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FACTORS ASSOCIATED WITH SARCOPENIA IN OLDER PEOPLE WITH LOW BACK PAIN ATTENDING PHYSIOTHERAPY AT KUALA LUMPUR HOSPITAL

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ABSTRACT

Objectives: This study compared the profiles of older people with low back pain (LBP) based on sarcopenia status and determined whether these profiles were associated with sarcopenia status.

Methods: This cross-sectional study recruited older people aged ≥60 from the Outpatient Physiotherapy Department, Hospital Kuala Lumpur who were newly referred cases by the doctors with LBP diagnoses. Sarcopenia status was assessed using the Asian Working Group for Sarcopenia (AWGS) 2019 algorithm. Data profiles such as sociodemographic characteristics, health status, anthropometric and body composition measures, functional performance, and disability level were gathered from each participant. Data were analysed using independent t-tests, Chi-quare tests and Multiple Logistic Regression (MLR) with adjustment for covariates (age, gender and non-communicable diseases (NCDs)).

Results: From the 236 participants (mean age = 66.30 ±4.48 years), about 81.7% (n=193) and 18.3% (n=43) were non-sarcopenic and sarcopenic, respectively. Significant differences were found for type of squatting toilet, smoker, hypertension, height, calf circumference, waist-to-height ratio, muscle mass, skeletal muscle index, upper limb strength, lower limb strength, mobility, gait speed and ODI level between non-sarcopenic and sarcopenic (All p=0.05). Four models of MLR were produced: (1) sociodemographic and health characteristics, (2) anthropometry and body composition, (3) functional performances, and (4) disability level. Type of toilet (OR=2.7, p=0.037) and smoking status (OR=6.9, p<0.001) in the sociodemographic and health characteristics model, calf circumference (OR=0.706, p=0.001) and Skeletal Muscle Index (SMI) (OR=0.101, p=<0.001) in the anthropometry and body composition model, and upper limb strength (OR=0.909, p=0.020) and gait speed (OR= 0.016, p=0.002) in the functional performances model, were significantly associated with sarcopenia status. These associations remained significantly associated with sarcopenia status even after controlling for covariates (All p<0.05). However, disability level model was not significantly associated with sarcopenia status (OR = 0.751, p=0.601), even after controlling for all covariates (All p>0.05).

Conclusion: This study found that sarcopenia in older people with LBP was significantly associated with the use of squatting toilets, smoking, reduced calf circumference, lower skeletal muscle index, reduced upper limb strength, and slower gait speed. These findings support the need for early screening of muscle health indicators in routine physiotherapy assessments for older people with LBP. Future research should explore longitudinal outcomes and intervention strategies targeting modifiable risk factors to prevent or delay sarcopenia progression in this population.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

This chapter provides the necessary context that highlights the significance of undertaking the present study. In addition, this chapter addresses the issue at hand, delineates the research goals and hypotheses, and elucidates the importance of this study. Finally, the study provides the operational definitions of the key terms and variables used in this study.

1.2 Background of the study

The current estimate for the population of Malaysians aged 60 years and over is 3.9 million (Department of Statistics Malaysia, 2024a). It is projected that by 2030, this age group will make up 15.3% of the total population (Noordin et al., 2023). The percentage of the population aged 60 and beyond has increased throughout time, 10.7% in 2021, 11.1% in 2022, and 11.29% in 2023 (Department of Statistics Malaysia, 2021, 2022, 2023b). This figure is projected to be 8.2 million (20%) of the population in the year 2040 (Department of Statistics Malaysia, 2024b).

According to the World Health Organization, old age is defined as those aged above 65 years old (Alhasan et al., 2017). Contrarily, in Malaysia, the Ministry of Health Malaysia (MOH) follows the definition given by the World Assembly on Ageing 1982 in Vienna, which defines older people as individuals who are 60 years old and over (Patterson, 1982). This classification is based on their frequent hospital admissions for numerous non-communicable diseases, sometimes accompanied by several co-morbidities (Nordin & Nakamura, 2019). Consequently, healthcare professionals need to be ready for this demographic shift.

In addition to a rise in the older population, as demonstrated by an increase in life expectancy, older people are now living longer. In Malaysia, it is estimated that men and women who reach the age of 60 years will live for another 18.3 years and 21.1 years, respectively (Department of Statistics Malaysia, 2023a). Thus, adults aged 60 years are expected to survive to 78.3 years old for men, while women to 81.1 years