

60 Family Functioning Effects on Cognitive Abilities in Children with Sickle Cell Disease

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Objective: Psychosocial factors show a significant relationship between child behavior problems, family functioning, and cognitive performance in children with Sickle Cell Disease, marking those as important targets for intervention among this population. The purpose of this research is to address the effects of psychosocial factors impact on specific cognitive domains.

Participants and Methods: Archival data from the National Institutes of Health's Cooperative Study of Sickle Cell Disease was used. Data was restricted to individuals aged 14 or younger ($N = 2,408$), with 47.8% ($n = 1,152$) identified as female and 52.2% ($n = 1,256$) as male. Black or African American (96.9%, $n = 2,334$) children made up the majority of the sample, with the remainder coded as "other" (2.8%, $n = 68$). The measures utilized included the Wechsler Intelligence Scale for Children-Revised (WISC-R), Wechsler Intelligence Scale for Children-Third Edition (WISC-III), Peabody Picture Vocabulary Test (PPVT), Achenbach Child Behavior Checklist, and Family Environment Scale (FES).

Results: Bivariate correlations were completed with significant correlations found between FES and performance on the WISC-R/III and PPVT. Supportiveness subscale on the FES demonstrated several statistically significant correlations with WAIS FSIQ ($r = .21$, $p = .000$) as well as the Information ($r = .22$, $p = .000$), Similarities ($r = .17$, $p = .001$), Arithmetic ($r = .13$, $p = .021$), Block Design ($r = .11$, $p = .036$), Vocabulary ($r = .22$, $p = .000$), Object Assembly ($r = .12$, $p = .033$), Comprehension ($r = .19$, $p = .000$), and Digit Span ($r = .13$, $p = .014$) subscales. A statistically significant correlation was observed between the PPVT and the Supportiveness subscale ($r = .34$, $p = .000$).

Conclusions: Various areas of cognitive functioning are affected by family dynamics. Improvement in family functioning would benefit the cognitive functioning of children with SCD. To increase aspects of family functioning including supportiveness, early identification of children with SCD, targeted interventions, and

family and/or individual therapy for caregivers are suggested.

Categories: Medical/Neurological Disorders/Other (Child)

Keyword 1: sickle cell disease

Keyword 2: pediatric neuropsychology

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Coffee Break

3:15 - 3:30pm Friday, 3rd February, 2023

Exhibit Hall - Town & Country Ballroom A

Invited Symposium 3: Pediatric Neuropsychology Medical Advances and Life Span Outcomes

Co-Chairs: Celiane Rey-Casserly and Lana Harder

Presenters: Adam R. Cassidy, Andrew Heitzer, Jennifer Longoria

3:30 - 4:55pm

Friday, 3rd February, 2023
Pacific Ballroom A

Abstract & Learning Objectives:

Medical advances continue to improve the outlook for pediatric patients with a variety of acquired and congenital medical conditions. Such critical advances have an impact on lifespan outcomes for affected individuals. Neuropsychology plays a critical role in evaluating outcomes and informing clinical care for pediatric patients, with an increasing role in prevention. Neuropsychologists are essential members of interdisciplinary teams and ongoing medical management. Our symposium will present examples of the latest progress made over the last decade in the areas of sickle cell disease, demyelinating disorders, congenital heart disease, and cancer. Highlights include recent research on neurocognitive surveillance for pediatric patients with sickle cell disease including identification of risk and resilience

factors and ways to reduce cognitive decline; discovery of the anti-MOG antibody in patients with demyelinating disorders and associated neuropsychological outcomes; advances in the understanding of congenital heart disease, the latest initiatives in the field, and discussion of neuropsychology's role in the care of these patients; and advances in targeted therapies for childhood cancer, risks associated with cancer and its treatment into adulthood, and an application of a developmental, lifespan approach in the care of childhood cancer survivors. Following each presentation, there will be an opportunity for discussion and questions. Upon conclusion of this course, learners will be able to:

1. Describe recent advances in medical care for pediatric sickle cell disease, demyelinating disorders, congenital heart disease, and cancer
2. Explain long-term neuropsychological outcomes in pediatric medical disorders
3. Assess the role of neuropsychology in advancing the field across pediatric medical disorders

Symposium 11: Military TBI: Neural and Clinical Correlates of Cognitive Function

3:30 - 4:55pm

Friday, 3rd February, 2023

Town & Country Ballroom B

Chair

Lars Hungerford
Traumatic Brain Injury Center of Excellence,
San Diego, USA

Summary Abstract:

This symposium will highlight recent advances in understanding, assessment, and treatment of the effect traumatic brain injury has on cognitive functioning in military Service Members and Veterans. Since 2000, U.S. Service Members have sustained over 450,000 brain injuries, the majority of which are mild. Although TBI mechanisms and characteristics among Service Members can differ from civilians in significant

ways, research being conducted at Department of Defense and Veterans Affairs sites to address this problem can also yield benefits to civilians with TBI. Four presentations will focus on various aspects of TBI evaluation and treatment based on findings from their own research. Dr. Mark Ettenhofer will present findings relating to promising new eye tracking measures and their relationship to standardized cognitive test results among Service Members with mild traumatic brain injury. Next, Dr. Victoria Merritt will examine the role of symptom attribution on treatment-seeking Veterans with a remote history of traumatic brain injury. In particular, Dr. Merritt will be examining both self-reported symptoms as well as performance on objective neurocognitive tests. Dr. Jason Bailie will describe an ongoing study comparing a novel approach to cognitive rehabilitation, Strategic Memory Advanced Reasoning Training (SMART), to traditional cognitive rehabilitation interventions in Active Duty Service Members. The results of this study have significant implications for treatment of all individuals with chronic symptoms following mTBI, regardless of military status. Finally, Dr. Jared Rowland will present findings on the influence of mild traumatic brain injury and blast exposure on the relationship between brain function, cognitive outcomes, and symptom severity in a sample of Iraq and Afghanistan combat veterans. This study will demonstrate how the relationship between aspects of the functional connectome and cognitive function are changed by TBI and blast. Overall, these studies highlight novel approaches to the understanding, assessment, and treatment of TBI being implemented in the Department of Defense and Veterans Affairs that have high applicability to the civilian population.

Keyword 1: concussion/ mild traumatic brain injury

Keyword 2: technology

Keyword 3: brain function

1 Neurocognitive Correlates of Oculomotor Performance among U.S. Military Personnel with Mild Traumatic Brain Injury