

May Social Isolation During COVID-19 Cause Cognitive Dysfunction in Healthy Older Adults?

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We know that cognitive function decreases by age (1), although this is a natural age-related process and will not lead to severe disorder, it can sometimes be severe and lead to dementia (2). According to the theory of cognitive reserve, people with more cognitive reserves, better their cognitive performance in old age (3). The cognitive reserve is impacted by many factors such as physical activity, education, occupational complexity, and performing cognitive activities (reading, writing, etc.) (4,5). Also, good social communications have a positive impact on cognitive reserve and consequently, cognitive function (6,7) although the evaluation of this factor on cognition is difficult (8).

Social isolation, which includes low social activity and a weak social network, has been significantly associated with poor cognitive function (9). The interventional studies showed that increased social interactions and activity increase cognitive performance in comparison with the control group (10-11). In animal models, social isolation leads to immunoreactivity and an increase of adenosine deaminase acting on RNA protein (ADAR1) levels in the hippocampus and frontal cortex. And after re-socialization immunoreactivity and ADAR 1 return to normal levels and cognitive function increases (12).

The quarantine strongly affects people's social activities and communication. Due to the COVID-19 pandemic, quarantine or social restrictions are currently carried out by countries. These restrictions are necessary to reduce the transmission of disease (13). We know that older people are at higher risk for COVID-19 disease (14) and, consequently, these restrictions are more often observed by family members or caregivers. More than 8 months have passed since the start of the COVID-19 pandemic and also the time of its end is not known, which will lead to the prolongation of these limitations.

In conclusion, the cognitive function of healthy older people can be impacted by these social limitations. We have also seen several cases of increased cognitive impairment in the elderly following the recent social limitations. Of course, the role of depression and anxiety caused by this pandemic (15) and their effect on cognitive function (16) should not be ignored. It is recommended to use the following to maintain the cognitive function of the elderly: visiting relatives and friends in a limited members group (social distance and health issues must be considered), communication with others via cyberspace, video calls, participating in online sports classes, etc. according to the age and interests of the individual. (It has been seen that video communication through the Internet improves aspects of cognitive function in the elderly (17) and performs other cognitive activities such as writing, reading, and crossword puzzle solving. It is strongly recommended that psychological factors such as stress, anxiety, and depression be identified and treated; hope that one day this pandemic will come under human control.

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