Functional Dependency as a Marker for Positive SARC-F Screen among Older Persons at the Emergency Department

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Background: Functional dependency may serve as a marker for positive SARC-F screen (Strength, Assistance with walking, Rise from a chair, Climb stairs and Falls) among older adults at the Emergency Department (ED). We compared functional dependency between SARC-F– (<4) and SARC-F+ (≥4) groups at the ED. **Methods:** A secondary analysis of cohorts from two quasi-experimental studies among patients aged ≥65 years old presenting to the ED of a 1,700-bed tertiary hospital. We compared both groups for baseline characteristics using univariate analyses, and performed multiple linear regression to examine the association between Modified Barthel Index (MBI) and Lawton's instrumental activities of daily living (IADL) against SARC-F, and binary logistic regression to examine the associations between individual ADL domains and SARC-F+. We compared the area under receiver operating characteristic curves (AUC) to detect SARC-F+ for MBI, IADL, frailty, age, cognition and comorbidity. **Results:** SARC-F+ patients were older (86.4±7.6 years), predominantly female (71.5%) and frail (73.9%), more dependent on walking aids (77.2%), and had lower premorbid MBI (median 90.0 [interquartile range 71.0–98.0]) and IADL (4.0 [2.0–5.0]) (both p<0.001). MBI (β=–0.07, 95% confidence interval [CI] –0.086 to –0.055) and IADL (β=–0.533, 95% CI –0.684 to –0.381) were significantly associated with SARC-F. Dependency in finances (odds ratio [OR]=14.7, 95% CI 3.57–60.2, p<0.001), feeding (OR=12.4, 95% CI 1.45–106, p=0.022), and stair-climbing (OR=10.49, 95% CI 4.96–22.2, p<0.001) were the top three functional items associated with SARC-F. MBI (AUC=0.82, 95% CI 0.77–0.84) and IADL (AUC=0.78, 95% CI 0.72–0.84) showed superior discrimination for SARC-F+ compared to other measures (AUC=0.58–0.70). **Conclusion:** Functional dependency is strongly associated with positive SARC-F screen among older adults at the ED. This highlights the need for increased vigilance, especially in the presence of dependency in relevant domains such as managing finances, feeding, and stair-climbing.

Key Words: Sarcopenia, Functional status, Geriatrics, Emergency medicine

INTRODUCTION

Sarcopenia is defined by the Asian Working Group for Sarcopenia (AWGS) as an age-related loss of muscle mass with diminished muscle strength and physical performance.[1] Its prevalence by AWGS-recommended algorithm among community-dwelling persons ranged between 13.6% to 41%.[2,3] Frailty, however, refers specifically to a broader syndrome characterized by multisystem impairment and increased vulnerability to stressors.[4] Being well-recognized as 'modern' geriatric giants,[4,5] sarcopenia and frailty appear to share similar clinical manifestations in physical and functional domains and are associated with a myriad of adverse outcomes including higher falls risk, functional decline and mortality.[6-9] Additionally, sarcopenia is the antecedent and biological

substrate of frailty.[4] Hence, this underscores the importance of early identification of older adults at risk of sarcopenia during every healthcare encounter.[9]

The SARC-F (Strength, Assistance with walking, Rise from a chair, Climb stairs and Falls) is recommended by the AWGS 2019, European Working Group on Sarcopenia in Older People 2 (EWGSOP2) and Singapore Clinical Practice Guidelines (CPG) for Sarcopenia as a case-finding measure to identify older persons at risk of sarcopenia.[1,10-13] It comprises five components (0–2 points each): strength, assistance with walking, rise from a chair, climb stairs, and falls.[14] At a cutoff of ≥ 4, the SARC-F is well-validated for use in various clinical settings including the community, outpatients, hemodialysis, cancer care, and the emergency department (ED).[15-19] Whilst the SARC-F exhibits low sensitivity albeit high specificity for case detection of sarcopenia in the community setting, it is strongly predictive of adverse health outcomes including reduced physical performance, loss of functional independence, and low quality of life.[20]

In 2020, the World Health Organization[21] reported that an estimate of 14% of older persons globally are fully dependent in their basic needs. Additionally, they emphasized the importance of healthy aging, which is the process of developing and maintaining the functional ability that enables wellbeing in older age.[21] Hence, functional measures should be routinely included as fundamental components of geriatric assessments to aid with the development of targeted and timely interventions that may mitigate further functional loss.[22]

To the best of our knowledge, there remains a paucity of evidence examining the association between functional dependency and sarcopenia among older adults attending the ED. Our previous study highlighted the potential for sarcopenia case-finding using the SARC-F at the ED, which demonstrated excellent diagnostic ability good sensitivity-cum-specificity for frailty detection, and predictive validity for the outcomes of ED re-attendance and rehospitalization.[19] Despite this, sarcopenia screening of older adults is often not done in the busy ED setting.

Against this backdrop, functional dependency may serve as a marker for positive SARC-F screen amongst older adults presenting to the ED. Thus, using SARC-F to identify patients at risk of sarcopenia, we aimed to examine the association as well as the discriminatory ability of functional dependency and positive SARC-F screen (defined as a score of ≥ 4) among older adults attending the ED.

MATERIALS AND METHODS

Study Design and Recruitment Process
This is a secondary analysis of participants from two separate studies from the Emergency Department Interventions for Frailty (EDIFY) program.[23,24] Both studies were conducted between July 2018 to August 2019 at the ED of a 1,700-bed tertiary hospital. Participants aged 65 years and above were recruited into either intervention or non-intervention groups, via alternating weekly blocks, within their respective studies. The first study evaluated the effectiveness of early geriatric specialist interventions in reducing potentially avoidable acute admissions (n = 100; mean age 90.0 ± 4.1 years),[23] while the second study evaluated the effectiveness of a multicomponent frailty intervention in preserving or improving function among older ED attendees (n = 140; mean age 79.7 ± 7.6 years).[24] Further details of the studies' recruitment criteria can be found in Supplementary Fig. S1. Written informed consent was obtained from patients or their legally acceptable representative (if they lacked mental capacity). Ethics approval was granted by the Domain Specific Review Board of the National Healthcare Group, Singapore (Reference: 2017/01076). This study complied the ethical guidelines for authorship and publishing in the *Annals of Geriatric Medicine and Research*.[25]

Functional & Sarcopenia Assessment
The Modified Barthel Index (MBI, range 0–100) was used to assess premorbid basic activities of daily living (ADL).[26] The measure comprises various functional abilities including chair/bed transfers, ambulation/wheelchair, stair-climbing, toilet transfers, bowel control, bladder control, bathing, dressing, personal hygiene, and feeding. Each functional domain has different total scores with dependency for each item defined as any score less than the maximum achievable score. Premorbid instrumental ADL was evaluated using Lawton's Instrumental Activities of Daily Living (IADL, range 0–8) comprising eight domains including telephone use, shopping, food preparation, housekeeping, laundry, transportation, medications, and handling finances.[27] Each domain generates a score of 0 (dependent) or 1 (independent).

The SARC-F (range 0–10)[14] was used for identifying patient at risk of sarcopenia. In a previous study of older patients at the ED, the SARC-F had good diagnostic performance for frailty identification and was able to predict acute hospitalization and ED reattendance at 3-month.[19] The questionnaire was administered by a trained research assistant with participants being categorized into SARC-F– (score < 4) and SARC-F+ (score ≥ 4) groups. The cutoff score of ≥ 4 has been reported to have moderate to high specificity (68.9%–88.9%) for case detection for sarcopenia.[28]

Baseline Characteristics

We gathered information on demographics (age, sex, ethnicity, education, and smoking status), comorbidities (Charlson Comorbidity Index [CCI]),[29] medications, cognitive status (Abbreviated Mental Test [AMT]),[30] functional status (MBI and IADL),[26,27] and frailty status (Clinical Frailty Scale [CFS]).[31]

Statistical Analyses

Univariate analyses were performed using chi-square or Fisher exact test (when a cell has an expected value of ≤ 5) for categorical variables, and independent sample t-test (parametric) or Mann-Whitney U test (non-parametric) for continuous variables. Multiple linear regression was performed, adjusting for covariates—Model 1 (age and sex) and Model 2 (age, sex, education, smoking status, polypharmacy, AMT, CCI, and CFS)—to examine the association for MBI and IADL scores, against SARC-F. Additionally, multicollinearity test was performed examining tolerance and variance inflation factor (VIF). We then performed binary logistic regression, adjusting for the abovementioned covariates, to examine independent associations between dependency in individual functional domains for MBI and IADL, against SARC-F+. Lastly, we compared area under the operating characteristic curves (AUC) for age, CFS, CCI, MBI, IADL, and AMT against SARC-F and identified optimal cut-off scores using Youden's index. Statistical analyses were performed using SPSS version 21.0 (IBM Corp., Armonk, NY, USA) and statistical significance was assessed using a threshold of 5%.

RESULTS

Recruitment and Baseline Characteristics

A total of 2,379 patients were screened: 1,520 patients were planned for acute admission while 859 patients were managed at the ED observation unit with an anticipated stay of < 24 hours. Two-thousand-and-two patients did not meet study criteria and an additional 137 patients declined study participation. Hence, a sum of 240 participants were recruited into both the studies (Supplementary Fig. S1).

Overall, 123 participants (51.3%) were SARC-F+ with significantly higher SARC-F scores (mean, 5.7 vs. 1.7; p < 0.001) (Table 1) compared to their SARC-F– counterparts. They were also significantly older (mean age, 86.4 vs. 81.4 years) and predominantly female (71.5% vs. 58.1%). Additionally, the SARC-F+ group had fever years of education (≥ 6 years, 26.0% vs. 44.4%), higher comorbidity burden (mean CCI, 2.6 vs. 2.0), higher prevalence of polypharmacy (80.5% vs. 64.1%), lower cognitive scores (mean AMT, 6.8 vs. 8.1), and greater frailty prevalence (73.9% vs. 41.9%)

(all p < 0.05).

The SARC-F+ group had significantly lower premorbid MBI scores (median, 90 vs. 100; p < 0.001) compared to their SARC-F– counterparts (Table 1). Furthermore, only 20 participants (16.3%) had full MBI scores compared to 71 participants (60.7%) in the SARC-F– group. SARC-F+ participants also had significantly lower premorbid IADL scores compared to their SARC-F– counterparts (median, 4.0 vs. 6.0; p < 0.001).

Associations between MBI and IADL scores with SARC-F

Using multiple linear regression, MBI scores were independently associated with SARC-F—Model 1 (unstandardized coefficient [β] = –0.078, standard error [SE] = 0.006, T = –12.987, 95% confidence interval [CI] –0.09 to –0.066, p < 0.001, tolerance = 0.85, VIF = 1.18) and Model 2 (β = –0.07, SE = 0.008, T = –8.914, 95% CI –0.086 to –0.055, p < 0.001, tolerance = 0.55, VIF = 1.82), such that higher MBI scores were associated with lower SARC-F scores.

IADL total scores were also independently associated with SARC-F—Model 1 (β = –0.606, SE = 0.06, T = –10.06, 95% CI –0.725 to –0.488, p < 0.001, tolerance = 0.74, VIF = 1.36) and Model 2 (β = –0.533, SE = 0.077, T = –6.907, 95% CI –0.684 to –0.381, p < 0.001, tolerance = 0.45, VIF = 2.23)—with higher IADL scores associated with lower SARC-F scores.

Associations between Individual ADL Domains and SARC-F+

Most ADL domains were independently associated with SARC-F+ (Fig. 1). Using Model 2, we found that the top three domains that posed the greatest odds for SARC-F+ include dependency in feeding (odds ratio [OR] = 12.37, 95% CI 1.45–106, p = 0.022), stair-climbing (OR = 10.49, 95% CI 4.96–22.2, p < 0.001), and dressing (OR = 10.19, 95% CI 2.66–39.0, p = 0.001) for MBI, and dependency in finances (OR = 14.67, 95% CI 3.57–39.5, p < 0.001), housekeeping (OR = 8.11, 95% CI 2.83–23.3, p < 0.001), and shopping (OR = 4.39, 95% CI 2.05–9.40, p < 0.001) for IADL.

AUC for MBI and IADL against SARC-F

MBI (AUC = 0.82, 95% CI 0.77–0.88, p < 0.001) and IADL (AUC = 0.78, 95% CI 0.72–0.84, p < 0.001) performed best for SARC-F+ screen (SARC-F ≥ 4), with their optimal cut-off scores being ≤ 97 for MBI (sensitivity = 74.8%, specificity = 81.2%, positive predictive value [PPV] = 80.7%), and ≤ 4 for IADL (sensitivity = 65.0%, specificity = 80.3%, PPV = 77.7%). Other measures including CFS (AUC = 0.70), age (AUC = 0.69), AMT (AUC = 0.60), and CCI (AUC = 0.58) had lower discriminatory performance (Fig. 2).

Table 1. Baseline characteristics between SARC-F– (<4) and SARC-F+ (≥4) groups

Characteristic	All subjects (n = 240)	SARC-F– (n = 117)	SARC-F+ (n = 123)	p-value[a]
SARC-F (total score)	3.7 ± 2.4	1.7 ± 1.0	5.7 ± 1.7	< 0.001
Demographics				
Age (y)	84 ± 8.1	81.4 ± 7.9	86.4 ± 7.6	< 0.001
Sex, female	156 (65.0)	68 (58.1)	88 (71.5)	0.040
Ethnicity				0.680
Chinese	213 (88.8)	101 (86.3)	112 (91.1)	
Indian	16 (6.7)	9 (7.7)	7 (5.7)	
Malay	8 (3.3)	5 (4.3)	3 (2.4)	
Eurasian	3 (1.3)	2 (1.7)	1 (0.8)	
Years of education ≥ 6	84 (35.0)	52 (44.4)	32 (26.0)	0.004
Smoking status				0.015
Current smoker	15 (6.3)	11 (9.4)	4 (3.3)	
Ex-smoker	29 (12.1)	19 (16.2)	10 (8.1)	
Non-smoker	196 (81.7)	87 (74.4)	109 (88.6)	
Co-morbidities				
Charlson Comorbidity Index				
Total score	2.3 ± 2.1	2.0 ± 1.9	2.6 ± 2.2	0.039
Polypharmacy (≥ 5 medicines)	174 (72.5)	75 (64.1)	99 (80.5)	0.008
Hyperpolypharmacy (≥ 10 medicines)	54 (22.5)	18 (7.6)	36 (15.2)	0.013
Cognitive status				
Known dementia	44 (18.3)	12 (10.3)	32 (26.0)	0.003
AMT total score	7.5 ± 2.7	8.1 ± 2.1	6.8 ± 3.1	< 0.001
Functional status				
Locomotion				
Uses walking device	134 (55.8)	39 (33.3)	95 (77.2)	< 0.001
Premorbid MBI				
Total score	98.0 (89.0–100)	100.0 (98.0–100)	90.0 (71.0–98.0)	< 0.001
Premorbid Lawton's IADLs				
Total score	5.0 (3.0–7.0)	6.0 (5.0–7.5)	4.0 (2.0–5.0)	< 0.001
Frailty status				
Premorbid CFS				
Total score	4.7 ± 0.8	4.4 ± 0.6	5.0 ± 0.9	< 0.001
Frail	140 (58.3)	49 (41.9)	91 (73.9)	< 0.001
Category[b]				
Robust[c] (CFS 1–3)	7 (2.9)	3 (2.6)	4 (3.3)	< 0.001
Pre-frail (CFS 4)	93 (38.8)	65 (55.6)	28 (22.8)	
Mildly frail (CFS 5)	98 (40.8)	44 (37.6)	54 (43.9)	
Moderately frail (CFS 6)	39 (16.3)	5 (4.3)	34 (27.6)	
Severely frail (CFS 7)	3 (1.3)	0 (0.0)	3 (2.4)	

Values are presented as mean±standard deviation or number (%) or median (interquartile range).

SARC-F, Strength, Assistance with walking, Rise from a chair, Climb stairs and Falls; AMT, Abbreviated Mental Test; CFS, Clinical Frailty Scale; IADLs, instrumental activities of daily living; MBI, Modified Barthel Index.

[a]Chi-square test or Fisher exact test were performed (when expected value is less than 5).

[b]There were no patients with CFS 8 or 9 in the cohort.

[c]Includes patients with CFS category 1 (very fit), 2 (well), and 3 (managing well).

DISCUSSION

Our findings suggest that functional dependency, especially in feeding, stair-climbing, dressing, finances, housekeeping, and shopping is strongly associated with positive SARC-F screen among older adults attending the ED. While prevalence of sarco-penia and its association with ADLs have been previously established in community-dwelling older adults, nursing home residents, and rehabilitation ward patients,[32-34] our study is the first to examine the association between individual ADL domains and SARC-F+ in older ED attendees.

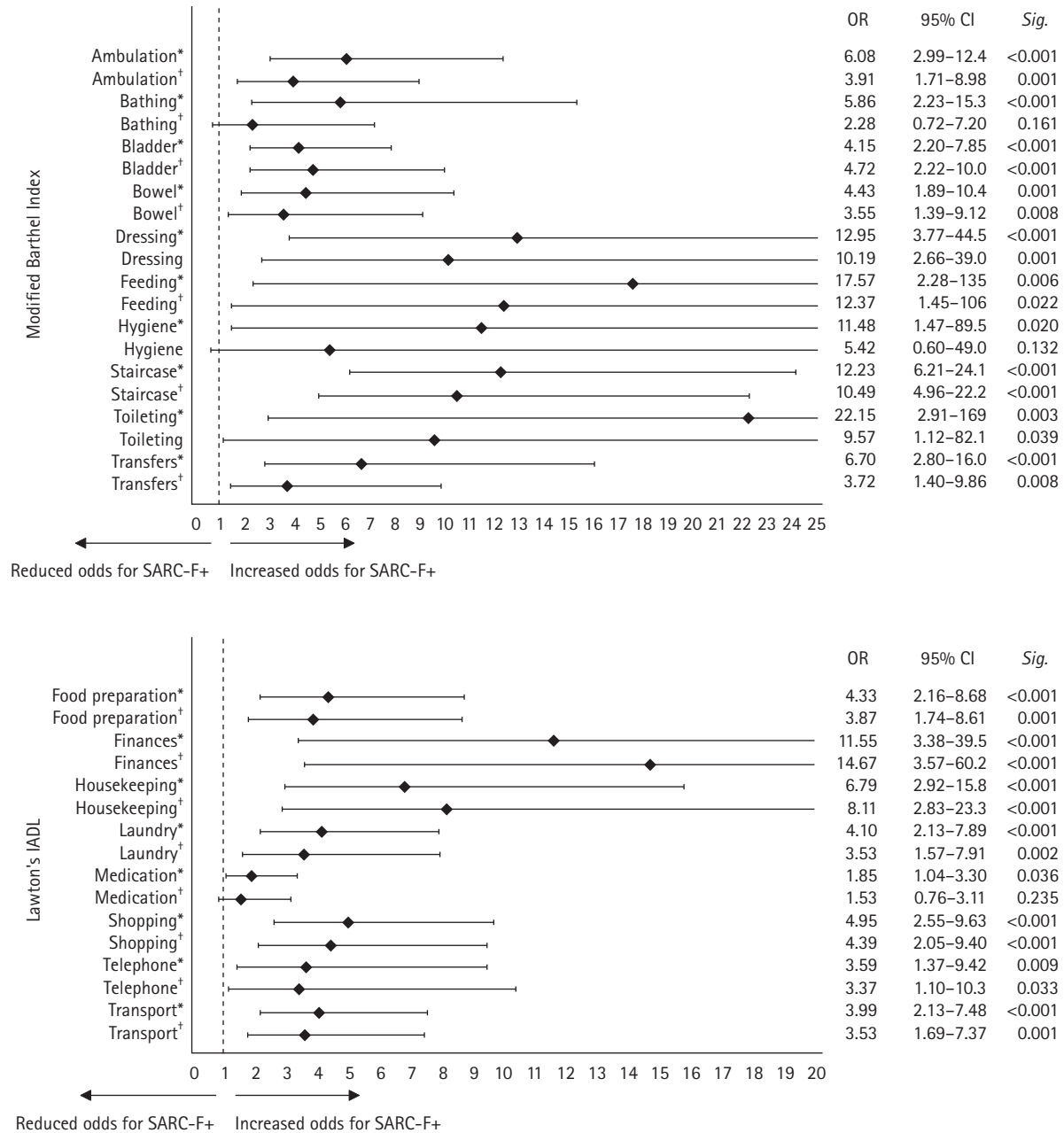We observed that dependency in managing finances conferred

	OR	95% CI	Sig.
Ambulation*	6.08	2.99–12.4	<0.001
Ambulation†	3.91	1.71–8.98	0.001
Bathing*	5.86	2.23–15.3	<0.001
Bathing†	2.28	0.72–7.20	0.161
Bladder*	4.15	2.20–7.85	<0.001
Bladder†	4.72	2.22–10.0	<0.001
Bowel*	4.43	1.89–10.4	0.001
Bowel†	3.55	1.39–9.12	0.008
Dressing*	12.95	3.77–44.5	<0.001
Dressing	10.19	2.66–39.0	0.001
Feeding*	17.57	2.28–135	0.006
Feeding†	12.37	1.45–106	0.022
Hygiene*	11.48	1.47–89.5	0.020
Hygiene	5.42	0.60–49.0	0.132
Staircase*	12.23	6.21–24.1	<0.001
Staircase†	10.49	4.96–22.2	<0.001
Toileting*	22.15	2.91–169	0.003
Toileting	9.57	1.12–82.1	0.039
Transfers*	6.70	2.80–16.0	<0.001
Transfers†	3.72	1.40–9.86	0.008

	OR	95% CI	Sig.
Food preparation*	4.33	2.16–8.68	<0.001
Food preparation†	3.87	1.74–8.61	0.001
Finances*	11.55	3.38–39.5	<0.001
Finances†	14.67	3.57–60.2	<0.001
Housekeeping*	6.79	2.92–15.8	<0.001
Housekeeping†	8.11	2.83–23.3	<0.001
Laundry*	4.10	2.13–7.89	<0.001
Laundry†	3.53	1.57–7.91	0.002
Medication*	1.85	1.04–3.30	0.036
Medication†	1.53	0.76–3.11	0.235
Shopping*	4.95	2.55–9.63	<0.001
Shopping†	4.39	2.05–9.40	<0.001
Telephone*	3.59	1.37–9.42	0.009
Telephone†	3.37	1.10–10.3	0.033
Transport*	3.99	2.13–7.48	<0.001
Transport†	3.53	1.69–7.37	0.001

Fig. 1. Logistic regression analysis examining the association between dependency in individual domains of basic (Modified Barthel Index) and instrumental ADL (Lawton's IADL) and having sarcopenia risk (SARC-F+). ADL, activities of daily living; IADL, instrumental activities of daily living; SARC-F, Strength, Assistance with walking, Rise from a chair, Climb stairs and Falls; OR, odds ratio; CI, confidence interval. *Model 1: adjusted for age and sex. †Model 2: adjusted for age, sex, years of education, smoking status, polypharmacy, Abbreviated Mental Test, Charlson Comorbidity Index, and Clinical Frailty Scale.

the greatest odds for being SARC-F+. This observation may partly be contributed by the significantly greater proportion of cognitively-impaired patients among the SARC-F+ group, although this was adjusted for in Model 2. Similar results were noted even when AMT was substituted for dementia diagnosis (OR = 12.9, 95% CI 3.30–50.61, p < 0.001). A recent cross-sectional study of 201 participants found that older adults with cognitive impairment had a

significantly higher prevalence of sarcopenia when compared to those with normal cognitive functions (15.4% vs. 3.7%; p = 0.006).[35] Additionally, a systematic review and meta-analysis study reported that the pooled adjusted OR for cognitive impairment for patients with sarcopenia was 2.25, when compared to those without sarcopenia.[36] Therefore, we postulate that the synergistic effect of physical disability and cognitive impairment in
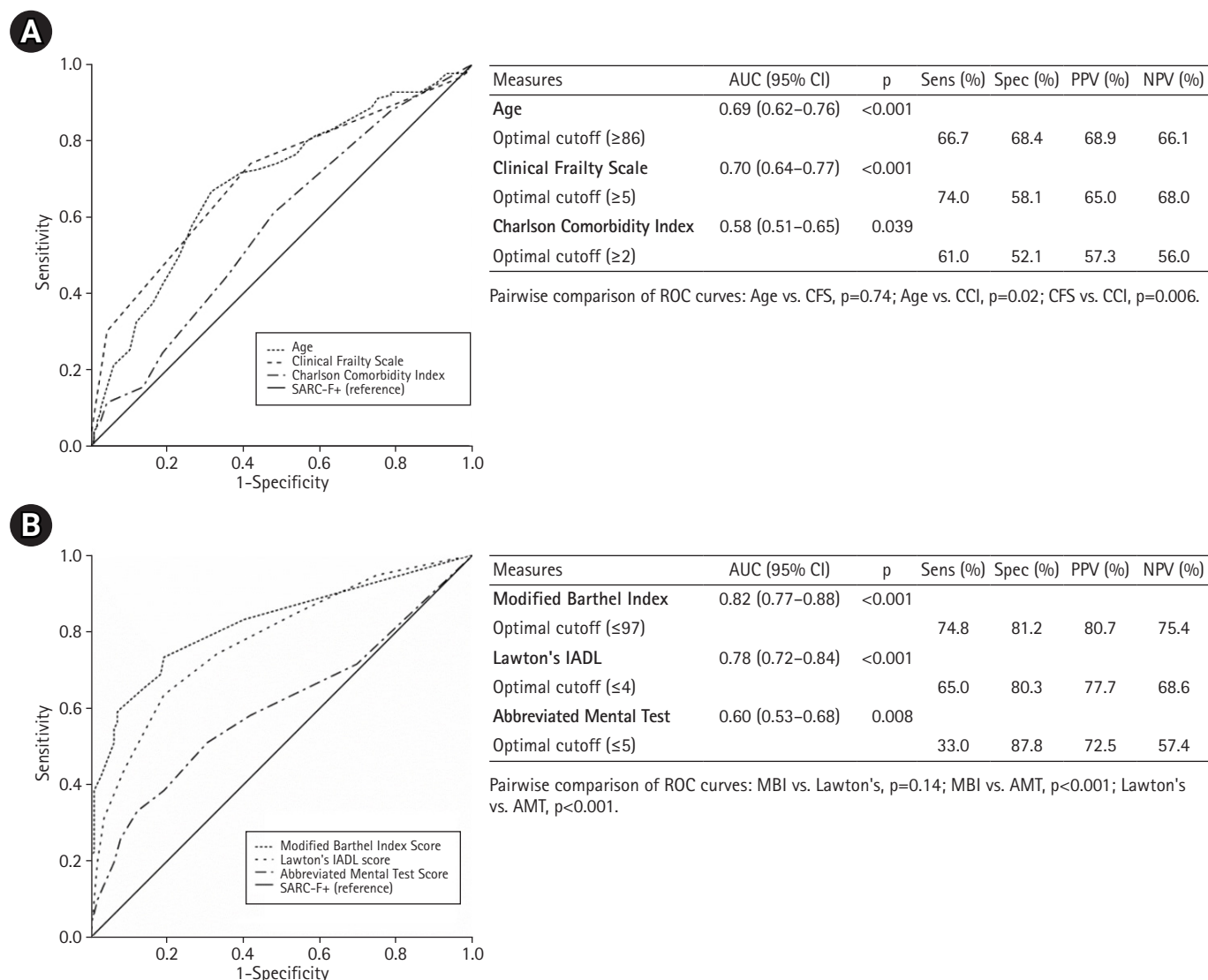
Fig. 2. Areas under receiver-operating characteristic curve (AUC) for various measures against SARC-F+. (A) Measures with higher scores indicating a more positive test. (B) Measures with lower scores indicating a more positive test. SARC-F, Strength, Assistance with walking, Rise from a chair, Climb stairs and Falls; AMT, Abbreviated Mental Test; CCI, Charlson Comorbidity Index; CFS, Clinical Frailty Scale; IADL, instrumental activities of daily living; MBI, Modified Barthel Index; ROC, receiver operating characteristic; Sens, sensitivity; Spec, specificity; NPV, negative predictive value; PPV, positive predictive value; CI, confidence interval.

persons with sarcopenia may result in significant challenges in managing finances independently.

Sarcopenia & oral health is fast becoming a growing interest in the scientific field, with conditions such as "sarcopenic dysphagia," "malnutrition," and "oral frailty" sharing many phenotypically overlapping features.[37] A study reported significantly poorer swallowing functions among sarcopenia patients when five swallowing assessment tools including the dysphagia severity scale, repetitive saliva swallowing test, genio-thyroid distance, thyroid-sternum distance, and genio-sternum grade were used.[38] Another study investigating 18,782 participants of the Korean National Health and Nutrition Examination Survey from 2008 to 2011 found that there was a significant association between loss of natural teeth and sarcopenia, reporting an adjusted OR for sarcopenia among older participants with < 20 natural teeth of 1.92 in males and 2.63 in females.[39] On a related note, a study of community-dwelling older adults reported that SARC-F+ patients had the most prevalent difficulty in stair-climbing (96.8%) and strength (81.1%), and an inclination for at least one IADL disability.[40] Hence, our findings build on growing evidence that sarcopenia is closely related to the loss of physical abilities such as feeding and stair-climbing.

Understanding associations between individual domains of

ADL and SARC-F+ may potentially aid in contextualizing clinical care through a deeper appreciation of its impact on one's ability to meet basic needs due to having risk of sarcopenia. This allows for the design and delivery of person-centered care and interventions to optimize functional ability of older persons with risk of sarcopenia. The AWGS 2019 recommends an algorithmic approach for sarcopenia diagnosis comprising skeletal muscle mass measurement and assessments of handgrip strength or physical performance in the hospital setting.[1] While the SARC-F has promising potential for use as a case-finding tool for sarcopenia,[19] the fast-paced and often chaotic environment at the ED may not support the incorporation of additional tools to their routine assessment battery.

A potential approach would be to place emphasis on functional assessments as means for triggering further assessment in sarcopenia. For example, dependency in the "high-risk" ADL or IADL categories in our study should alert the ED physician to look out for, and address potential issues, that are associated with sarcopenia. This can be achieved using the 4Ds approach of drugs (medications such as statin or steroids that can result in myalgia and proximal muscle weakness), diabetes mellitus, other diseases (chronic diseases of the lungs, kidneys, liver or heart, osteoporosis, progressive neurological diseases, and others) and deficiency (poor dentition or oral health, swallowing impairment, vitamin D deficiency, and others).[11] Additionally, EDs who aspire to be frailty-ready may consider adopting the Quadruple Aim framework, which comprises four key objectives: improving patient health outcomes, reducing cost, improving patient experience, and improving healthcare team experience.[41] This approach will aid health-care systems in addressing any mismatch between existing care delivery and evidence-based best practices for older persons.

Our study had several limitations and results should be interpreted with care. First, this is a secondary analysis combining data from two separate studies, which had different aims and population demographics. Thus, the sample size may not be adequately powered for the intended purposes of this study. Nevertheless, combining both cohorts enhance generalizability due to the inclusion of a wider range of participants' age and presentation to the ED. Second, despite combining cohorts, many participants had a presentation of fall or recurrent falls (n = 112; 46.7%). The majority of sarcopenic patients required assistance with walking (52.0%) and had a history of fall (68.2%). This may potentially promote higher SARC-F scores, especially for items 2 (assistance with walking) and 5 (falls), and limit applicability of our findings to patients with other illness presentations. Last, there are overlapping elements between the SARC-F and MBI—items 3 (rise from a chair) and 4 (climb stairs), and "chair/bed transfers" and "stair-climbing,"

respectively. Nevertheless, when we excluded stair-climbing from total MBI score, MBI remained independently associated with SARC-F—Model 1 ($\beta = -0.082$, SE = 0.007, T = −11.222, 95% CI −0.096 to −0.068, p < 0.001, tolerance = 0.87, VIF = 1.15) and Model 2 ($\beta = -0.068$, SE = 0.009, T = −7.398, 95% CI −0.086 to −0.050, p < 0.001, tolerance = 0.59, VIF = 1.70). Hence, this is not necessary a limitation as it explains why the SARC-F and MBI were reported to be most predictive for frailty (both AUC > 0.90) in a recent study.[19] Additionally, it was anticipated that strong associations between the abovementioned tools, which share common functional components, were observed in our study.

In conclusion, functional dependency in older adults at the ED is strongly associated with positive SARC-F screen, indicating patients are at risk of sarcopenia. This highlights the need for increased vigilance, especially in the presence of dependency in relevant domains such as managing finances, feeding, and stair-climbing. Further studies with more robust methodologies are required to build on evidence to support our novel finding of functional dependency and positive SARC-F screen among older adults at the front-door of acute hospitals.

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CONFLICT OF INTEREST
The researchers claim no conflicts of interest.

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AUTHOR CONTRIBUTIONS
Conceptualization, EC, WSL; Data curation, EC, EFG; Funding acquisition, EC; Investigation, EC, EFG; Methodology, EC, WSL; Project administration, EFG; Supervision, WSL; Writing–original draft, EC, EFG; Writing–review & editing, WSL.

SUPPLEMENTARY MATERIALS

Supplementary materials can be found via https://doi.org/10.4235/agmr.24.0091.

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