

The impact of the COVID-19 pandemic on cognitive health

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Abstract

Background: The COVID-19 pandemic has presented an extraordinary and unprecedented challenge to individuals, society and governments. Aside from the direct clinical impacts of COVID-19, the social restrictions are likely to have had considerable impacts on cognitive and mental health. Understanding these trends will be critical to improve future responses to outbreaks and to improve the treatment and care provided to individuals affected.

Method: PROTECT is an innovative online study (www.protect.org.uk) in adults aged 50 and over in the UK. Participants complete annual cognitive assessment and health measures including the PHQ-9 and GAD-7. Participants were divided into three cohorts (Normal Cognition, Stage 2 Early AD and Stage 3 Early AD, based on the FDA framework) using baseline data from the cognitive assessment battery. This analysis utilised data from a total of 5301 participants followed annually over the last 5 years, including the year of the COVID-19 pandemic. It also utilises the newly published FLAME composite cognitive measure that has shown sensitivity to cognitive decline.

Result: In the participants with worsening PHQ-9 and GAD-7 scores between 2019 and 2020 (63%), composite measures of Speed [Stage 2: $p=0.008$, $d=0.27$; Stage 3: $p=0.0006$, $d=0.17$], and accuracy of Attention [Stage 2: $p=0.004$, $d=0.11$; Stage 3: $p=0.0016$, $d=0.21$], Memory [Stage 2: $p=0.0011$, $d=0.3$; Stage 3: $p=0.0009$, $d=0.22$] and Executive Function [$p=0.08$], as well as the composite FLAME measure [$p=0.0014$, $d=0.28$], showed a larger decline over the last 12 months compared to the prior assessment period. Whilst no significant increase in the rate of decline was seen in people without worsening of depression or anxiety.

Conclusion: The pandemic has had a detectable and significant detrimental impact on key aspects of cognitive health in adults over 50, including adults with early cognitive impairment (stage 2 and 3 pre-clinical AD in the FDA framework) mediated predominantly through worsening of mental health.