

Screening for sarcopenia in older community-dwelling adults: findings from the Southampton Longitudinal Study of Ageing (SaLSA)

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Background

- The number of persons aged 80 years or older is expected to increase between years 2020 and 2050, reaching 426 million.
- The prevalence and burden of multiple morbidity, dementia, sarcopenia and frailty will increase.
- Sarcopenia is associated with a variety of adverse health and economic outcomes ranging from falls, fractures, hospitalisation and high health care cost in older adults.
- The SARC-F questionnaire can be rapidly implemented by clinicians to identify patients with probable sarcopenia.

Objectives

Using data from SaLSA:

- We sought to identify the prevalence and demographic correlates of probable sarcopenia (SARC-F score ≥ 4) in community-dwelling older adults living in Southampton, UK.
- SARC-F is based on 5 questions that determine:
 - Strength (S),
 - Assistance needed with walking (A),
 - Capability to rise from a chair (R),
 - Stair climbing ability (C),
 - History of falls (F),
- On a rating scale 0-2 from 'not at all' to 'very difficult'; maximum score of 10.
- A score of ≥ 4 identifies individuals at risk of adverse outcomes from sarcopenia.

Methods

- 480 participants (219 men, 261 women) were identified from Primary Care database.
- Each completed a questionnaire to ascertain demographic, lifestyle factors, comorbidities, nutrition risk score (DETERMINE checklist) and SARC-F score.
- Participant characteristics in relation to probable sarcopenia were examined using sex-stratified logistic regression. Age was included as a covariate.

Results

- The median (lower quartile, upper quartile) age was 79.8 (76.9, 83.5) years (**Table 1**).
- 12.8% of men and 23% of women had probable sarcopenia (**Table 1**).
- Self-reported walking speed strongly associated with probable sarcopenia (men: odds ratio (OR) 10.39 (95% CI: 4.55, 23.72), $p < 0.001$; women: 11.42 (5.98, 21.80), $p < 0.001$ per lower band – data not shown).
- Older age was associated with probable sarcopenia in both sexes ($p = 0.01$) as was higher DETERMINE score (men: 1.30 (1.12, 1.51), $p = 0.001$; women: 1.32 (1.17, 1.50), $p < 0.001$ per unit increase) (**Table 2**).
- In men, being married or in a civil partnership or cohabiting was protective against probable sarcopenia (0.39 [0.17, 0.89], $p = 0.03$) as was reporting drinking any alcohol (0.34 [0.13, 0.92], $p = 0.03$) (**Table 2**).
- In women higher BMI (1.14 [1.07, 1.22], $p < 0.001$ per unit increase) and presence of comorbidities (1.61 [1.34, 1.94], $p < 0.001$ per extra medical condition) were also associated with probable sarcopenia (**Table 2**).
- All associations were robust after adjustment for age.

Conclusions

- Probable sarcopenia (SARC-F score ≥ 4) was common in older adults living in their own homes.
- In addition to advancing age, malnutrition, physical and socio-demographic factors were also important in conferring a risk of probable sarcopenia.
- Identifying the above factors in clinical practise should trigger further objective measurements of sarcopenia.

Table 1. Participant characteristics	Men (n=219)	Women (n=261)
Age (years)	79.6 (76.7, 83.2)	80.0 (77.2, 83.7)
High educational attainment	54 (24.7%)	38 (14.6%)
Lives in their own property	185 (86.4%)	223 (87.5%)
Marital status (married/civil partnership/cohabiting)	151 (69.9%)	99 (38.1%)
Self-reported height (cm)	174.8 (7.6)	160.6 (6.2)
BMI (kg/m ²)	26.0 (3.4)	26.5 (5.1)
Ever smoked regularly	134 (61.8%)	98 (37.8%)
Currently drink alcohol	191 (87.2%)	185 (71.2%)
DETERMINE malnutrition score	3.0 (1.0, 5.0)	3.0 (1.0, 5.0)
Number of comorbidities	2.0 (1.0, 3.0)	2.0 (1.0, 3.0)
Lost >10 pounds unintentionally in past year	21 (9.6%)	18 (7.0%)
Self-reported exhaustion in the past week (≥ 3 days)	39 (18.0%)	70 (27.5%)
High SARC-F score (≥ 4)	28 (12.8%)	60 (23.0%)

Table 2 Odds ratios for having probable sarcopenia (SARC-F score ≥ 4) (walking speed excluded)

Characteristic	Men				Women			
	Age-adjusted		Mutually-adjusted		Age-adjusted		Mutually-adjusted	
	Odds ratio (95% CI)	P	Odds ratio (95% CI)	P	Odds ratio (95% CI)	P	Odds ratio (95% CI)	P
Age (years)	1.10 (1.02, 1.19)	0.013	1.07 (0.96, 1.19)	0.204	1.08 (1.02, 1.14)	0.011	1.10 (1.01, 1.19)	0.008
Lives in own property	0.86 (0.28, 2.62)	0.788	0.98 (0.31, 3.10)	0.969	0.30 (0.14, 0.66)	0.003	0.29 (0.09, 0.87)	0.027
Married/partnership/cohabiting	0.39 (0.17, 0.89)	0.026	0.98 (0.31, 3.10)	0.969	0.55 (0.28, 1.07)	0.080	1.10 (1.01, 1.19)	0.023
BMI (kg/m ²)	1.04 (0.92, 1.18)	0.510	0.45 (0.12, 1.69)	0.238	1.14 (1.07, 1.22)	<0.001	1.10 (1.01, 1.19)	0.023
Currently drink alcohol	0.34 (0.13, 0.92)	0.033	0.45 (0.12, 1.69)	0.238	0.65 (0.35, 1.20)	0.166	1.11 (0.95, 1.31)	0.187
DETERMINE malnutrition score	1.30 (1.12, 1.51)	0.001	1.29 (1.08, 1.55)	0.005	1.32 (1.17, 1.50)	<0.001	1.34 (1.05, 1.71)	0.017
Number of comorbidities	1.27 (0.99, 1.62)	0.059	7.13 (2.52, 20.13)	<0.001	1.61 (1.34, 1.94)	<0.001	4.00 (1.75, 9.11)	0.001
Self-reported exhaustion in the past week (≥ 3 days)	7.77 (3.20, 18.83)	<0.001	7.13 (2.52, 20.13)	<0.001	9.36 (4.80, 18.26)	<0.001	4.00 (1.75, 9.11)	0.001

Odds ratios presented for age are univariate in the column showing the age-adjusted associations