Sarcopenia in the Shadows: Feasibility of Screening Postmenopausal Women Using the SARC-F Questionnaire and Gait Speed Test in a Menopause Clinic

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Abstract

Background: Sarcopenia is a progressive, age-related decline in skeletal muscle mass and function that contributes to frailty, falls, and loss of independence. Postmenopausal women represent a vulnerable group, yet sarcopenia remains under-recognised in gynecology and menopause clinics, where routine screening is seldom performed. Objectives: To assess the feasibility of screening for sarcopenia among postmenopausal women attending a menopause clinic using the SARC-F questionnaire and gait speed testing, and to estimate the proportion of women screening positive. Methods: This observational cross-sectional study was conducted among postmenopausal women aged 45–70 years attending a menopause clinic at a tertiary care teaching hospital between August 2024 and January 2025. Screening was performed using the SARC-F questionnaire (score ≥4 indicating probable sarcopenia) and a 6-meter gait speed test, with the middle 4 meters timed. A gait speed of ≤0.8 m/s was considered indicative of poor physical performance, in accordance with the EWGSOP2 framework. Feasibility outcomes included time required for screening and acceptance by participants and clinic staff. Results: A total of 50 postmenopausal women were screened. Twelve women (24%) had a SARC-F score ≥4, while eight women (16%) demonstrated a gait speed ≤0.8 m/s. Overall, 20 women (40%) screened positive on either SARC-F or gait speed testing, indicating a substantial hidden burden of probable sarcopenia. Screening was highly feasible, requiring less than five minutes per participant, with a 100% acceptance rate among both patients and clinic staff. Increasing age and lower physical activity levels were more frequently observed among women who screened positive. Conclusion Screening for sarcopenia using the SARC-F questionnaire and gait speed test is quick, feasible, and well accepted in a menopause clinic setting. Incorporating simple functional screening tools into routine menopause care may facilitate early identification of sarcopenia and enable timely preventive interventions in postmenopausal women.

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Introduction

Sarcopenia is a progressive and generalised disorder of skeletal muscle characterised by loss of muscle mass, strength, and physical performance, and is now recognised as a major determinant of frailty, falls, disability, and mortality in ageing populations [1,2]. While sarcopenia has traditionally been considered a condition of advanced age, accumulating evidence suggests that its onset may occur earlier in women, particularly during the postmenopausal period, when hormonal changes, reduced physical activity, and alterations in body composition accelerate muscle decline [3,4].

Postmenopausal women represent a clinically vulnerable group in whom sarcopenia may coexist with osteoporosis, metabolic syndrome, and cardiovascular risk, thereby compounding functional impairment and long-term morbidity [5]. Despite its clinical relevance, sarcopenia often remains under-recognised in routine gynecological and menopause clinic practice, where clinical encounters are typically focused on vasomotor symptoms, urogenital health, and bone density assessment [6]. As a result, early functional decline related to muscle health frequently goes unnoticed until patients present with falls, mobility limitation, or dependence in activities of daily living.

The European Working Group on Sarcopenia in Older People revised its consensus definition in 2019 (EWGSOP2), emphasising early case-finding and functional assessment as the cornerstone of sarcopenia diagnosis [1]. This framework advocates the use of simple, rapid screening tools to identify individuals at risk, followed by targeted evaluation of muscle strength and physical performance. The SARC-F questionnaire, a five-item symptom-based screening tool, has been widely validated as a practical method for identifying probable sarcopenia in both community and clinical settings [7,8].

Gait speed is an objective and reproducible measure of physical performance and has been shown to predict adverse outcomes related to sarcopenia, including disability, institutionalisation, falls, and mortality [9]. The EWGSOP2 recommends a gait speed cut-off of ≤0.8 m/s as an indicator of poor physical performance and severe sarcopenia, owing to its strong prognostic significance and ease of administration [1,10]. Importantly, gait speed testing requires minimal equipment, can be completed within minutes, and is well suited for outpatient use.

Although both SARC-F and gait speed testing are widely used in geriatric practice, evidence regarding their feasibility and utility in menopause clinic settings remains limited, particularly in resource-constrained healthcare environments. Integrating sarcopenia screening into routine menopause care has the potential to shift clinical focus toward early identification and prevention of functional decline.

The present study was therefore undertaken to assess the feasibility of screening for sarcopenia among postmenopausal women attending a menopause clinic using the SARC-F questionnaire and gait speed test, and to estimate the proportion of women screening positive for probable sarcopenia in this clinical context.

Materials and Methods

Study Design and Setting

This was an observational cross-sectional study conducted in the menopause clinic of the Department of Obstetrics and Gynaecology at a tertiary care teaching hospital. The study was carried out over a six-month period from August 2024 to January 2025. The primary objective was to assess the feasibility of sarcopenia screening using simple functional tools within the routine workflow of a menopause clinic.

Study Population

Postmenopausal women attending the menopause clinic during the study period were screened for eligibility. Participants were enrolled consecutively after obtaining informed consent. A total of 50 postmenopausal women were included in the study.

Inclusion Criteria

- ✓ Postmenopausal women aged between 45 and 70 years
- ✓ Women attending the menopause clinic for routine consultation or follow-up
- ✓ Women who had attained natural menopause
- ✓ Willingness to participate in the study and undergo functional assessment

Exclusion Criteria

- ✓ Women with acute medical illness at the time of evaluation
- ✓ Women with conditions limiting safe ambulation or gait assessment
- ✓ Women unwilling or unable to cooperate with screening procedures

Screening Framework

Sarcopenia screening was performed in accordance with the revised European Working Group on Sarcopenia in Older People (EWGSOP2) consensus, which recommends initial case-finding using simple screening tools followed by assessment of physical performance [1]. Given the feasibility-focused nature of the study and the outpatient setting, screening was limited to symptom-based assessment and gait speed testing.

SARC-F Questionnaire

All eligible participants were assessed using the SARC-F questionnaire, a five-item screening tool evaluating strength, assistance in walking, rising from a chair, climbing stairs, and history of falls. Each item is scored from 0 to 2, with a total score ranging from 0 to 10. A score of ≥4 was considered indicative of probable sarcopenia, in accordance with established recommendations [7].

Gait Speed Assessment

Physical performance was evaluated using a 6-meter gait speed test. Participants were instructed to walk at their usual pace along a clearly marked 6-meter walkway. The first and last one meter were designated for acceleration and deceleration, respectively, and the time taken to walk the middle 4 meters was recorded using a stopwatch. Gait speed was calculated in meters per second (m/s). A gait speed of ≤0.8 m/s was considered indicative of poor physical performance and suggestive of severe sarcopenia, as per EWGSOP2 criteria [1,10].

Definition of Screening Positivity

Participants were considered to have screened positive for probable sarcopenia if they met one or both of the following criteria:

1. SARC-F score ≥4
2. Gait speed ≤0.8 m/s

Feasibility Assessment

Feasibility of screening was evaluated based on:

- **Time required for screening**, defined as the approximate duration needed to complete both the SARC-F questionnaire and gait speed test per participant
- **Acceptance**, assessed by participant willingness and cooperation, as well as the ability of clinic staff to incorporate screening into routine clinic workflow

Data Collection and Analysis

Data were recorded using a structured proforma. Descriptive analysis was performed to summarise screening outcomes, including the proportion of women screening positive by SARC-F, gait speed testing, or either method. Associations with age, physical activity levels, and functional difficulties were documented where reported. As the primary objective of the study was feasibility assessment, inferential statistical analysis was not undertaken.

A total of 50 postmenopausal women aged 45–70 years attending the menopause clinic were screened for sarcopenia during the study period. All eligible women consented to participate, and screening was successfully completed in all participants.

Screening Outcomes

Using the SARC-F questionnaire, 12 women (24%) had a score ≥4, indicating probable sarcopenia. Gait speed assessment identified 8 women (16%) with a walking speed of ≤0.8 m/s, suggestive of poor physical performance. When either screening modality was considered, 20 women (40%) screened positive for probable sarcopenia, revealing a substantial proportion of previously unrecognised functional impairment among menopause clinic attendees.(Table 1) summarises the screening outcomes using SARC-F and gait speed testing.The distribution of screening positivity across the two modalities is visually depicted in (Figure 1).

Table 1. Screening outcomes for sarcopenia among postmenopausal women (n = 50)

Screening tool	Number of women	Percentage (%)
SARC-F score ≥4	12	24
Gait speed ≤0.8 m/s	8	16
Positive on either SARC-F or gait speed	20	40

Probable sarcopenia was defined as a SARC-F score ≥4 and/or gait speed ≤0.8 m/s.

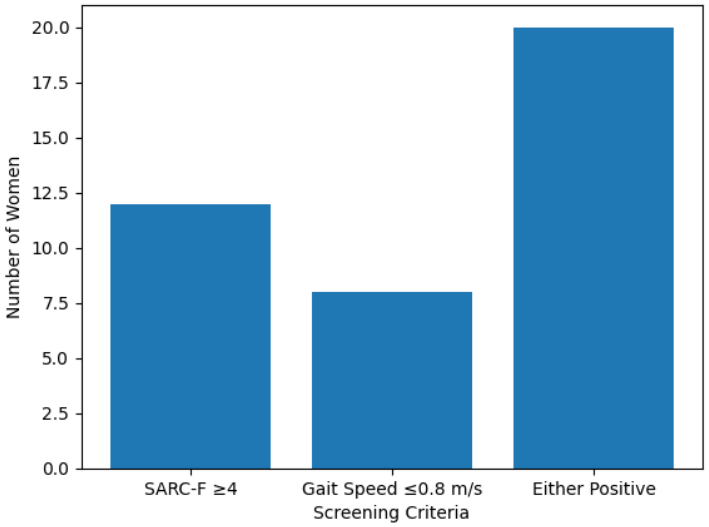

Figure 1. Screening outcomes for probable sarcopenia

Bar chart showing the number of postmenopausal women screening positive for sarcopenia using the SARC-F questionnaire, gait speed test, or either screening modality.

Feasibility of Screening

Screening using the SARC-F questionnaire and gait speed test was highly feasible in the outpatient menopause clinic setting. The combined screening process required less than five minutes per participant. Acceptance was universal, with all women agreeing to participate and full cooperation from clinic staff. No disruption to routine clinic workflow was observed.Feasibility parameters are summarised in (Table 2).

Table 2. Feasibility of sarcopenia screening in the menopause clinic

Feasibility parameter	Observation
Time required per participant	< 5 minutes
Participant acceptance	100%
Clinic staff cooperation	100%

Bar chart depicting feasibility parameters of sarcopenia screening in the menopause clinic, including time required per participant and acceptance rate.

Observed Clinical Associations

Women who screened positive for probable sarcopenia were more frequently observed to be older and to report lower levels of physical activity. Women who screened positive on both SARC-F and gait speed testing were more likely to report difficulty in performing activities of daily living and a history of falls. These associations were descriptive observations documented during screening, and no inferential statistical analysis was performed.(Table 3) summarises the observed clinical characteristics among women screening positive for probable sarcopenia.

Table 3. Observed characteristics among women screening positive for probable sarcopenia

Observed feature	Association noted
Increasing age	More frequent
Lower physical activity	More frequent
Difficulty in daily activities	More common when both tests positive
History of falls	More common when both tests positive

Discussion

The present study demonstrates that screening for sarcopenia using the SARC-F questionnaire and gait speed testing is both feasible and acceptable in a menopause clinic setting, with a substantial proportion of postmenopausal women screening positive for probable sarcopenia. Importantly, screening was completed in less than five minutes per participant and achieved universal acceptance, highlighting the practicality of integrating sarcopenia screening into routine gynecological care.

Sarcopenia is increasingly recognised as a major public health concern due to its association with frailty, falls, disability, and mortality [1,2]. While traditionally viewed as a condition of advanced age, emerging evidence indicates that women may begin to experience accelerated muscle loss during the menopausal transition, driven by declining estrogen levels, reduced physical activity, and changes in body composition [3,4]. Despite this, sarcopenia remains under-detected in menopause clinics, where clinical attention is often directed toward vasomotor symptoms, osteoporosis, and cardiometabolic risk [6]. The findings of the present study underscore the presence of a hidden burden of sarcopenia-related functional impairment among postmenopausal women attending such clinics.

In this study, nearly one-quarter of participants had a SARC-F score of ≥4, while 16% demonstrated reduced gait speed, and 40% screened positive on either modality. These findings are broadly consistent with reports from community and clinic-based studies that have identified varying prevalence rates depending on population characteristics and screening tools used [7,8,11]. The use of SARC-F as an initial screening tool is supported by its high specificity and ease of administration, making it particularly suitable for busy outpatient settings [7,12]. Although SARC-F may have limited sensitivity, its role as a case-finding instrument aligns well with the EWGSOP2 recommendation to prioritise early identification of individuals at risk [1].

Gait speed is a robust and objective measure of physical performance and has been shown to predict

adverse outcomes such as disability, institutionalisation, falls, and mortality [9,13]. The EWGSOP2-recommended cut-off of ≤0.8 m/s was applied in this study, providing a clinically meaningful indicator of poor physical performance [1,10]. The identification of reduced gait speed in a subset of relatively young postmenopausal women highlights the importance of functional assessment beyond chronological age alone. Women who screened positive on both SARC-F and gait speed testing were more likely to report difficulty in daily activities and a history of falls, supporting the functional relevance of these screening tools.

A key strength of this study lies in its focus on feasibility rather than diagnostic confirmation. In resource-limited healthcare settings, access to advanced imaging modalities such as dual-energy X-ray absorptiometry or magnetic resonance imaging is often restricted [14]. The use of simple, low-cost, and equipment-free tools such as SARC-F and gait speed testing offers a pragmatic alternative for early identification of at-risk individuals. Similar feasibility has been reported in primary care and geriatric clinic settings, reinforcing the potential for broader implementation [11,15].

The menopause clinic represents a unique and underutilised opportunity for preventive screening. Women attending these clinics are often engaged in longitudinal care and may be more receptive to lifestyle interventions aimed at preserving musculoskeletal health. Early identification of sarcopenia allows for timely initiation of low-cost interventions, including resistance exercise, nutritional optimisation, vitamin D supplementation, and fall prevention strategies, all of which have been shown to improve muscle function and reduce adverse outcomes [16–18]. Integrating sarcopenia screening into routine menopause care may therefore contribute to healthier ageing trajectories and reduced long-term morbidity.

The findings of this study should be interpreted in light of certain limitations. The sample size was modest, and the study was conducted in a single tertiary care centre, which may limit generalisability. The absence of confirmatory muscle mass assessment precludes definitive diagnosis of sarcopenia; however, this was consistent with the feasibility-focused objective of the study and aligns with the EWGSOP2 emphasis on early case-finding [1]. Additionally, associations with age, physical activity, and functional limitation were descriptive and not subjected to inferential statistical analysis.

Despite these limitations, the study provides important preliminary evidence supporting the integration of sarcopenia screening into menopause clinics. By shifting the clinical focus toward early functional assessment, gynecology services can play a pivotal role in preventive geriatric care. Future studies with larger sample sizes and confirmatory diagnostic assessments are warranted to further delineate the burden of sarcopenia in postmenopausal women and to evaluate the impact of early intervention strategies.

Strengths and Limitations

The primary strength of this study lies in its pragmatic, feasibility-focused design, demonstrating that sarcopenia screening can be successfully integrated into a routine menopause clinic without additional resources, specialised equipment, or disruption to clinical workflow. The use of simple, validated tools such as the SARC-F questionnaire and gait speed testing enhances the clinical applicability of the findings, particularly in resource-constrained outpatient settings. Universal acceptance by participants and clinic staff further supports the real-world relevance of the screening approach.

However, certain limitations should be acknowledged. The study was conducted at a single tertiary care centre with a relatively small sample size, which may limit generalisability. Confirmatory assessment of muscle mass using imaging or bioelectrical impedance analysis was not performed, precluding definitive diagnosis of sarcopenia. Associations observed with age, physical activity, and functional limitation were descriptive in nature, as inferential statistical analysis was beyond the scope of this feasibility study. Despite these limitations, the findings provide valuable preliminary evidence supporting early functional screening in menopause clinics.

Conclusion and Clinical Implications

This study demonstrates that screening for sarcopenia using the SARC-F questionnaire and gait speed test is quick, feasible, and well accepted in a menopause clinic setting. A substantial proportion of postmenopausal women screened positive for probable sarcopenia, highlighting a previously under-recognised burden of functional impairment in this population.

Incorporating simple functional screening tools into routine menopause care offers an opportunity for early identification of women at risk, enabling timely preventive interventions such as exercise prescription, nutritional counselling, and fall prevention strategies. Menopause clinics may thus serve as an effective platform for promoting healthy ageing and reducing long-term morbidity associated with sarcopenia. Larger studies incorporating confirmatory diagnostic measures are warranted to further inform clinical practice and policy-level integration.

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