

The Brain Health Champion (BHC) Study, COVID-19 sub-study: The impact of COVID-19 on behaviors adopted following interventions to promote brain-healthy activities

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Abstract

Background: Evidence suggests that brain-healthy behaviors, such as exercise, a Mediterranean diet, and cognitive/social stimulation, help protect against the risk of cognitive decline and dementia. We have been studying two interventions (health coach vs. physician education) that promote brain-healthy behaviors in patients with mild dementia (MD), mild cognitive impairment (MCI), subjective cognitive decline (SCD), and those at-risk. When COVID-19 occurred, we became interested in determining the extent to which the pandemic may have interfered with brain-healthy behaviors that participants had adopted. We designed a sub-study to investigate the pandemic's effects on adherence to brain-healthy behaviors in participants who completed either intervention in one of our two Brain Health Champion studies (BHC-1, BHC-2).

Method: Participants from BHC-1 and BHC-2 were emailed questionnaires in September 2020. Of the 25 respondents, 15 (SCD:2, MCI:8, MD:5) were from BHC-1 and 10 (At-risk:5, MCI:5) were from BHC-2. Questionnaires measured changes from the start of the pandemic (March 2020) in self-reported physical activity, diet, and social/cognitive activities, as well as current sleep quality and feelings of anxiety and depression.

Result: Results demonstrated that the pandemic had negatively impacted physical activity ($p=.009$) and social interactions ($p<.001$), with no significant changes in diet or cognitive activities. Additional data trends show that at-risk/SCD participants endorsed more feelings of anxiety and depression than MCI participants. At-risk/SCD participants also reported worse sleep quality than MCI participants ($p=.036$) across both studies and intervention arms.

Conclusion: Our findings suggest that the pandemic significantly impacted activities typically done outside the home (social and physical activity), while activities that are typically done at home were less affected (Mediterranean diet adherence and cognitive activity). The pandemic seemed to diminish brain-healthy behaviors that participants likely gained from the interventions, demonstrating that clinical/research programs aimed at promoting brain health are strongly influenced by changes in the envi-

ronment. Trends also show that there may be a direct relationship between anxiety/depression symptoms and sleep disruption in at-risk/SCD and MCI participants. More research is necessary to determine if these disruptions of behavior and sleep are temporary and will be well-compensated when COVID-19 restrictions are lifted.