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QOL-41. COMPARISON OF SOCIAL DETERMINANTS OF HEALTH MEASURES ON IQ AND ACADEMIC OUTCOMES IN PEDIATRIC BRAIN TUMORS

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BACKGROUND: Treatment for pediatric brain tumors impacts IQ and academic achievement; fewer studies have examined the role of social determinants of health (SDoH). To date, studies have primarily focused on family-based SDoH such as insurance type or parental education as predictors of cognition. Limited studies have examined community factors, though our work highlighted the role of education quality on IQ and academics in pediatric brain tumors. To our knowledge, no study has examined the predictive value of family and community-based SDoH. METHODS: Participants included 151 pediatric brain tumor patients (M age at diagnosis=8.82) seen for a clinical neuropsychological evaluation (M age at evaluation=13.71). IQ was obtained from age-appropriate intelligence measures (WISC-6 years, DAS-II-6 years); untimed reading and math calculation were examined via WIAT/KTEA/ WJ subtests. Family-based SDoH included insurance type (public, private) and maternal education (high school degree, some college, less than college degree). Community-based SDoH included the Area Deprivation Index (ADI) and Education, Health-Environment, and Social-Economic indices from the Childhood Opportunity Index (COI). Multiple regressions examined variance in IQ, reading, and math accounted for by each of the SDoH measures, after controlling for treatment exposures using the Neurological Predictor Scale (NPS). RESULTS: Insurance ($\beta=-.302$, t(151)=-4.00; p<001) and Education ($\beta=-.235$, t(151)=-3.14; p=.002) accounted for 14.9% and 19.7% of the IQ variance, respectively. Education also accounted for 12.8% of the reading variance ($\beta=-.304$, t(109)=3.40; p<.001). Both the Education ($\beta=-.381$, t(107)=2.28; p<.03) and Social-Economic ($\beta=-.381$, t(107)=2.28; p<.03) indices accounted for 7.7% and 11.3% of the math calculation variance, respectively. CONCLUSIONS: Community, particularly those related to education and social & economic resources, and family factors (e.g., insurance status) were associated with IQ and academic performance. Findings indicate the importance of investigating both family and community factors that may contribute to outcomes in pediatric brain tumors.