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CONTEMPORARY PAIN NEUROS CIENCE APPLIED TO PEDIATRIC CHRONIC PAIN: FROM MECHANISMS TO TREATMENT

ROSELIEN PAS
Monday, september 30th 2019 at 18:00
Room Auditorium P. Brouwer, campus Jette
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ABSTRACT OF THE RESEARCH

It may be counterintuitive, but substantial research in adults has shown that the presence of pain is possible without any tissue damage and vice-versa. A so-called 'state of hypersensitivity of the central nervous system' (i.e. central sensitization) is described, playing an important role in the development and persistence of chronic pain. Based on the premise that patients with chronic pain might change their pain behavior and beliefs more easily when they are given an explanation about what is wrong in their body, clinicians nowadays educate their patients about pain (i.e. pain neuroscience education). The core aim of this thesis was to investigate this contemporary pain neuroscience in children with chronic pain.

Part one of this thesis includes two studies investigating the presence of central sensitization in children with chronic pain. Results of our first systematic literature review showed that signs of central sensitization (i.e. secondary hyperalgesia, altered nociceptive processing in the brain) were found in several pediatric chronic pain conditions. However, there was a lack in studies investigating other manifestations of central sensitization (i.e. conditioned pain modulation and nociceptive brain changes), which are necessary to provide firm evidence about the presence of central sensitization in children with chronic pain. Results from our experimental study showed that young children with functional abdominal pain disorders have altered conditioned pain modulation and demonstrate secondary hyperalgesia when compared to healthy children.

Part two of this thesis includes two studies related to the application of pain neuroscience education for children. The first study provides clinicians and researchers with a clear guideline on how to apply pain neuroscience education to children. Results from our second randomized controlled trial showed that pain neuroscience education combined with standard care (i.e. hypnotherapy) did not result in better clinical outcomes when compared to standard care alone. Although, in both intervention groups, significantly less parental pain catastrophizing, functional disability, pain related fear and local pressure pain sensitivity were detected at short-term follow-up (3 weeks).

Part three of this thesis includes our efforts to develop a pain knowledge questionnaire for children. The first study, investigating the clinimetric properties of our self-developed questionnaire, showed that the questionnaire was not reliable. Results of our second study, including one-on-one cognitive interviews with seventeen children, questions the relevance of our self-developed pain knowledge questionnaire. The questionnaire should be adapted to a more convenient tool, assessing the child’s broad concept of pain instead of specific and difficult pain concepts.

CURRICULUM VITAE

Roselien Pas (Born 15 January 1992) obtained her Master of Science degree in Rehabilitation Sciences and Physiotherapy in 2015 at The Vrije Universiteit Brussel. In October 2015, she started her PhD (collaboration between Vrije Universiteit Brussel and University of Antwerp), financed by an external VUB chair; The Berekuyl Academy (The Netherlands). Roselien has authored 11 SCI-indexed full-text papers – 3 of which she published as first author. In addition she co-authored 5 submitted full-text papers – 3 of which she submitted as first author. During the past four years she guided 44 students in the performance of their master thesis. In September 2018 she had the opportunity to develop her pain-related research skills in pediatrics during a 2-month research stay at the University of Sydney, Australia. Additionally, Roselien is a member of the international research group 'Pain in Motion'.