

Guest Editorial

Spinal Cord Injury

Although children with spinal cord injury represent a small segment of the pediatric population receiving rehabilitation medicine, the frequency of new injuries in children has remained relatively constant and the physical, psychological, and social rehabilitation needs are complex, as the needs change with growth and development. This issue presents a series of seven manuscripts; each addressing an important and under-studied area of pediatric SCI.

The first two manuscripts, by Behrman et al. and Castello et al., discuss physical rehabilitation strategies for functional restoration and health promotion. Behrman promotes a shift from the compensatory rehabilitation paradigm to a paradigm of motor restoration for children with incomplete injuries, while Castello describes the outcomes of cycling exercise using functional electrical stimulation (FES) on health benefits. The relevance of both papers cannot be underestimated. The potential outcomes of restorative rehabilitation and FES-assisted exercise on function and health-related quality of life are potentially life altering. On the other hand, the financial costs and the time commitment for the child and family are not insignificant. In the future, replication studies, studies using designs that produce “higher level evidence”, and/or comparative effective studies should be undertaken to build upon the evidence described by Behrman and Costello.

The building of evidence is dependent upon outcome instruments that are valid, generate reliable data, and are responsive to treatment. Calhoun describes a pilot reliability study on the WISCI-II in children. The WISCI-II was developed as a SCI clinical trial instrument that evaluates changes in walking ability in adults with SCI. Calhoun presents preliminary evidence in support of the WISCI-II with children. Barakat presents a discussion on an emerging imaging method (diffusion tensor imaging) that has potential as a diagnostic tool for spinal cord injury. Clearly, pediatric SCI instrument development and validation is a research priority.

Bryden and colleagues provide an overview of technology and discuss opportunities and challenges asso-

ciated with deploying technology in pediatric spinal cord injury rehabilitation. The discussion of technology in this paper is uniquely crafted, as Bryden is a clinical expert in technology with a wealth of experience in adult SCI while the remaining authors are pediatric SCI clinical specialists with individual expertise in a wide range of technologies for children. Collectively they have produced an exceptional paper with significant clinical relevance to pediatric SCI rehabilitation.

The two remaining papers address the social and personal dimensions of pediatric SCI rehabilitation. Akhtar et al. describe a qualitative study using phenomenological methodology and reports the outcomes of pediatric SCI on siblings. The paper utilizes adjustment, coping, and attachment theories to help explain research findings. Finally, Kelly and colleagues describe the outcomes of participation after pediatric SCI.

I commend the authors of each of these papers. While we will continue to work diligently to design, fund, and successfully execute “higher level” studies (such as randomized controlled trials, parallel group designs, etc.), there are real barriers (access to children with SCI and cost, as examples). Thus, evidence that is generated as a result of using systematic treatment protocols and valid instruments that produce reliable data; systematic documentation of outcomes is useful to aid in clinical decision making and provides a platform for replication by others who can further strengthen the evidence in support of rehabilitation of children with SCI. The authors of the papers in this issue provide us with a platform.

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