Social Determinants of Health and Pain Coping Strategies in Pediatric Patients with Sickle Cell Disease

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Background

Sickle cell disease (SCD) is a hematologic disease characterized by sickle-shaped red blood cells due to abnormal hemoglobin. SCD causes painful vaso-occlusive crises (VOC), which occur in patients as young as 6 months old. SCD affects approximately 100,000 people in the US, 90% of whom are non-Hispanic Black or African American. This study's objective was to assess pain coping strategies of children with SCD, as well as the impact of social determinants of health (SDoH).

Methods

A retrospective chart review was performed on pediatric patients with SCD who had baseline data for the PedsQL Coping Inventory. This assessment includes 4 open-response questions and 42 coping strategies with multiple-choice options. For patients 5 to 18 years old, both patients and parents or primary caregivers were surveyed. The Area Deprivation Index (ADI) and Child Opportunity Index (COI) values were obtained as indices of SDoH. Descriptive statistics were performed for demographic variables and ADI/COI. Univariate and multivariable regression analyses were performed on PedsQL coping domains and ADI/COI.

Results

Regression analyses demonstrated that total parent score was significantly associated with age of child. For every 1-year increase in the child's age, parent total coping score increased by 0.05 ($p<0.000$). In univariate and multivariate analyses when controlling for age, total parent score was not associated with child/teen score total.

Total parent, child, and teen scores were not associated with ADI/COI. Teen sub-scores for catastrophizing, social support, and distractibility were associated with state ADI ($p=0.0016$, 0.0075, 0.0216 respectively). Teen problem-solving and cognitive coping sub-scores were not associated with ADI/COI. Parent/child sub-scores were not associated with ADI/COI.

Conclusion

This study provides a preliminary understanding of the relationship between pain coping skills in pediatric patients and SDoH. Further investigation could yield clarity to the relationship between these measures and elucidate how patient pain management is being affected.