Aging Clinical and Experimental Research (2021) 33:209–210
https://doi.org/10.1007/s40520-020-01739-1

LETTER TO THE EDITOR

Different hand-grip strength cut-offs to define sarcopenia in Turkish population

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Received: 3 August 2020 / Accepted: 10 October 2020 / Published online: 30 October 2020
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Dear Editor,

Sarcopenia is one of the most important geriatric syndromes of our age, and for the last 2 decades, it is seen that studies related to sarcopenia have been published with increasing frequency and all over the world. Diagnosis criteria are the most discussed topics about sarcopenia in these studies. Different measurement methods used to evaluate each of the muscle mass, muscle strength and physical activity criteria, measurement results showing differences according to gender and society's genetic and geographical features, and different statistical methods used in determining cut-offs may cause confusion in the diagnosis of sarcopenia.

In Turkish population, the determination of cut-off values for low muscle strength that are necessary for the diagnosis of sarcopenia in two different studies (32 kg in males and 22 kg in females vs 28 kg in males and < 14 kg in females) is an example of this confusion [1, 2]. In the first of these studies, Bahat et al. calculated the cut-off thresholds for grip strength using ROC analyses using cut-off values that predicted gait speed < 0.8 m/s [1]. Although similar cut-offs have been found for other communities using this or similar methods (self-reported difficulties with mobility by ROC analyses, and mobility limitation as difficulty walking 0.5 km or climbing stairs), EWGSOP recommends the use of normative (healthy young adult) rather than any pre-specified reference population, with cut-off points at two standard deviations (SD) below the mean reference value [3, 4]. Ates Bulut and colleagues designed their studies according to the method suggested by EWGSOP, and used the method proposed for both low muscle mass and low muscle strength. There are many studies using this method [2]. The study at Singaporean Adults used 2 SD under of the young reference group and found 27.9 kg for males and 16.7 kg for females [5]. In a study conducted in Indian adults**,** cut-offs to define low muscle strength were derived based on the standard recommendation proposed by EWGSOP [< 27.5 kg (males)/18.0 kg (females)] [6]. When the results of Bahat G et al. and Ates Bulut et al. are compared, it is seen that the cut-off values of the latter study are closer to both the results of these mentioned studies and the revised EWGSOP criteria. This result, which is close to both Asian and European studies, is not surprising for the Turkish population, because analysis of population genetic substructure using high-density single-nucleotide polymorphism arrays has revealed a marked genetic similarity between the inhabitants of Turkey with those of the Middle East, Europe, South Asia, and Central Asia [7].

In conclusion, these different values of the two studies in the same community are indicative of the uncertainty that exists for the diagnosis of sarcopenia. For this reason, while determining cut-offs for muscle mass and muscle strength, it is necessary to determine the rules standardized. Thus, differences in the diagnosis of sarcopenia can be avoided.

Compliance with ethical standards

Conflict of interest On behalf of all the authors, the corresponding author states that there is no confict of interest.

Statement of human and animal rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent For this type of study formal consent is not required.

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