



## OPEN ACCESS

## EDITED AND REVIEWED BY

Kieran Reid,  
Brigham and Women's Hospital and  
Harvard Medical School, United States

## \*CORRESPONDENCE

Pablo Jorge Marcos-Pardo,  
✉ pjmarcos@ual.es

RECEIVED 23 October 2023

ACCEPTED 31 October 2023

PUBLISHED 07 November 2023

## CITATION

Vasconcelos ABS, Marcos-Pardo PJ and  
Da Silva-Grigoletto ME (2023), Editorial:  
Aging, personal autonomy  
and independence.  
*Front. Aging* 4:1326657.  
doi: 10.3389/fragi.2023.1326657

## COPYRIGHT

© 2023 Vasconcelos, Marcos-Pardo and  
Da Silva-Grigoletto. This is an open-  
access article distributed under the terms  
of the [Creative Commons Attribution  
License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or  
reproduction in other forums is  
permitted, provided the original author(s)  
and the copyright owner(s) are credited  
and that the original publication in this  
journal is cited, in accordance with  
accepted academic practice. No use,  
distribution or reproduction is permitted  
which does not comply with these terms.

# Editorial: Aging, personal autonomy and independence

Alan Bruno Silva Vasconcelos<sup>1</sup>, Pablo Jorge Marcos-Pardo<sup>2,3\*</sup> and  
Marzo E. Da Silva-Grigoletto<sup>4</sup>

<sup>1</sup>Department of Physiology, Federal University of Sergipe, São Cristóvão, Sergipe, Brazil, <sup>2</sup>CERNEP Research Centre, SPORT Research Group (CTS-1024), Department of Education, Faculty of Education Sciences, University of Almería, Almería, Spain, <sup>3</sup>Active Aging, Exercise and Health/HEALTHY-AGE Network, Consejo Superior de Deportes (CSD), Ministry of Culture and Sport of Spain, Madrid, Spain, <sup>4</sup>Department of Physical Education, Federal University of Sergipe, São Cristóvão, Sergipe, Brazil

## KEYWORDS

ageing, health, interventions, physical activity, psychology, multidomain interventions

## Editorial on the Research Topic

### Aging, personal autonomy and independence

The rise in the global population of older individuals, coupled with the surge in life expectancy observed in recent years, has prompted the World Health Organization (WHO) to declare the current era as the “Decade of Healthy Aging” (Amuthavalli Thiyagarajan et al., 2022). Programs operating within the framework of this initiative are not exclusive to the older population but encompass all demographic groups. Their primary goal is to guide individuals toward reaching an advanced age in optimal health, recognizing that health encompasses physical, psychological, and social dimensions.

As our global population continues to age, it becomes increasingly crucial to ensure that older individuals can age in a healthy and active manner. Chronic diseases represent significant health challenges as people advance in years (Maresova et al., 2019). Recognizing and enacting effective non-pharmacological preventive measures is a vital focus within the realm of public health, with many of these strategies requiring implementation in primary care settings. Presently, proven successful interventions involve comprehensive, multi-faceted programs that encompass strength, aerobic, flexibility, and balance training, cognitive exercises, nutritional education, and other domain-specific measures. There is a growing need to gain a deeper understanding of the most effective approaches to multi-dimensional interventions (Baker et al., 2007; Dedeyne et al., 2017; Trautwein et al., 2017; Whitney et al., 2019; Marcos Pardo et al., 2021).

The aging process contributes to the reduction of muscle mass, strength, and power (Keller and Engelhardt, 2013; Larsson et al., 2019). Consequently, functional fitness undergoes a gradual decline over the years, impairing the ability to perform activities of daily living safely, independently, and without excessive fatigue.

In view of the deleterious effects of aging, there is interest in developing and enabling therapeutic strategies that can attenuate these effects and, consequently, promote independence and quality of life in the older population. A focus on functional fitness variables, an important clinical outcome related to autonomy in older adults, has been recommended. Exercise, nutrition, and other health interventions appear to be effective in promoting multisystem adaptations in older adults.

The aim of this Research Topic was to increase knowledge about the interaction between different factors for the health of the older people. This compilation of studies provides a

series of evidence on the efficacy of physical exercise interventions on the physical health, autonomy, and functional independence of the older people. It is necessary to continue working to educate from prevention at all ages to be able to age with health and have an active and healthy aging. This also involves educating all health professionals working in the community and in primary care centers to understand their role, and to work together with chartered physical activity educators to prevent, reduce and even reverse many chronic diseases that benefit from multidomain interventions.

Specifically, this Research Topic of articles adds to the limited body of literature focused on the consideration of aging, autonomy, and independence as a fundamental part of healthy multidomain physical activity programs.

Thus, this Research Topic covers Research Topic as varied as sleep apnea syndrome (SAS) in healthy Japanese older adults. Overall, this multifaceted study revealed that more than half of the study participants were at high risk for undiagnosed severe or moderate SAS (AHI >15/h) (Tanaka et al.). Another study investigated age-related changes in biceps femoris (BF) antagonist muscle coactivation during an acute recovery period following a leg extensor fatigue protocol (Harper and Thompson). In the following study we can learn that living alone was associated with a lower risk of decreased calf circumference among older adults, and could be a protective factor for sarcopenia (Wang and Zhang). In this study we can learn how a supervised intradialysis resistance training program for patients on brief daily hemodialysis treatment, as part of the clinical routine, can induce modest changes in body mass index, basal metabolic rate, and rise and fall time performance (Baião et al.). We will learn how features of the care environment can be used to facilitate the functional mobility of residents while reducing the risk of injury to staff in manual human handling interactions (MHP). And how the ProMob tool can be used to audit care facilities, plan for remodeling, and continuously improve care delivery and management of staff exposure to injury risk (Coman and Caponecchia). To conclude, this study suggests a bidirectional association between hand grip strength (HGS) and disability for activities of daily living (ADL). Low HGS can be used as a reliable marker of future disability for ADLs, which in turn exacerbates HGS decline. There is a need to strengthen screening and intervention of low HGS and improve functional recovery of individuals with ADL disability to promote healthy aging. In addition, it suggests how age and sex should be taken into account when assessing the association

between HGS and ADL disability to develop more accurate and effective interventions (Dai et al.).

We hope you enjoy reading the articles included in this Research Topic and that you find them useful for your professional development in the pursuit of healthy ageing.

## Author contributions

AV: Conceptualization, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing—original draft, Writing—review and editing. PM-P: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing—original draft, Writing—review and editing. MS-G: Conceptualization, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing—original draft, Writing—review and editing.

## Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. This research was funded by Consejo Superior de Deportes, within the Red de Envejecimiento Activo, Ejercicio y Salud/HEALTHY-AGE (code: 28/UPB/23).

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

## References

- Amuthavalli Thiyagarajan, J., Mikton, C., Harwood, R. H., Gichu, M., Gaigbe-Togbe, V., Jhamba, T., et al. (2022). The UN Decade of healthy ageing: strengthening measurement for monitoring health and wellbeing of older people. *Age Ageing* 51, afac147–5. doi:10.1093/AGEING/AFAC147
- Baker, M. K., Atlantis, E., and Fiatarone Singh, M. A. (2007). Multi-modal exercise programs for older adults. *Age Ageing* 36, 375–381. doi:10.1093/ageing/afm054
- Dedeyne, L., Deschodt, M., Verschuere, S., Tournoy, J., and Gielen, E. (2017). Effects of multi-domain interventions in (pre)frail elderly on frailty, functional, and cognitive status: a systematic review. *Clin. Interv. Aging* 12, 873–896. doi:10.2147/CIA.S130794
- Keller, K., and Engelhardt, M. (2013). Strength and muscle mass loss with aging process. Age and strength loss. *Muscles Ligaments Tendons J.* 3, 346–350. doi:10.32098/mltj.04.2013.17
- Larsson, L., Degens, H., Li, M., Salvati, L., Lee, Y. II, Thompson, W., et al. (2019). Sarcopenia: aging-related loss of muscle mass and function. *Physiol. Rev.* 99, 427–511. doi:10.1152/physrev.00061.2017
- Marcos Pardo, P. J., González Gálvez, N., Vaquero Cristobal, R., Sagarra Romero, L., López Vivancos, A., Velázquez Díaz, D., et al. (2021). Programa de Intervención Multidominio Healthy-Age: recomendaciones para un envejecimiento saludable: por la red Healthy-Age. *Cult. Cienc. deporte* 16, 311–320. ISSN 1696-5043. doi:10.12800/ccd.v16i48.1743
- Maresova, P., Javanmardi, E., Barakovic, S., Barakovic Husic, J., Tomson, S., Krejcar, O., et al. (2019). Consequences of chronic diseases and other limitations associated with old age - a scoping review. *BMC Public Health* 19, 1431–1517. doi:10.1186/s12889-019-7762-5
- Trautwein, S., Scharpf, A., Barisch-Fritz, B., Niermann, C., and Woll, A. (2017). Effectiveness of a 16-week multimodal exercise program on individuals with dementia: study protocol for a multicenter randomized controlled trial. *JMIR Res. Protoc.* 6, e35. doi:10.2196/resprot.6792
- Whitney, S. L., Ellis, J., Otis, L., and Marchetti, G. (2019). A multidimensional exercise program in the home for older adults designed to improve function. *Home Health Care Manag. Pract.* 31, 147–154. doi:10.1177/1084822318820531