASCS data used in this analysis are publicly available (NHS Digital, 2021).

Study sample and ASCS data collection

The ASCS is a survey of the population of adults (aged 18 or over) in England who access social care services funded or managed by their LA. It does not include adults or their families who self-fund care. This is important to note given the rising number of older people in England with care needs who self-fund, either due to being ineligible or to meet needs while waiting for publicly managed support.

The ASCS is conducted by English LAs based on the guidance issued by NHS England, formerly known as 'NHS Digital' (NHS Digital, 2020). A stratified sample is randomly selected from adults accessing services via the LA. The strata are: (1) adults with a learning disability; (2) other adults aged 18–64 years; (3) other adults over 65 years in residential or nursing care; and (4) other adults over 65 years using community-based services. LAs may exclude people from survey sampling due to changed circumstances (for example, hospitalisation) or concerns over survey fatigue. Anyone excluded is replaced by another person from the same stratum.

The ASCS questionnaire is publicly available, along with details of the survey methodology (NHS Digital, 2021). Data are primarily collected by postal questionnaire, with the option of a telephone or face-to-face interview upon request. The questionnaire collects data (self-report, assisted or proxy report) about the person's satisfaction with their social care support and their overall and care-related QoL using ASCOT-SCT4 (Netten et al, 2012). Data are also collected on the following: the perceived ease of finding information and advice about social care; overall health and the experience of pain/discomfort or anxiety/depression; the ability to undertake everyday ADLs; the suitability of the home environment for their needs; the accessibility of the local environment; whether they received help from friends or family; and whether they contribute financially towards social care support. Further demographic and background data about the person (for example, age and gender) are linked by LAs from social care records.

The analysis presented here uses data from ASCS Waves 1 (in 2011) to 12 (in 2022), using Strata 4 only (that is, adults aged 65 or over who use community-based services). While there have been some minor changes to the ASCS questionnaire over time, these have been relatively minor, for example, reordering or format changes. The survey methodology has also remained relatively consistent. However, there are two notable exceptions. First, the ASCS was voluntary due to the COVID-19 pandemic in 2020/21. Only 18 of the 152 LAs in England submitted a data return. Second, after 2014, the ASCS sample excluded those people who received only equipment and home adaptations, professional support, or short-term residential care and included those people who fully paid for their care ('full-cost clients').

The relative consistency in the survey design and procedure of data collection and reporting over time allows comparison across ASCS waves. To account for the difference between the ASCS pre- and post-2014, we excluded from our analysis those people in the pre-2014 ASCS data sets who received only equipment and home adaptations, professional support, or short-term residential care. We opted to include the voluntary 2020/21 ASCS data in the analysis, but we consider the different procedure for the 2020/21 ASCS in our interpretation of the findings.

ASCOT-SCT4 Food and drink

The analysis presented here draws on data collected using the ASCOT-SCT4 (Netten et al, 2012), with a focus on older adults' responses to the question about *Food and drink* care-related QoL (see Question 3 of the ASCOT-SCT4 questionnaire, which is available here: www.pssru.ac.uk/ascot). The ASCOT-SCT4 definition of *Food and drink* care-related QoL is whether the person 'has a nutritious, varied and culturally appropriate diet with enough food and drink s/he enjoys at regular and timely intervals' (Netten et al, 2012; see also Smith et al, 2017). Care-related QoL is rated against four response statements. These statements are designed to indicate that the person's care-related QoL is either 'ideal state', 'no needs', 'some needs' or 'high-level needs'. The ratings are with regard to the person's wishes, preferences and values rather than an 'objective' external standard as an indicator of the quality and effectiveness of person-centred care in supporting the individual's QoL and addressing their specific QoL-related needs.

Statistical analysis

Descriptive statistics were reported for the study sample. By ASCS year, we reported the ASCOT-SCT4 rating overall and the frequency (percentage) of care-related QoL unmet needs for food and drink.

Regression analyses were conducted to determine the factors associated with ASCOT-SCT4 *Food and drink* care-related QoL (ordered logistic regression) and unmet needs (logistic regression). The following were considered as independent variables: the socio-demographics of the older adults in the sample (ethnicity and gender); disability (overall instrumental activities of daily living [IADLs]/ADLs with difficulty and the ADL of eating and drinking with difficulty); local context (LA type and home design); unpaid help or care from family or friends; financial contribution towards care costs; and survey completion by proxy (that is, when someone – typically a relative – completed the questionnaire on the person's behalf). The survey wave (year) was also considered. These variables were selected based on previous studies and the associated theoretical framework of ASCOT care-related QoL outcomes (van Leeuwen et al, 2014; Rand and Malley, 2017; Forder et al, 2018).

In addition to these variables (see Model 1), both the ordered logistic and logistic regression analyses were repeated to also consider local adult social care intensity per client (see Model 2), which is one of the important variables highlighted in theoretical frameworks of care-related QoL that was missing from the ASCS data (Forder et al, 2018). In this study, the variable was derived from the Adult Social Care Finance

Return (ASCRF) and Short and Long-Term (SALT) care data by taking the gross current expenditure on long-term care for clients aged 65 or over (community) and dividing it by the total number of clients who were supported during the year (community). This estimate of average expenditure per client by LA was then divided by the LA unit cost for an hour of homecare (external) to give an indicator of intensity of care per client, adjusted for local wage factors. As ASCRF and SALT data are only available from 2018 onwards, we present the analyses without consideration of the intensity of social care service use (see Model 1), alongside the analyses that consider local adult social care intensity per client (see Model 2), based on a subsample of the data set, for completeness.

Variables were limited by availability in the ASCS and other data sets that could be linked to the ASCS. Specifically, we were unable to consider age as one of the socio-demographic characteristics. This is because the publicly available ASCS data sets only report whether the respondent is aged 65 or over (yes/no). Ethnicity was also limited to two categories ('white' or 'non-white'), with no further breakdown (see Models 1 and 2). Also, due to the changes in national-level social care data reporting over the period considered in this study's analysis, it was only possible to calculate the local adult social care intensity per client variable (see Model 2) for six of 12 ASCS data collections, that is, from 2017 to 2022.

All results were presented as odds ratios (ORs) and 95 per cent confidence intervals (CIs) based on complete case analysis. The ORs represent the change in odds of reporting a higher category of the dependent variable against the reference category (for example, for unmet needs, it represents the change in odds for 'no unmet needs' against 'unmet needs') for a one-unit increase in the independent variable while holding other variables constant. ORs in ordered logistic regression are commonly interpreted in terms of association between dependent and independent variables, with ORs of less than 1 indicating a 'negative association' and greater than 1 indicating a 'positive association'. We adopt this shorthand in our reporting of the ordered logistic regression analyses. Analyses were conducted in Stata Version 16.0. Details of the Stata do-file code are available from the corresponding author upon request.

Results

Sample characteristics are summarised in Table 1. ASCOT-SCT4 *Food and drink* care-related QoL and unmet needs ratings are reported in Table 2. The majority of respondents rated their food and drink care-related QoL as 'ideal state' or 'no needs'. The rating of unmet needs (that is, 'some needs' and 'high-level needs' combined) ranged from 4.3 per cent of the sample (in 2011) to 8.1 per cent (in 2022), with an overall average of 5.7 per cent of the sample reporting unmet needs. Of these, the majority reported 'some needs', with only around 1 per cent of the sample rating 'high-level needs', which indicates potential for a negative impact of unmet QoL needs on the person's health.

Ordered logistic regression analyses were performed to ascertain the effects of various factors (for example, LA type and survey year) on the likelihood of rating higher ASCOT-SCT4 *Food and drink* care-related QoL (see Table 3), both with (see Model 2) and without (see Model 1) intensity of social care service use. Both models had a statistically significant Chi-square test ($p < .001$), with around 7 per cent of the variance (McFadden's pseudo-r^2) explained by the models.

Table 1: Sample characteristics

	Frequency, *N* (%)
Gender	
Female	204,164 (68.3%)
Male	94,554 (31.7%)
Missing	58 (< 0.1%)
Ethnicity	
White British or Other White	261,537 (87.6%)
Other	28,450 (9.5%)
Missing	8,789 (2.9%)
Type of LA[a]	
Metropolitan district	76,363 (25.5%)
Unitary	85,619 (28.7%)
Shire county	70,479 (23.6%)
Inner London	26,571 (8.9%)
Outer London	39,744 (13.3%)
Difficulty with eating and drinking without help	
No	216,165 (72.3%)
Yes	71,532 (23.8%)
Missing	11,079 (3.6%)
Home design suitability	
Meets needs well	130,957 (43.8%)
Meets most needs	108,639 (36.4%)
Meets some needs	39,327 (13.2%)
Totally inappropriate	7,445 (2.5%)
Missing	12,408 (4.1%)
Have a carer/practical help from family and friends	
Inside home	83,103 (27.8%)
Outside home	138,828 (46.5%)
Inside and outside home	21,328 (7.1%)
No help	39,021 (13.1%)
Missing	16,496 (5.5%)
Privately purchased care	
Yes, own money	107,322 (35.9%)
Yes, family money	16,758 (5.6%)
Yes, own and family money	6,099 (2.1%)
No privately purchased care	147,371 (49.3%)
Missing	21,226 (7.1%)
Proxy report	
No	248,945 (83.3%)
Yes	25,187 (8.4%)

(*Continued*)

Table 1: Continued

	Frequency, *N* (%)
Missing	24,644 (8.3%)
	Mean (SD, min to max)
ADLs with difficulty[b]	4.23 (2.65, 0 to 8)
Average adult social care intensity per client by LA (hours of homecare per year)[b]	527.43 (178.30, 36.61 to 1,473.67)

Notes: [a] Base category: LA (metropolitan). [b] Missing data: ADLs with difficulty (n = 27,663 [9.3 per cent]); average adult social care intensity per client for ASCS Waves 2017 to 2022 (n = 990 [0.79 per cent]). N = 298,776.

For Model 1, there were significant positive relationships between ASCOT-SCT4 *Food and drink* care-related QoL and not privately purchasing any 'top-up' care (OR = 1.182, $p < .001$) and survey year in 2014 and 2018 against the baseline ASCS in 2011 (OR = 1.048, 1.056, $p < .05$). Significant negative associations were observed for older adults living in inner and outer London LAs and for older people who reported a higher number of ADLs with difficulty (OR = .889, $p < .001$), difficulty with eating and drinking (OR = .738, $p < .001$), and home suitability not meeting all needs ($p < .001$). There was also a negative relationship with having help from a non-co-resident family or friend carer, alongside co-resident carers (OR = .871, $p < .001$) or without co-resident carer support (OR = .368, $p < .001$), or having no unpaid help at all (OR = .354, $p < .001$). Negative associations were also found for privately purchased 'top-up' care using family money and own contributions (OR = .958, $p < .05$) or family funds alone (OR = .912, $p < 0.01$). In addition, there were significant negative associations between food and drink care-related QoL and the ASCS year of 2022 (OR = .931, $p < .001$) and completing the questionnaire by proxy report ($p < .001$).

For Model 2, the findings were broadly similar in terms of the pattern of significant associations with rating of food and drink care-related QoL, except QoL ratings were significantly better for older men (OR = 1.033, $p < 0.05$) and where the person's ethnicity was recorded as 'not white British or other white categories' (OR = 1.052, $p < .05$). The negative association between QoL and family paying for care did not reach significance (OR = .989, $p = .71$). Since the data for average intensity of care was only available from 2017 to 2022, the base category in the model was ASCS year 2017 (not 2011, as in Model 1). There was a significant negative association between QoL and the ASCS year of 2022 against the base category of the year of 2017 (OR = .904, $p < .001$). The association between QoL and care intensity was not significant (OR = 1.000, $p = .772$).

The logistic regression of unmet needs (defined using food and drink care-related QoL) is reported in Table 4. Both of these models had a statistically significant Chi-square value ($p < .001$) and explained 11 to 12 per cent of the variance in food and drink care-related unmet needs (McFadden's pseudo-r^2). For Model 1, there was a significantly higher likelihood of unmet needs, after controlling for other factors, for older people whose ethnicity was 'not white British or other white categories' (OR = 1.160, $p < .001$) and older people resident in inner London (OR = 1.224, $p < .001$) or outer London (OR = 1.085, $p < .001$). Reporting a higher number of IADLs/ADLs with difficulty (OR = 1.128, $p < .001$), difficulty with eating and drinking (OR = 1.646, $p < .001$), and that the home environment meets most or

Table 2: ASCOT-SCT4 *Food and drink* **QoL and unmet needs by ASCS year**

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ASCS sample (*N*)	29,650	28,204	28,618	29,255	28,449	28,584	27,902	23,582	25,206	23,598	2,535	23,193
% of ASCS sample												
ASCOT ideal state	62.5%	61.8%	62.4%	62.1%	60.0%	58.3%	59.4%	60.2%	58.9%	58.8%	59.5%	57.1%
ASCOT no needs	30.1%	29.9%	29.5%	29.5%	31.2%	31.5%	30.3%	29.8%	30.5%	30.0%	29.4%	30.9%
ASCOT some needs	3.7%	3.7%	3.9%	3.9%	4.9%	5.0%	5.1%	5.3%	5.3%	5.5%	4.7%	6.8%
ASCOT high-level needs	0.6%	0.7%	0.7%	0.8%	0.9%	1.0%	1.1%	1.0%	1.1%	1.1%	1.1%	1.3%
Missing data	3.1%	3.9%	3.5%	3.7%	3.0%	4.2%	4.1%	3.7%	4.2%	4.6%	5.3%	3.9%
Unmet needs	**4.3%**	**4.4%**	**4.6%**	**4.7%**	**5.8%**	**6.0%**	**6.2%**	**6.3%**	**6.4%**	**6.6%**	**5.8%**	**8.1%**

Table 3: Ordered logistic regression: food and drink care-related QoL

Variable	Model 1		Model 2	
	OR	95% CIlower, upper	OR	95% CIlower, upper
Gender: male	.994	.975, 1.013	1.033*	1.003, 1.064
Ethnicity: other than white	.998	.967, 1.030	1.052*	1.005, 1.100
LA				
Unitary	.992	.969, 1.016	.974	.939, 1.010
Shire county	.976	.952, 1.000	.986	.949, 1.026
Inner London	.840***	.811, .870	.843***	.798, .890
Outer London	.917***	.890, .945	.904***	.863, .946
IADLs/ADLs with difficulty	.889***	.885, .893	.910***	.903, .917
Eating and drinking with difficulty	.738***	.720, .756	.711***	.686, .738
Suitability of home[a]				
Meets most needs	.478***	.469, .488	.478***	.464, .493
Meets some needs	.312***	.303, .320	.303***	.291, .316
Totally inappropriate	.265***	.251, .280	.268***	.248, .290
Have a carer/help from friends/family				
Outside home	.368***	.360, .377	.358***	.346, .370
Inside and outside home[a]	.871***	.839, .904	.880***	.831, .932
None	.354***	.343, .365	.358***	.342, .376
Privately purchased care[a]				
Yes, family money	.958*	.923, .996	.989	.935, 1.046
Yes, own and family money	.912**	.859, .968	.859**	.786, .938
No privately purchased care	1.182***	1.160, 1.205	1.147***	1.115, 1.180
Response by proxy report	.890***	.863, .916	.889***	.851, .929
Survey year[a]				
2012	1.007	.967, 1.047		
2013	1.038	.997, 1.080		
2014	1.048*	1.007, 1.090		
2015	.996	.957, 1.036		
2016	.965	.927, 1.004		
2017	1.031	.990, 1.073		
2018	1.056*	1.012, 1.102	1.018	.971, 1.067
2019	1.004	.963, 1.047	.973	.930, 1.018
2020	1.017	.974, 1.060	.985	.940, 1.031
2021	1.077	.974, 1.190	1.045	.942, 1.158
2022	.931***	.892, .971	.904***	.864, .947

(*Continued*)

Table 3: Continued

Variable	Model 1		Model 2	
	OR	95% CIlower, upper	OR	95% CIlower, upper
Average care intensity per client by LA			1.000	.999, 1.000
N	228,256		93,735	
McFadden's pseudo-r^2	7.5%		7.1%	
Likelihood ratio χ^2	29,101, df = 29, p < .001		11,756, df = 24, p < .001	

Notes: [a] Base category: LA (metropolitan); suitability of home (meets all needs); informal care/practical help (inside home); privately purchased care (own money); survey year (Model 1: 2011; Model 2: 2017). $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Table 4: Logistic regression: unmet needs (using food and drink care-related QoL)

Variable	Model 1		Model 2	
	OR	95% CIlower, upper	OR	95% CIlower, upper
Gender: male	.891***	.856, .928	.869***	.819, .921
Ethnicity: other than white	1.160***	1.094, 1.229	1.075	.991, 1.167
LA[a]				
Unitary	.986	.938, 1.037	1.044	.972, 1.121
Shire county	.949	.099, 1.002	.966	.894, 1.045
Inner London	1.224***	1.144, 1.309	1.215***	1.099, 1.342
Outer London	1.085**	1.022, 1.152	1.131**	1.038, 1.230
I/ADLs with difficulty	1.128***	1.117, 1.140	1.107***	1.091, 1.124
Eating and drinking with difficulty	1.646***	1.568, 1.727	1.664***	1.553, 1.783
Suitability of home[a]				
Meets most needs	1.929***	1.840, 2.023	1.871***	1.748, 2.002
Meets some needs	4.176***	3.965, 4.398	4.040***	3.375, 4.352
Totally inappropriate	6.310***	5.829, 6.831	5.647***	5.043, 6.322
Have a carer/help from friends/family				
Outside home	3.845***	3.644, 4.055	3.983***	3.689, 4.300
Inside and outside home[a]	1.332***	1.214, 1.460	1.327***	1.161, 1.516
None	5.283***	4.950, 5.639	4.908***	4.464, 5.396
Privately purchased care[a]				
Yes, family money	.954	.885, 1.028	.926	.832, 1.030
Yes, own and family money	1.081	.964, 1.121	1.183*	1.010, 1.386
No privately purchased care	.849***	.817, .883	.896***	.847, .947
Response by proxy report	1.101**	1.039, 1.167	1.077	.993, 1.168
Survey year[a]				
2012	1.008	.920, 1.105		

(*Continued*)

Table 4: Continued

Variable	Model 1		Model 2	
	OR	95% CIlower, upper	OR	95% CIlower, upper
2013	1.025	.936, 1.122		
2014	1.037	.948, 1.134		
2015	1.146**	1.050, 1.249		
2016	1.196***	1.097, 1.304		
2017	1.221***	1.120, 1.330		
2018	1.196***	1.094, 1.308	.919	.838, 1.008
2019	1.238***	1.133, 1.352	.956	.874, 1.045
2020	1.259***	1.151, 1.378	.971	.888, 1.063
2021	1.084	.879, 1.336	.808*	.654, .998
2022	1.567***	1.437, 1.707	1.218***	1.117, 1.327
Average care intensity per client by LA			.999**	.999, 1.000
Constant	.005***	.004, .006	.008***	.007, .010
N	228,256		93,735	
McFadden's pseudo-r^2	12.0%		11.1%	
Likelihood ratio χ^2	12,366, df = 29, $p < .001$		5,320, df = 24, $p < .001$	

Notes: [a] Base category: LA (metropolitan); suitability of home (meets all needs); informal care/practical help (inside home); privately purchased care (own money); survey year (Model 1: 2011; Model 2: 2017).
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

some needs or is totally unsuitable (all $p < .001$), as well as proxy completion of the questionnaire (OR = 1.01, $p < .001$), were also associated with an increased likelihood of reporting food and drink care-related unmet needs. All survey years from 2015 onward ($p < .001$), except for 2021 (OR = 1.084, $p = .451$), were also significantly associated with a higher likelihood of unmet needs. A significantly lower likelihood of reporting unmet needs was observed for older men compared to women (OR = .891, $p < .001$) and where the older person had not privately purchased care (OR = .849, $p < .001$).

For Model 2, the findings were similar to Model 1 in terms of the observed significant associations with increased likelihood of unmet needs, except that ethnicity (OR = .869, $p = .08$) and proxy response (OR = 1.077, $p = .07$) no longer reached significance after average care intensity per client by LA was taken into account. There was also a significant positive association with increased likelihood of unmet needs for purchasing care with combined family and own funds (OR = 1.183, $p = .04$). In considering the survey year, older people in the 2021 survey were less likely to report unmet needs (OR = .808, $p = .05$), but respondents to the 2022 survey were more likely to report unmet needs (OR = 1.218, $p < .001$). Those older people resident in LAs with a higher average intensity of care per client were significantly less likely to report unmet needs (OR = 1.000, $p < .01$). In all four models, there was no evidence of multicollinearity, with a variance inflation factor (VIF) of ≤ 2 for all variables.

Discussion

While community-based social care services deliver food/drink-related care for older adults, there is a paucity of evidence on the role of community-based care in supporting older adults' QoL outcomes and addressing needs (Watkinson-Powell et al, 2014; Thomas and Emond, 2017; Björnwall et al, 2021; Rand et al, 2024). This article has sought to establish the profile of the food and drink care-related unmet needs and care-related QoL outcomes of older adults using community-based social care services in England. This was made possible by using data routinely collected in a national survey of social care service users in England, the ASCS, using the ASCOT-SCT4 measure of social care-related QoL. The study found that between 4.3 per cent (in 2011) and 8.1 per cent (in 2022) of the older adults surveyed in the ASCS reported unmet needs, as defined using the ASCOT-SCT4's *Food and drink* social care-related QoL rating. While the percentage of older adults who reported the highest level of unmet needs (that is, with actual or potential negative health impact) remained relatively stable and low (at around 1 per cent) between 2011 and 2022, our analysis demonstrates that an increasing proportion of older adults over time have some unmet needs. Our findings indicate that the public long-term care system in England is operating under pressure, which means that it is not consistently able to respond to older people's needs and support outcomes in the way it is designed to, even when it comes to basic care related to food and drink. This is of particular concern when the analysis presented here focuses only on those older adults who have already been found eligible and subsequently access publicly managed social care services to address their needs.

The regression analyses presented here consider trends over time in older adults' care-related QoL and need from the ASCS baseline year (2011), after controlling for other factors that may also affect QoL (for example, varying levels of older adults' functional need or the percentage of older adults with family/friend carers). This is fairer than descriptive comparisons, as it accounts for underlying variation in the population and its needs over time and indicates the English social care system's performance over time as regards its ability to support older adults' QoL and address their needs. Compared to the ASCS baseline year (2011), which allows a point of comparison in the absence of an objective standard, we found a significant decrease in older adults' rating of food and drink care-related QoL in the 2022 ASCS after controlling for other factors. In two previous survey years (2014 and 2018), by contrast, older adults' food and drink care-related QoL was significantly higher than the baseline (in 2011). The decrease in 2022 may be related to the impact of the COVID-19 pandemic and cost-of-living increases, which disproportionately affected older adults with low or fixed household incomes. However, there is no consistent trend over time, so these findings need to be interpreted with caution. When considering older adults' food and drink care-related unmet needs, defined in terms of QoL, there is a trend of increasing unmet needs from 2015 to 2022, except for 2021. This year's data need to be interpreted with caution, however, as it was an opt-in ASCS with a limited sample of self-selected LAs that participated in a voluntary survey due to the pandemic; they are likely to represent better-resourced LAs equipped to respond to both pandemic and social care pressures. The trend of an increased likelihood of older adults reporting unmet needs over time (from 2015 to 2022) may be due to

the cumulative effect of social care system-wide pressures in England. These pressures include the chronic underfunding of the care system, despite increasing demand due to ageing populations, as well as workforce shortages (Foster, 2022; House of Lords Adult Social Care Committee, 2022) and reduced meals services due to rising costs (National Association of Care Catering, 2018), alongside rising rates of food poverty among UK older people (Purdam et al, 2019). These issues are not specific to England; however, a potential barrier to effectively tackling the issue is the relative lack of public awareness and policy interest in food poverty among older adults in England by comparison to younger adults and children, where policy interventions (for example, free school meals) are widely discussed (Purdam et al, 2016; 2019). The findings of this article suggest that further attention and action are required.

Our analysis has also identified differences in the pattern of association with older adults' food and drink care-related QoL and likelihood of reporting unmet needs by LA type. Older adults' residence in inner and outer London boroughs was associated with poorer QoL outcomes and increased likelihood of reporting unmet needs, even after controlling for differences in average care intensity per client by LA. This finding indicates that there are particular challenges in addressing the food/drink-related needs and supporting the QoL outcomes of older adults living in London boroughs. This may reflect variation in social, geographic or environmental factors that may influence food and drink care-related QoL/need (for example, local transport and accessibility) or adult social care workforce or LA organisational factors, which were not considered in this analysis due to the limitations of the ASCS data set. Indeed, previous studies have considered the effect of some of these factors on malnutrition, including local area accessibility, the availability and type of local food outlets, and transport (Purdam et al, 2019; Dickinson et al, 2022). Further investigation is warranted to understand why older adults living in London boroughs are at higher risk of unmet needs and poorer food/drink-related QoL outcomes in order to develop targeted policy responses and intervention.

In considering LA-level variation in average care intensity per person, which can be understood as an indicator of investment in public social care services, we found that higher average care intensity was significantly related to a lower likelihood of older adults reporting unmet needs. This provides evidence in support of the argument for investment in care provision in order to reduce unmet food and drink care-related needs, as defined using a personal outcomes perspective. It may also logically follow that such investment and reduction of unmet needs (defined against QoL outcomes) should also reduce rates of malnutrition/dehydration and associated healthcare expenditure by community-dwelling older adults. However, longitudinal analysis, with linked data, that also considers healthcare utilisation and expenditure would be required to further explore and evidence this. While it is not possible with the current data sets, such analysis may be possible in the future under proposals for the greater integration and sharing of health and social care data sets with individual-level data in England (Department of Health and Social Care, 2023).

In our analyses, we have considered factors either found to be associated with overall ASCOT-SCT4 QoL in other studies or that could be expected to be based on the theoretical framework applied in these studies (van Leeuwen et al, 2014; Rand and Malley, 2017; Forder et al, 2018). This was to control for these factors when considering differences in food and drink care-related QoL or unmet needs, whether over time, by LA social care expenditure or by LA type, as discussed earlier. However,

these findings are also relevant for policy and practice, so they are briefly considered here. First, consistent with previous studies of ASCOT-SCT4 QoL (van Leeuwen et al, 2014; Rand and Malley, 2017; Forder et al, 2018), we found that older adults with difficulty with IADLs/ADLs and eating/drinking and those who reported that their home was not well designed for their needs were more likely to report lower QoL and the higher likelihood of unmet needs. Likewise, proxy report, if taken as an indicator of cognitive impairment, was also associated with poorer QoL and the higher likelihood of unmet needs, even if some caution is required in interpretation, as differences may also be due to inherent differences between self- and proxy reports (Rand and Caiels, 2015; Caiels et al, 2019). Help from a co-resident family member, friend or partner was associated with better food and drink care-related QoL and the lower likelihood of reporting unmet needs, compared to those older adults who did not receive any help or received help from someone outside of the home, whether alone or combined with help from someone inside the home. This highlights the vital role of family or friends carers, especially co-resident carers, in supporting older adults with their food and drink care-related QoL outcomes and addressing needs, which aligns with other studies that have found a greater risk of malnutrition for those older adults who live alone (see, for example, Soini et al, 2006).

In addition to these factors, we also considered the private purchase ('self-funding') of services, which can be used to supplement publicly funded social care. We found that such private purchasing of care by the older person on their own using their own resources, without family financial support to 'top up' their care, was associated with better QoL and the lower likelihood of unmet needs. This may partly reflect a behavioural response to social care services that do not adequately address the person's personal preferences or values; that is to say, if publicly funded care adequately addresses the person's needs in a way that is acceptable and accords with their preferences, then that person is less likely to choose to pay extra for additional or alternative services. Interestingly, however, there was a negative association between older people's food and drink care-related QoL and the private purchase of care that relies on family financial support. This may reflect the impact of negotiations between the older adult and their family members over accessing and funding their care. This finding warrants further investigation in future studies, especially in cases where self-funding requires negotiations between individuals within families.

Finally, we also considered older adults' personal characteristics among the variables in the analysis, namely ethnicity and gender. Older UK adults from minoritised ethnicities were found to be more likely to report unmet needs (see Model 1, without the average care intensity variable), which corresponds to evidence from qualitative studies of community-based care in England. These studies found that similar challenges are faced by all older adults and their families in accessing care services, but there are additional barriers that particularly affect minority ethnic older adults and their families, for example, low awareness of services, language barriers (Greenwood et al, 2015; Parveen et al, 2017) and cultural or religious considerations (Nair et al, 2022). Interestingly, however, the inclusion of average care intensity per client by LA affected the association with ethnicity, as well as gender, in our analysis. After controlling for LA-level variation in care intensity, older men and those from 'non-white' minority ethnic backgrounds have better food and drink care-related QoL, and the significant association between minority ethnic background and the higher likelihood of reporting unmet needs no longer reaches significance. This

could indicate that the differences in QoL outcome and unmet needs by individual characteristics like ethnicity and gender are, at least partly, affected by local investment in public social care systems and their ability to respond flexibly to the older adult population's needs. It highlights the vital role of services (and the system that funds, organises and delivers them) in supporting especially those older adults who are from minoritised or vulnerable groups (for example, isolated older people, without a surviving spouse or family) and may be at risk of inequalities or disparities that affect ageing and the life-course trajectory.

In addition to its specific findings and implications, as outlined earlier for older adults and social care services in England, this article has also illustrated the potential of applying the concept of food and drink-related QoL outcomes and needs in research and evaluation internationally, whether in country-specific or comparative studies. The ASCOT-SCT4 *Food and drink* QoL and unmet needs indicators allow consideration of the impact of social care planning and delivery on people's lives in a way that captures the broader impact of care on an individual's QoL. This includes whether services are able to respond to the psychosocial, cultural, religious and personal/social significances of food and drink in care planning and delivery, which is an important feature of good-quality person-centred care. This would complement the dominant focus on functional capabilities in the current literature and improve our current understanding of older adults' nutritional and hydration needs and QoL (Rand et al, 2024).

The study has a number of limitations. First, the analyses were limited by the variables available in the publicly available ASCS data set. It does not, for example, include individual-level intensity. The data set also conflates White British with all other white ethnicities, including racially minoritised people (for example, Roma), into one group ('white'), with all other ethnic groups categorised as 'non-white'. This does not provide sufficient granularity for an in-depth analysis of the effect of ethnicity on needs and outcomes. Second, the ASCS and other data sets available for linkage do not allow for the consideration of other potentially important factors, especially individual household finances or income, food poverty or insecurity, transportation and the accessibility of food outlets, and the detail of the exact type(s) or mix and intensity of social care received by the person. Third, the ASCS, as a survey of adults accessing publicly managed social care, excludes most self-funders unless they request LA support as full-cost clients, who make up the majority of people accessing homecare in England (National Audit Office, 2021). Further research is required to understand the profile of care-related QoL outcomes and unmet needs of self-funders, as well as those who do not access care at all but may still have care-related QoL needs, in comparison to the ASCS sample of older adults who access support via the LA. In the English context, this is important because the ongoing pressure on public services contributes to older adults and their families either seeking to manage without adequate support or opting to purchase care with private funds (self-funding) without LA involvement. Despite these limitations, the article has provided insight into the profile of food and drink care-related QoL outcomes and unmet needs of older people using publicly managed social care services in England. It has particularly provided insight into how the profile of QoL and unmet needs has changed over time from 2011 to 2022 and is influenced by LA social care investment and location/type of LA, as well as by other factors (for example, family/friend care and the private purchasing of care), which have implications for policy and practice.

Conclusion

This study has provided evidence of food/drink-related QoL and unmet needs among a series of annual cross-sectional samples of community-dwelling older adults in England who use publicly managed care. Between 4.3 and 8.1 per cent of the sample (in 2011 and 2022, respectively) reported that they had unmet needs related to food and drink. Factors related to the higher likelihood of older adults reporting unmet needs included female sex/gender, minoritised ethnicity, living in a London borough, living in a home that does not suit needs, functional limitations (overall, eating and drinking, and proxy response), not having a co-resident family carer and privately purchasing care with their own funds. There was also a significant increased likelihood of unmet needs by survey year, which remained significant even after controlling for LA-level variation in average care intensity for older people accessing services. This care intensity was also associated with an increased likelihood of unmet needs. This analysis has illustrated the potential for understanding the impact of community-based care on both QoL and unmet needs, specifically related to food and drink. There is potential for further research, both in England as systems for the collection and sharing of individual-level health and social care data advance (Department of Health and Social Care, 2023) and also in other contexts, to better understand and evidence the impact and effectiveness of homecare or other community-based interventions in addressing older adults' food and drink care-related needs.

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Conflict of interest
Stacey Rand is a member of the Adult Social Care Outcomes Toolkit (ASCOT) development team at the University of Kent, UK (see: www.pssru.ac.uk/ascot) and the Social Services User Survey Group (SSUSG), which advises on the conduct of the Adult Social Care Survey (ASCS). The authors have no other conflicts of interest to declare.

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