#### Cover-letter

## i. Names and affiliation of author(s):

Author's name: Alessandro Amorim AITA

Full address: Universidade Católica de Brasília (UCB, Catholic University of Brasília), School of

Health and Medicine, Graduate Program in Gerontology. Brasília, DF, Brazil.

Telephone: +55 (61) 9 8171 3478

Fax: -

Email: alessandroaaita@gmail.com

Menandw Anvonn ATO

Author's name: Corina SATLER

Full address: Universidade de Brasília (UnB, University of Brasília). Faculty UnB Ceilândia,

Department of Speech, Language and Hearing. Brasília, DF, Brazil.

Telephone: +55 (61) 9 8300 6363

Fax: -

Email: corina.satler@gmail.com

Come Satter.

Author's name: Henrique Salmazo da SILVA

Full address: Universidade Católica de Brasília (UCB, Catholic University of Brasília), School of Health and

Medicine, Graduate Program in Gerontology. Brasília, DF, Brazil.

Telephone: + 55 (61) 9 9143 6644

Minigue Milm

Fax: -

Email: henriquesalmazo@gmail.com

Author's name: Isabelle Patriciá Freitas Soares CHARIGLIONE

Full address: Universidade de Brasília (UnB, University of Brasília), Institute of Psychology,

Department of School and Developmental Psychology. Brasília, DF, Brazil.

Telephone: +55 (61) 9 8548 3005

Fax: -

Email: ichariglione@gmail.com

Isabelle Chargiere

ii. The corresponding author: Isabelle Patriciá Freitas Soares CHARIGLIONE

## iii. A brief description of the novelty and importance of the findings detailed in the paper:

A higher mnemonic performance in older adults was associated with emotional health variables, while multimodal interventions proved to be beneficial in the context of Brazilians older adults. This is a new branch of research in Gerontology and neurosciences. Our study discusses the promotion of cognitive health in old age and documented the physical, cognitive and psychological trajectories of typical and higher mnemonic performance older adults submitted on multimodal interventions. In developing countries, as Brazil, this type of study is novelty and can contribute to plan public health policies. Our results suggested that the older adults with high performance had a lower prevalence of depressive

symptoms. There were gains in global cognitive performance, mood, and in physical fitness variables associated with multimodal interventions, evident in the neurotypical group. Due to our small sample, these results are promising and can encourage the geriatricians and gerontologists to implement cognitive stimulation programs associated with physical and social interventions In this way, the cooperation of different research programs is necessary to understand the impact of multimodal interventions in different cognitive profiles Brazilian older adults.

#### iv. Declaration:

We, the undersigned, authors of the manuscript "Neuropsychological and physical trajectories in neurotypical and high-cognitive performing older adults" assume responsibility for the content therein and for its originality, hereby declaring that it was exclusively submitted to Journal of Geriatric Medicine and to no other periodical.

### v. Conflict of Interest:

The authors report no conflicts of interest.

#### vi. Informed Consent:

We confirm that written consent was obtained from all participants prior to the study.

### vii. Ethical Approval:

This study was conducted at the Universidade Católica de Brasília (UCB, Catholic University of Brasília), Brasília, Brazil. The protocol was approved by the IRB and the number is:

67653517.4.0000.0029

### viii. Trial Registration:

Not applicable

## ix. Contributorship:

Alessandro Amorim AITA - Investigation (Lead), Conceptualization (Lead), Formal analysis (Equal), Project administration (Equal), Writing-original draft (Equal), Writing-review & editing (Equal)

**Corina SATLER -** Methodology (Lead), Formal analysis (Equal), Writing-original draft (Equal), Writing-review & editing (Equal)

Henrique Salmazo da SILVA - Formal analysis (Lead), Methodology (Equal), Writing-original draft (Equal), Writing-review & editing (Equal)

**Isabelle Patriciá Freitas Soares CHARIGLIONE -** Funding acquisition (Lead), Project administration (Lead), Supervision (Lead), Investigation (Equal), Writing-original draft (Equal), Writing-review & editing (Equal)

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