onset neuropsychiatric sequelae of COVID-19 in this cohort. Additionally, there was a non-significant increase in severity of depressive symptoms, as indicated by a 1.36-point increase in PHQ-9 scores. These results suggest that patients with MS who have also been diagnosed with COVID-19 may be at risk for developing newly onset neuropsychiatric symptoms.

Categories: Multiple Sclerosis/ALS/Demyelinating Disorders
Keyword 1: multiple sclerosis
Keyword 2: neuropsychiatry
Keyword 3: infectious disease
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28 Neurocognitive profile of pediatric acquired demyelinating syndrome with and without myelin oligodendrocyte glycoprotein antibody disease (MOGAD)

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Objective: Pediatric acquired demyelinating syndromes (PADS) include a heterogeneous group of diagnoses, including acute disseminated encephalomyelitis (ADEM), neuromyelitis optica spectrum disorders (NMOSD), optic neuritis (ON) and transverse myelitis (TM). Myelin oligodendrocyte glycoprotein antibody disease (MOGAD) is often associated with demyelinating conditions, but may also present with encephalopathy without demyelinating lesions. Approximately 30% of patients diagnosed with MOGAD experience a relapse. Neurocognitive outcomes in PADS have reduced performance on tasks related to attention, processing speed, visual motor, and fine motor functioning. Psychosocial problems include anxiety, depression, and fatigue. Neurocognitive and psychosocial impacts of MOGAD events for the pediatric population are sparse. The current study sought to characterize neurocognitive sequelae from MOGAD (MAGAD+) compared to patients diagnosed with PADS without MOGAD (MOGAD-).

Participants and Methods: Twenty children and adolescents (6-18 years) diagnosed with PADS were recruited using a clinic convenience sample of patients. Study participants completed a neurocognitive battery and parents completed questionnaires of behavioral and emotional functioning. Demographic and medical variables were collected via retrospective chart review. Chi square and *t*-test analyses were used to compare MOGAD+ and MOGAD- groups. Performance on neuropsychological and behavioral questionnaires were compared to established sex and age norms to assess the degree to which group means deviate from normative expectations.
Results: MOGAD+ and MOGAD- groups did not significantly differ based on demographic, neurocognitive, or parent reported social and behavioral functioning. Neurocognitive testing documented mean scores that were in the average range between groups. Notable variability in performance was observed within both MOGAD+ and MOGAD- groups. Bilateral fine motor deficits, visual motor, visual perception attention, and executive functioning deficits were notable for the combined PADS group, with 30-50% performing >1.5 SD below the mean. The number of white matter lesions or hospital duration were not significantly associated with performance on neurocognitive measures. However, older age of onset of PADS was significantly correlated with lower performance on visual motor integration and visual perception tasks ($r(18) = -.50$ $p = .026$; $r(18) = -.53$ $p = .016$). Findings also revealed associations of shorter hospitalization stays with higher behavioral symptoms on a parent measure of social/behavioral functioning ($r(18) = -.47$ $p = .037$).
Conclusions: Consistent with the PADS literature, relative to control norms, lower performance on tasks related to attention, executive functioning, visual motor, and fine motor skills, irrespective of MOGAD status, are observed in the current study. The variability of functioning and heterogeneity observed across PADS diagnoses warrants further study to better understand the impact of clinical course, treatment outcomes, and neuropsychological sequelae over time in this population. Higher behavioral distress with shorter hospital stays may indicate a potential opportunity for patient and family education preparing for return to home/community. The current study was limited by small sample size, variable time since hospitalization, and heterogeneous diagnoses

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within PADS that make it difficult to generalize findings. Future studies could prospectively follow patients over time to better understand the trajectory of recovery, identify predictors for relapse, and those at greatest risk of neurocognitive and behavioral deficits.

Categories: Multiple Sclerosis/ALS/Demyelinating Disorders
Keyword 1: demyelinating disorders
Keyword 2: pediatric neuropsychology
Keyword 3: cognitive functioning
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29 Associations Between Social Support and Cognitive Performance Among Persons with MS

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Objective: Social support is an emerging protective factor against cognitive decline. However, the relationship between social support and cognitive functioning in the multiple sclerosis (MS) population is not well understood. The present study aimed to investigate the associations between different aspects of social support and cognitive performance among persons with MS.
Participants and Methods: A volunteer sample of 63 persons with MS (% female = 88.9, mean age = 48.16) completed measures assessing perceived levels of social support measured by the Medical Outcomes Study Support Social Survey 5-item short form (MSSS-5), and social network (social network diversity and total size of social network) measured by the Social Network Index (SNI). Cognitive functioning was assessed by a brief virtual examiner-administered neuropsychological test battery (using a teleconferencing platform), including the Rey Auditory Verbal Learning Test, Controlled Oral Word Association Test, animal naming, and the Symbol Digit Modalities Test. Participants also completed brief, self-paced, virtual cognitive tests through the testmybrain.org platform, which consisted of digit span and the Trail-Making Test. A principal component analysis (PCA) was carried out to reduce the number of neuropsychological outcomes into fewer dimensions. Multiple linear regressions were conducted to examine the associations between social support measures and cognitive performance. Regression models were adjusted by the levels of depressive symptoms (operationalized by the Chicago Multiscale Depression Inventory or the Hospital Anxiety and Depression Scale) and premorbid functioning (measured by the Test of Premorbid Functioning).
Results: A PCA reduced neuropsychological outcomes into 3 components representing cognitive domains of 1) processing speed/executive functioning, 2) verbal memory, and 3) verbal fluency / simple attention. In the unadjusted models, both perceived social support (i.e., to what extent one receives assistance from their social network) as well as total size of social network (i.e., total number of people one regularly talks to) were significant predictors of the processing speed/executive functioning component score of moderate strength, where $F(1, 59) = 11.93$, $p = .001$, $\beta = 0.41$ and $F(1, 59) = 11.57$, $p = .001$, $\beta = 0.41$, respectively. These associations were maintained after adjusting for depressive symptoms and level of premorbid functioning ($F(4, 55) = 3.31$, $p = .003$ and $F(4, 55) = 3.31$, $p = .006$, respectively). On the other hand, social network diversity (i.e., number of different types of close social relationships one has) was not a significant predictor of the processing speed/executive functioning component score ($p > 0.05$). None of the social support measures were significantly associated with the verbal memory and verbal fluency/simple attention component scores.
Conclusions: Greater social support (specifically, perceived levels of assistance and total size of social network) is associated with better performance on processing speed/executive functioning measures among persons with MS, independent of effects from depressive symptoms and premorbid functioning. Maintaining a strong social support

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