Findings are clinically applicable as they provide professionals with information that can help assess individual expected patterns of recovery and thus refer patients to appropriate support services.

Categories: Acquired Brain Injury (TBI/Cerebrovascular Injury & Disease - Child)
Keyword 1: cerebrovascular injury
Keyword 2: child brain injury
Keyword 3: cognitive functioning
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2 Associations Between Motor Functioning and Intellectual Abilities in Pediatric Arterial Ischemic Stroke

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Objective: Motor impairments are one of the most common adverse outcomes after pediatric arterial ischemic stroke (AIS), affecting approximately half of survivors. The development of motor and cognitive skills is closely interrelated, and they share common neural substrates. The objective of this study was to examine whether motor functioning after the acute phase of stroke is associated with school-age intellectual abilities. We also examined associations between concurrent motor functioning and intellectual abilities. Finally, we explored clinical features associated with motor impairments.
Participants and Methods: Participants were 64 children, 34 childhood AIS (Meanage= 11.90[2.38]); 30 perinatal AIS (Meanage= 8.75[2.22]), from the Children's Stroke Program at SickKids Hospital. Motor functioning was assessed with the Pediatric Stroke Outcome Measure sensorimotor subscale at two timepoints, Time 1 or early recovery (childhood group between 30 days post-stroke to 1 year; perinatal group between 2-5 years of age) and Time 2, closest to neuropsychological testing. Intellectual abilities were measured using the Wechsler Intelligence Scale for Children 4th or 5th edition. Associations between motor and intellectual functioning were examined separately in childhood and perinatal AIS groups. Clinical features associated with motor impairment were examined across the full sample.
Results: Motor functioning during early recovery was significantly associated with processing speed (r= -.391, *p*= .036) in the perinatal group and with overall intellectual functioning (r= -.414, *p*= .018) verbal intellectual abilities (r= -.444, *p*= .011), working memory (r= .393, *p*= .026), and processing speed (r= -.351, *p*= .042) in the childhood group. There were no associations between concurrent motor and intellectual functioning in the perinatal group, and only with processing speed (r= -.525, *p*= .002) in the childhood group. When motor functioning was dichotomized as no/mild motor deficit and moderate/severe motor deficit at Time 1, children in the perinatal group with moderate/severe motor deficit had significantly lower perceptual reasoning scores (*t*[28]= 2.15, *p*= .040) and participants in the childhood group with moderate/severe motor deficit had significantly lower perceptual reasoning (*t*[32]= 2.35, *p*= .025) and processing speed (*t*[32]= 2.14, *p*= 0.41) scores. There were no differences between no/mild and moderate/severe motor deficit groups for either perinatal or childhood AIS at Time 2. Clinical features associated with moderate/severe motor deficit at Time 1 were cortical+subcortical infarcts, large lesions, presenting with hemiparesis and seizures at time of neuropsychological assessment, and accessing occupational therapy and physical therapy.
Conclusions: Results suggest that motor functioning during early stroke recovery is associated with intellectual outcome, whereas motor functioning at time closest to neuropsychological assessment is not. This may be related neuroplastic changes post-injury, likely in frontal-subcortical connections, that result in observable motor deficits after stroke and affect subsequent hierarchal brain maturational processes thereby impacting later cognitive outcome. Different patterns of associations between motor functioning and specific intellectual abilities in perinatal and childhood groups suggest possible age-mediated effects on this relationship.

Categories: Acquired Brain Injury (TBI/Cerebrovascular Injury & Disease - Child)
Keyword 1: pediatric neuropsychology
Keyword 2: intellectual functioning

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Keyword 3: motor function
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3 The Lived Experiences of Pediatric Stroke Survivors: A Qualitative Perspective on Psychosocial Outcomes and Quality of Life

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Objective: Despite knowledge concerning the prevalence and adverse consequences of pediatric stroke, there is limited awareness of the immediate and long-term effects on social-emotional functioning and psychological adjustment. Evidence from the broader childhood literature suggests that young individuals living with disabilities or neurological conditions are at considerably greater risk for emotional and behavioral concerns and lower quality of life. Qualitative research methodology can elucidate personal and subjective aspects of experience that cannot be entirely represented through quantitative measures. Although the parent experience of pediatric stroke has been qualitatively investigated, we endeavored to fill a gap in the pediatric stroke literature by focusing on the youth voice. The current project aimed to qualitatively explore emotional, behavioral, and social outcomes in pediatric stroke and identify personal and environmental factors that can influence psychological risk and resilience.
Participants and Methods: Individual interviews were conducted with 14 children, aged 8 to 18 years, with a history of ischemic stroke. The semi-structured interview protocol aimed to capture the lived experience of survivors and encompassed open-ended questions about daily life, memories, perceptions, and psychosocial experiences. Interviews spanned 40-60 minutes in length, were audio recorded, transcribed verbatim, and qualitatively analyzed using reflexive Thematic Analysis methodology. Coding, theme generation, and data visualization were completed using NVivo12 software.
Results: Participants discussed their views and understanding of their stroke, the perceived impact of stroke on their daily life, and the meaning-making process surrounding this experience. Children shared their perceptions regarding their abilities, challenges, life circumstances, aspirations, and relations to peers. Prominent themes encompassed shyness and social anxiety, cognitive and learning troubles, test anxiety, concealing feelings of sadness, the stigma of physical disability and its impact on social participation, bullying, and loneliness/isolation. Insight into adaptive coping mechanisms was present, as was emphasis on family closeness and the importance of supportive peers. Participants described feeling unique and were proud of their values and personal identity. Gratitude was expressed regarding stroke medical care and rehabilitative services, with an emergent theme surrounding the desire to give back to society.
Conclusions: Taken together, our qualitative study findings illustrate the profound impact that pediatric stroke can have on children's emotional experiences, personal identity, self-efficacy, learning, behavior, and psychosocial functioning. Despite these challenges, an enormous degree of resiliency was also demonstrated in youth's insights into coping and adaptation to challenge. Our findings speak to the importance of psychological assessment and treatment planning surrounding internalizing symptoms in children with stroke. Given the potential for pervasive changes in various aspects of daily life, a comprehensive understanding of the personal psychological experiences and perceptions of pediatric stroke patients is essential, as it will facilitate opportunity for timely interventions that can improve coping and adaptive outcome. Implications will be discussed with regard to empowering pediatric stroke survivors, enhancing public education efforts about childhood acquired brain injury, and reducing stigma associated with disability and use of required supports.

Categories: Acquired Brain Injury (TBI/Cerebrovascular Injury & Disease - Child)
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Keyword 2: quality of life
Keyword 3: anxiety
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