

The development and evaluation of the SCI-ICS: the Spinal Cord Injury-Interventions Classification System. A classification system of interventions for Physical therapists, Occupational therapists and Sports therapists in Spinal Cord Injury rehabilitation.

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GOAL OF THE NEWSLETTER:

To inform professionals in spinal cord injury rehabilitation about the progress of the development and evaluation of the the Spinal Cord Injury-Interventions Classification System (SCI-ICS).

RESEARCH OBJECTIVES

To develop and evaluate an international classification system for SCI rehabilitation interventions directed at the domains mobility and self-care. Recently we named this classification system the Spinal Cord Injury-Interventions Classification System (SCI-ICS). With the SCI-ICS interventions of physical therapists, occupational therapists and sports therapists for patients with a SCI can be described and compared.

THE SCI-ICS

In the SCI-ICS we identified 10 categories for interventions directed at body systems, 8 categories directed at basic activities and 7 categories for complex activities. In the classification we choose to develop, next to the generally known level of body functions, separate levels for basic and complex activities. The interventions listed at the level of basic activities are directed at practising skills and techniques of body positions and movements. At complex activities the interventions are directed at practising skills and techniques of body positions and movements in a meaningful context or environment.

Each category contains a list of types of interventions; exercises and modalities, assessment, education and equipment. All 139 interventions are defined and described in a manual. At the end of this year the English version of the SCI-ICS will be available on request.

SUMMARY OF RESEARCH 2004-2007

The project started in 2004. The SCI-ICS was developed from SCI literature, models of human functioning, and clinical practice. In 2005 a first version of the SCI-ICS was presented in a **Delphi consensus procedure** to representatives (n=30) of 10 Dutch spinal cord injury specialised centres. With the Delphi consensus procedure we obtained

agreement on (1) the definitions of the three levels, (2) the relevancy, (3) the completeness, and the terminology of the levels, categories and interventions. **The results of the Delphi consensus rounds are described in Newsletter 1 and published in the Journal of Neurologic Physical Therapy.**

In 2006 the second version of the SCI-ICS was used in a **feasibility study**. In this study we provided evidence for the feasibility; i.e. can different therapists in different settings use the SCI-ICS to describe the contents of their day-to-day treatment sessions. In this study three specialized Dutch centres were involved: Rijndam Rehabilitation Centre, Rotterdam, St. Maartenskliniek, Nijmegen, and De Hoogstraat, Utrecht, The Netherlands. In total 36 therapists assigned 1625 codes to 826 treatment sessions of 142 patients over a period of 4 weeks. The results showed that the SCI-ICS manual was complete, clear, easy, and quick to use. The listed categories and interventions were reflective for clinical practise. **The results of the feasibility study are described in Newsletter 2 and published in Archives of Physical Medicine and Rehabilitation.**

EXPERT VALIDITY AND RELIABILITY

In 2007 the final version of the SCI-ICS was evaluated in an expert validity and reliability study. To provide evidence for expert validity we investigated whether the assigned code by the therapists were identical to the codes assigned by the researcher. To provide evidence for inter-rater reliability we investigated whether the assigned codes of the same therapists were completely identical at the first and second measurements. To provide evidence for intra-rater reliability we investigated whether the codes between the therapists of the same discipline were completely identical at the first and second measurements.

See other side

In this study 15 therapists (3 sports, 6 occupational and 6 physical therapists) of 3 specialized Dutch centres assigned codes from the SCI-ICS to videotaped interventions. The therapists were instructed to first read the manual of the SCI-ICS, and then assign one code to each observed intervention. This procedure was repeated three weeks later.

RESULTS

A total of 252 codes were assigned. The expert validity was good: percentage of completely correct classified codes was high at both measurements (91.7% and 94.4%). Intra-rater agreement was also good (90.9%). The inter-rater agreement within the physical therapists and the occupational therapists was high at both occasions (mean 92.3% and 87.0% respectively), but lower within the sports therapists (mean 69.3%).

The results show that with the SCI-ICS treatment sessions can be classified in a valid and reliability way. The results of the expert validity and reliability study are submitted for publication in an international scientific journal.

CLASSIFICATION OF INTERVENTIONS WITH THE SCI-ICS IN THE NETHERLANDS

Recently the next part of the research took place in the 3 Dutch centres. In this study we investigated whether the SCI-ICS can detect differences in treatment sessions (1) between centres, and (2) between type of SCI (tetraplegia complete and incomplete, paraplegia complete and incomplete). Fifty-three therapists, assistants and interns classified all treatments sessions (individual and group sessions) of 48 included patients with a SCI over a period of 4 weeks.

The 48 patients received 1693 treatments. The treatments were classified using a total of 2687 codes. The number of classified treatment sessions varied per: therapist (range 1-104), per centre (863, 440, and 390, respectively), and per patient (range 1-90). Data analysis is ongoing.

The results of the Dutch study will be described in the next newsletter and submitted for publication.

THE NEXT STEP: CLASSIFICATION OF INTERVENTIONS WITH THE SCI-ICS ABROAD

To test the international use of the SCI-ICS the next research is planned to take place in Australia and Norway. The results will be compared with the Dutch results.

INTERNATIONAL PRESENTATION

16th European Congress of Physical and Rehabilitation Medicine, Brugge, juni 2008.

PUBLICATIONS

Development of a classification system of physical, occupational, and sports therapy interventions to document mobility and self-care in spinal cord injury rehabilitation. Langeveld SA van, Post MW, Asbeck FW van, Postma K, Dam D ten, Pons K. J Neurol Phys Ther 2008;32:2-7.

Feasibility of a Classification System for Physical Therapy, Occupational Therapy, and Sports Therapy Interventions for Mobility and Self-Care in Spinal Cord Injury Rehabilitation. Langeveld SA van, Post MW, Asbeck FW van, MD, PhD, Postma K, PT, MSc, Leenders J, OT, Pons K, MD. Arch Phys Med Rehabil 2008; 89:1454-1459.

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