

Title: Health Disparities in Pediatric Patients with Autism Spectrum Disorder and COVID-19

Background

Despite a growing body of evidence, our understanding of the barriers to healthcare encountered by individuals with ASD are not well understood. Adolescent patients with ASD face unique challenges, especially amongst individuals from historically minoritized racial groups. ASD has also been associated with an increased mortality from COVID-19. This study aims to compare sociodemographic factors and health outcomes in pediatric patients with ASD and COVID-19 versus COVID-19 alone.

Methods

We designed a retrospective cohort study utilizing data from Epic's Cosmos (a de-identified dataset from 35 contributing health systems), examining pediatric patients (ages birth to 21) with a diagnosis of ASD and COVID-19 compared to patients with a diagnosis of COVID-19 alone between January 2019 and June 2023. The data was analyzed in the R environment.

Results

21,708 unique patients who had an inpatient admission due to COVID-19 were analyzed in this study. Of these patients, 1,028 individuals had a diagnosis of ASD and COVID-19, whereas 20,680 individuals had a diagnosis of COVID-19 alone. Age differences between the groups were significant ($p < 0.001$, effect size $r = 0.055$), with the ASD + COVID patients being older (12 years old) than patients with COVID alone (9 years old). The odds of having an admission that lasted more than 3 days was 1.28 times higher for patients with ASD + COVID compared to patients who had COVID alone (95% CI: 1.12 to 1.45, $p < 0.001$). Significant racial differences were noted between groups. Adjusted standard residuals demonstrated that likely the primary differences between groups were related to higher numbers of White subjects in the ASD + COVID compared to higher numbers of Black/African American subjects in the COVID only group, $\chi^2(5, N = 21,708) = 32.173$, $p < 0.001$, effect size = 0.017. Significant differences in insurance classes were noted between groups, $\chi^2(4, N = 21,708) = 46.999$, $p < 0.0001$, effect size 0.015, with adjusted standard residuals pointing to the difference between groups being likely related to a higher proportion of patients in the ASD + COVID group having Medicaid insurance, versus the COVID only group, who had a higher likelihood of insurance class of Miscellaneous or Self-pay.

Conclusion

Pediatric patients with ASD and COVID-19 were more likely to have longer inpatient hospitalizations and higher proportions of Medicaid insurance coverage, compared to individuals with COVID-19 alone. Our study demonstrates that disparities exist for pediatric patients with ASD and COVID-19. Further studies should be done to address barriers and support health outcomes for patients with ASD.