

# STRONG CHILDREN'S RESEARCH CENTER

## Summer Research Scholar

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### ABSTRACT

#### *Eating Disorders and COVID-19; An Investigation into eating disorder hospitalizations and emergency department encounters during the pandemic*

**Background:** Up to 22% of children and adolescents have been diagnosed with disordered eating. Children with disordered eating are at substantial risk for potential harm from organ dysfunction related to endocrine disturbances, hematologic abnormalities, neurocognitive defects, and cardiovascular complications, among others. In addition, individuals with eating disorders are also more likely to be diagnosed with anxiety, depression, and obsessive-compulsive disorder. The physical and mental detriments associated with eating disorders make them amongst the most lethal psychiatric conditions; anorexia nervosa, specifically, is considered the most deadly of all psychiatric conditions. Hospitalization rates for eating disorders have been on the rise in recent decades, but there are significant knowledge gaps in understanding the effects of the COVID-19 pandemic, characterized by strict stay-at home orders and a global increase in anxiety/ uncertainty, on hospitalization rates for eating disorders, and how hospitalization rates may vary by sociodemographic characteristics. This study seeks to address these knowledge gaps by evaluating eating disorder (EDO) hospitalization rates among children before and after the pandemic period using a representative, population-based sample for the state of New York.

**Objective:** This study seeks to investigate the most vulnerable population(s) for EDO hospitalizations and emergency department visits, as well as to assess the impact of the COVID-19 pandemic on rates of EDO hospitalizations and emergency department encounters using the New York State SPARCS Dataset for individuals aged 0-21 years. To do so, stratified interrupted time series analyses, stratified according to race and insurance status, will be performed using STATA. EDO rates will be defined as the proportion of all inpatient and emergency room encounters that have a primary or admitting diagnosis of any EDO, using the ICD-9 and ICD-10 diagnostic codes. The pandemic will be marked from March 2020 to June 2021, corresponding to the governor-declared "state disaster emergency." Additionally, the odds ratio associated with the covariates of interest (age, gender, race, ethnicity, and insurance status) will be calculated using a logistic regression for aggregated data from 2012-2023. This study also seeks to evaluate how the rates of EDO hospitalizations and emergency department encounters for the Finger Lakes Region compare to those of the rest of the state.

**Results:** The likelihood of being hospitalized or visiting the emergency department with an EDO diagnosis is significantly higher for individuals that are female, white, aged 15-19, and on private insurance (OR = 24.54, 6.34, 11.65, 4.03,  $p = .000^*$ , respectively). Those that are non-Hispanic may have an increased likelihood for an EDO-related hospitalization, but this observation was not statistically significant (OR = 1.32,  $p = .154$ ). Though EDO rates have been steadily increasing since 2012, there was a 6-fold increase ( $t = 6.14$ ,  $p = 0.00^*$ ) in the magnitude of this upwards trend associated with the pandemic time frame (March 2020 – June 2021). The extent to which the pandemic exacerbated these universal upwards trends was highly variable according to race/ethnicity (White;  $t = 3.42$ ,  $p = .001^*$ , Black;  $t = -.28$ ,  $p = .777$ , Hispanic;  $t = 2.41$ ,  $p = .017^*$ ), and insurance status (Medicaid;  $t = 2.92$ ,  $p = .004^*$ , Private Insurance;  $t = 2.44$ ,  $p = .016^*$ ), but all cohorts studied, with the exception of black individuals, experienced significant pandemic-associated increases. From July 2021 to December 2023, EDO rates within all cohorts decreased, and these decreases were statistically significant for all but black individuals. There likewise appeared to be a nearly statistically significant exacerbation of already-increasing EDO rates for individuals residing in the Finger Lakes ( $t = 1.95$ ,  $p = .053$ , followed by a statistically significant decrease after the end of the state disaster emergency ( $t = -2.30$ ,  $p = .023$ ). Individuals residing in this region were found to be less likely to be hospitalized or visit the emergency department with an EDO diagnosis (OR = .44,  $p = .014^*$ ).

**Conclusion:** The COVID-19 pandemic time frame was associated with significant increases in the rates of eating disorder hospitalizations and emergency department visits for nearly all individuals. Further research should seek to explain the underlying cause(s) for these trends, as well as to investigate why such significant sociodemographic differences exist in both likelihood of an EDO hospitalization, and in the observed pandemic-associated increases. While this study highlights important disparities existing within the EDO hospitalization realm, its descriptive and quantitative nature cannot explain the underlying causes for these disparities, and to what extent these hospitalization-based rates are reflective of true population-level differences as well as the extent to which care-seeking behaviors contribute to hospitalization disparities. Additional studies should investigate EDO rates within a general, non-hospitalized population as there are a significant number of factors (ex. cultural stigma, care-seeking tendencies, severity of illness, etc.) which likely influence the rates for EDO hospitalizations and/or emergency department encounters. Though hospital-based data can provide tremendous insight into what may be occurring within a larger population, it does not provide an exact explanation for EDO disparities within the population, especially given that the majority of those with an eating disorder do not seek inpatient or emergency department treatment.

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