Cerebral palsy research news

Monday 18 April 2022

Cerebral Palsy Alliance is delighted to bring you this free weekly bulletin of the latest published research into cerebral palsy. Our organisation is committed to supporting cerebral palsy research worldwide - through information, education, collaboration and funding. Find out more at cerebralpalsy.org.au/our-research

Professor Nadia Badawi AM
CP Alliance Chair of Cerebral Palsy Research

Subscribe to CP Research News

Interventions and Management

1. Can Over-containment Prevent Recurrence in Children With Cerebral Palsy and Hip Dysplasia Undergoing Hip Reconstruction?
Allyson M Zakrzewski, Austin J Bryant, James J McCarthy

J Pediatr Orthop. 2022 Apr 15. doi: 10.1097/BPO.0000000000002160. Online ahead of print.

Introduction: Hip reconstruction is often necessary in children with cerebral palsy (CP) but is associated with high failure rates. Over-containment deeply seats the hip within the acetabulum at the time surgical reconstruction. The goal of this study is to evaluate the effect of over-containment on radiographic outcomes and failure rates in children with CP undergoing hip reconstruction. Methods: This study is a retrospective chart review of children with CP that underwent hip reconstruction between 2010 and 2019 with at least 2 years of radiographic follow-up. Migration percentage (MP), acetabular index (AI), and neck shaft angle (NSA) were recorded preoperatively, postoperatively and throughout follow-up. Failures were defined as a MP at latest follow-up ≥30% or need for revision hip reconstruction. Hips were divided into groups based on postoperative MP-group 1 (over-containment group) had a MP≤0% and group 2 had an MP>0%. Radiographic parameters and failure rates were compared across Gross Motor Functional Classification Score (GMFCS) level, age at the time of surgery, and degree of preoperative subluxation. Results: A cohort of 108 patients (197 hips) with an average age of 7.3±3.2 years met inclusion criteria with an average follow-up of 49.6 months (range: 24 to 118 mo). There were 147 hips in group 1 and 50 hips in group 2. At latest follow-up, group 1 demonstrated lower MP, AI, and NSA in comparison to group 2. The overall failure rate in our cohort was 8.1% (16 hips). Failure rates trended lowest in hips that were over-contained (6.1% v. 14.0%) although not statistically significant. Over-containment resulted in significantly lower failure rates in GMFCS IV/V hips, children under age 6 at the time of surgery and those with a higher degree of preoperative hip displacement (MP>50%). Conclusions: Over-containment at the time of hip reconstruction can positively affect radiographic outcomes and failure rates in children with CP. Over-containment should be considered in hips at high risk of failure, especially non ambulatory children with significant hip subluxation at an early age.

PMID: 35420583

2. Early Breakage of All Proximal Locking Compression Screws under Non-weight-bearing Conditions after Derotational Femoral Osteotomy in a Child with Cerebral Palsy: A Case Report
Yaichiro Okuzu, Masako Tsukanaka, Yutaka Kuroda, Koji Goto, Tohru Futami, Shuichi Matsuda

Case Reports J Orthop Case Rep. 2021 Dec;11(12):1-4. doi: 10.13107/jocr.2021.v11.i12.2540.

Introduction: The locking compression plate (LCP) system for pediatric hips has improved fixation and angular stability. Herein, we report a rare case in which all proximal locking compression screws were broken before weight bearing in the

early post-operative period after derotational femoral osteotomy in a child with spastic cerebral palsy (CP). Case report: Derotational femoral osteotomy was performed using a LCP system for a 9-year-old boy with spastic CP to correct excessive femoral anteversion, causing unstable toe-in gait. Proximal screw breakage was found 2 weeks postoperatively during hip-spica casting under non-weight-bearing conditions. Implant breakage was considered a result of the excessive spasticity of the lower limb. At the time of reoperation, shortening and varus correction of the femur and muscle tendon release were performed in addition to the refixation of the osteotomy. Intensive pain control was ensured, and anti-spastic medication and botulinum toxin injection were administered. Complete bone healing was successfully achieved 6 months after the second surgery. Conclusion: Surgeons need to consider the spasticity of the lower limb as a cause of implant failure. Management to reduce spasticity and mechanical load to the implant is important for preventing implant failures in patients with spastic CP.

PMID: 35415138

3. Comment on "The Split Transfer of Tibialis Anterior Tendon to Peroneus Tertius Tendon for Equinovarus Foot in Children with Cerebral Palsy"
Hüseyin Sina Coşkun, İsmail Büyükceran, Yılmaz Tomak

Acta Orthop Traumatol Turc. 2022 Mar;56(2):157. doi: 10.5152/j.aott.2022.21326.

No abstract available

PMID: 35416170

4. The effect of an ankle-foot orthosis on tibiofemoral motion during step-up and step-down in healthy adults
Jamie B Hall, Trent M Guess

Prosthet Orthot Int. 2022 Apr 1;46(2):148-154. doi: 10.1097/PXR.0000000000000073.

Background: Solid ankle-foot orthoses (SAFOs) are frequently prescribed in conditions such as cerebral palsy and stroke. Although gait is improved in the short term, long-term effects of limiting ankle and foot motion during functional activities on joints such as the knee have not been investigated. Our study purpose was to compare tibiofemoral (TF) motion in shoe and SAFO conditions in healthy adults to inform future studies in clinical populations. Methods: A custom-made device using electromagnetic sensors was used to collect three-dimensional TF rotation data while 29 healthy adult participants (female participants = 19, age = 24.4 ± 4.5 years) performed step-up/step-down in shoe and SAFO conditions. Results: In the SAFO condition during step-up, extent of motion was greater in frontal and transverse planes and less in the sagittal plane. Discrete values at 0%-10% of the cycle in sagittal, 50%-100% in frontal, and 40%-100% in transverse planes were statistically different, producing more abduction and external rotation. In the SAFO condition during step-down, extent of motion was significantly greater in the frontal and transverse planes. Discrete values were statistically different in 40%-60% of the cycle in sagittal, 0%-30% and 70%-90% in frontal, and 0%-30% and 70%-90% in transverse planes, producing more abduction and external rotation in the first half of the cycle and more adduction and internal rotation in the second half of the cycle. Conclusions: An SAFO affects triplanar TF kinematics in healthy adults during step-up/step-down. Future investigations into ankle-foot orthosis prescription and TF motion in clinical populations will facilitate optimal ankle-foot orthosis prescription and knee function in the long term.

PMID: 35412522

5. The SIT-PT Trial Protocol: a Dose-Matched Randomized Clinical Trial Comparing 2 Physical Therapist Interventions for Infants and Toddlers with Cerebral Palsy
Stacey C Dusing, Regina T Harbourne, Lin-Ya Hsu, Natalie A Koziol, Kari Kretch, Barbara Sargent, Sandra Jensen-Willett, Sarah Westcott McCoy, Douglas L Vanderbilt

Phys Ther. 2022 Apr 11;pzac039. doi: 10.1093/ptj/pzac039. Online ahead of print.

Objective: Although early intervention for infants at risk for cerebral palsy is routinely recommended, the content of intervention is poorly described, varies widely, and has mixed supporting evidence. The purpose of this study is to compare efficacy of 2 interventions grounded in differing domains of the International Classification of Functioning, Disability and Health on developmental outcomes of infants with or at high risk of cerebral palsy. Methods: Infants who meet inclusion criteria will be randomized into either Sitting Together and Reaching To Play (START-Play) or Movement, Orientation, Repetition, Exercise Physical Therapy (MORE-PT) groups. Both groups will receive intervention twice weekly for 3 months and follow-up at 3-, 6-, 9-, and 12-months from baseline. The primary objectives compare changes over time and between groups in sitting, gross motor and cognitive development. The setting is the infant's home unless the caregiver requests otherwise. One hundred and fifty infants between 8 and 24 months of age will be enrolled in 3 geographically, racially, and ethnically diverse sites: Los Angeles, California; Omaha, Nebraska; and Seattle, Washington. Enrolled infants will demonstrate motor delays, emerging sitting skills, and signs of neurologic impairment. START-Play targets activities including sitting, reaching, and motor-based problem solving to improve global development. In contrast, MORE-PT focuses on strengthening and musculoskeletal alignment while encouraging repeated movement practice. Outcome measures include the Gross Motor Function Measure, Bayley Scales of Infant Development-IV, Assessment of Problem Solving in Play, and a Parent Child Interaction assessment. Enrolled children will maintain usual intervention services due to ethical concerns with intervention withdrawal.

PMID: 35421222

6. Bronchiectasis - Exercise as Therapy (BREATH): rationale and study protocol for a multi-center randomized controlled trial

Taryn Jones, Kerry-Ann F O'Grady, Vikas Goyal, Ian B Masters, Gabrielle McCallum, Christopher Drovandi, Thomas Lung, Emmah Baque, Denise S K Brookes, Caroline O Terranova, Anne B Chang, Stewart G Trost

Trials. 2022 Apr 11;23(1):292. doi: 10.1186/s13063-022-06256-2.

Background: Globally, bronchiectasis (BE) unrelated to cystic fibrosis (CF) is recognized as a major cause of respiratory morbidity, mortality, and healthcare utilization. Children with BE regularly experience exacerbations of their condition resulting in frequent hospitalizations and decreased health-related quality of life (HR-QoL). Guidelines for the treatment and management of BE call for regular exercise as a means of improving aerobic fitness and HR-QoL. Moreover, research in adults with BE has shown that exercise can reduce the frequency of exacerbations, a potent predictor of future lung function decline and respiratory morbidity. Yet, to date, the health benefits resulting from therapeutic exercise have not been investigated in children with BE. The BREATH, Bronchiectasis - Exercise as Therapy, trial will test the efficacy of a novel 8-week, play-based therapeutic exercise program to reduce the frequency of acute exacerbations over 12 months in children with BE (aged ≥ 4 and < 13 years). Secondary aims are to determine the cost-effectiveness of the intervention and assess the program's impact on aerobic fitness, fundamental movement skill (FMS) proficiency, habitual physical activity, HR-QoL, and lung function. Methods: This multi-center, observer-blinded, parallel-group (1:1 allocation), randomized controlled trial (RCT) will be conducted at three sites. One hundred and seventy-four children ≥ 4 and < 13 years of age with BE will be randomized to a developmentally appropriate, play-based therapeutic exercise program (eight, 60-min weekly sessions, supplemented by a home-based program) or usual care. After completing the baseline assessments, the number of exacerbations and secondary outcomes will be assessed immediately post-intervention, after 6 months of follow-up, and after 12 months of follow-up. Monthly, parental contact and medical review will document acute respiratory exacerbations and parameters for cost-effectiveness outcomes. Discussion: The BREATH trial is the first fully powered RCT to test the effects of a therapeutic exercise on exacerbation frequency, fitness, movement competence, and HR-QoL in children with bronchiectasis. By implementing a developmentally appropriate, play-based exercise program tailored to the individual needs of children with bronchiectasis, the results have the potential for a major paradigm shift in the way in which therapeutic exercise is prescribed and implemented in children with chronic respiratory conditions. The exercise program can be readily translated. It does not require expensive equipment and can be delivered in a variety of settings, including the participant's home. The program has strong potential for translation to other pediatric patient groups with similar needs for exercise therapy, including those with obesity, childhood cancers, and neurological conditions such as cerebral palsy.

PMID: 35410363

7. Eye Movement Disorders in Movement Disorders

Panagiotis Kassavetis, Diego Kaski, Tim Anderson, Mark Hallett

Review Mov Disord Clin Pract. 2022 Feb 16;9(3):284-295. doi: 10.1002/mdc3.13413. eCollection 2022 Apr.

Oculomotor assessment is an essential element of the neurological clinical examination and is particularly important when evaluating patients with movements disorders. Most of the brain is involved in oculomotor control, and thus many neurological conditions present with oculomotor abnormalities. Each of the different classes of eye movements and their features can provide important information that can facilitate differential diagnosis. This educational review presents a clinical approach to eye movement abnormalities that are commonly seen in parkinsonism, ataxia, dystonia, myoclonus, tremor, and chorea. In parkinsonism, subtle signs such as prominent square wave jerks, impaired vertical optokinetic nystagmus, and/or the "round the houses" sign suggest early progressive supranuclear gaze palsy before vertical gaze is restricted. In ataxia, nystagmus is common, but other findings such as oculomotor apraxia, supranuclear gaze palsy, impaired fixation, or saccadic pursuit can contribute to diagnoses such as ataxia with oculomotor apraxia, Niemann-Pick type C, or ataxia telangiectasia. Opsoclonus myoclonus and oculopalatal myoclonus present with characteristic phenomenology and are usually easy to identify. The oculomotor exam is usually unremarkable in isolated dystonia, but oculogyric crisis is a medical emergency and should be recognized and treated in a timely manner. Gaze impersistence in a patient with chorea suggests Huntington's disease, but in a patient with dystonia or tremor, Wilson's disease is more likely. Finally, functional eye movements can reinforce the clinical impression of a functional movement disorder.

PMID: 35402641

8. On Error-Related Potentials During Sensorimotor-Based Brain-Computer Interface: Explorations With a Pseudo-Online Brain-Controlled Speller
Michele Bevilacqua, Serafeim Perdikis, Jose Del R Millan

IEEE Open J Eng Med Biol. 2020 Feb 14;1:17-22. doi: 10.1109/OJEMB.2019.2962879. eCollection 2020.

Objective: Brain-computer interface (BCI) spelling is a promising communication solution for people in paralysis. Currently, BCIs suffer from imperfect decoding accuracy which calls for methods to handle spelling mistakes. Detecting error-related potentials (ErrPs) has been early identified as a potential remedy. Nevertheless, few works have studied the elicitation of ErrPs during engagement with other BCI tasks, especially when BCI feedback is provided continuously. Methods: Here, we test the possibility of correcting errors during pseudo-online Motor Imagery (MI) BCI spelling through ErrPs, and investigate whether BCI feedback hinders their generation. Ten subjects performed a series of MI spelling tasks with and without observing BCI feedback. Results: The average pseudo-online ErrP detection accuracy was found to be significantly above the chance level in both conditions and did not significantly differ between the two (74% with, and 78% without feedback). Conclusions: Our results support the possibility to detect ErrPs during MI-BCI spelling and suggest the absence of any BCI feedback-related interference.

PMID: 35402943

9. Ankle Exoskeleton Assistance Increases Six-Minute Walk Test Performance in Cerebral Palsy
Benjamin Conner, Greg Orekhov, Zachary Lerner

IEEE Open J Eng Med Biol. 2021 Dec 15;2:320-323. doi: 10.1109/OJEMB.2021.3135826. eCollection 2021.

Objective: To determine the effects of providing battery-powered ankle dorsiflexor and plantar flexor exoskeleton assistance on six-minute walk test performance and efficiency in children and young adults with cerebral palsy by comparing distance walked under exoskeleton assisted (Assisted) and no device (Shod) walking conditions, and explore the acclimation rate to maximal walking with ankle exoskeleton assistance. Results: Six-minute walk test performance significantly improved under the final Assisted condition test compared to the Shod condition (42 ± 27 m, $p = 0.02$), surpassing the minimum clinically important difference range for children and young adults with CP. There was no difference in walking efficiency (-0.06 ± 0.1, $p = 0.3$). Participants had an average acclimation rate of 19.6 m per session. Conclusions: Powered ankle assistance can significantly improve six-minute walk test performance in individuals with mild-to-moderate gait impairment from CP, supporting the use of this intervention to improve functional mobility and walking capacity in this patient population.

PMID: 35402970

10. Neonatal Neuroimaging in Neonatal Intensive Care Graduates Who Subsequently Develop Cerebral Palsy
Malcolm R Battin, Sîan A Williams, Anna Mackey, Woroud Alzaher, Alexandra Sorhage, N Susan Stott

J Clin Med. 2022 Mar 28;11(7):1866. doi: 10.3390/jcm11071866.

Cerebral palsy is a common cause of physical disability. The New Zealand Cerebral Palsy Register (NZCPR) was established in 2015 and reports national data. Internationally, an early CP diagnosis has been a focus, with imaging and clinical tools used to enable early accurate detection. Accordingly, guidelines are being developed for New Zealand, including a specific pathway for high-risk neonatal intensive care (NICU) graduates, reflecting the high rate of CP in this group. To inform this work, we reviewed imaging data from a retrospective NICU cohort identified from the NZCPR. In these 140 individuals with CP and a confirmed NICU admission during 2000-2019 inclusive, imaging frequency, modality, and rate of abnormality was determined. Overall, 114 (81.4%) had imaging performed in the NICU, but the frequency and modality used varied by gestational subgroup. For infants born at less than 32 weeks gestation, 53/55 had routine imaging with ultrasound, and IVH was graded as none or mild (grade 1-2) in 35 or severe (grade 3-4) in 18 infants. For the 34 infants born between 32-36 weeks gestation, only 13/19 imaged in the NICU were reported as abnormal. For 51 term-born infants, 41/42 imaged in the NICU with MRI had abnormal results.

PMID: 35407475

11. Use of health services and unmet needs among adults with cerebral palsy in Ireland
Manjula Manikandan, Claire Casey, Anne Doyle, Claire Kerr, Michael Walsh, Aisling Walsh, Jennifer M Ryan

Dev Med Child Neurol. 2022 Apr 8. doi: 10.1111/dmcn.15233. Online ahead of print.

Aim: To describe use of health services, unmet needs relating to health services, and identify factors associated with service use among adults with cerebral palsy (CP) in Ireland. Method: Data relating to demographics, secondary diagnoses, current use of health services and assistive devices, and unmet needs for both were obtained on adults with CP from the National Physical and Sensory Disability Database. Logistic regression was used to identify factors associated with service use. Results: A total of 1268 adults with CP were included in this study. Over half were male (56%) and 78% lived with parents, siblings, or other family relatives. Physiotherapy, occupational therapy, and orthotics/prosthetic services were the most commonly used services, used by 57%, 48%, and 35% of the sample respectively. Unmet needs were highest for physiotherapy (23%) and occupational therapy services (13%). Age, sex, living arrangements, and wheelchair use were frequently associated with current service use. Interpretation: Adults with CP used a wide range of health services and unmet needs were reported for all services. The findings highlight a need for planning and development of services to meet their needs, regardless of their age, mobility level, or living arrangements.

PMID: 35396701

12. Placental abruption associated with cerebral palsy
Shunji Suzuki

J Nippon Med Sch. 2022 Apr 11. doi: 10.1272/jnms.JNMS.2022_89-312. Online ahead of print.

Placental abruption is separation of the placenta from its normal implantation site of the uterine body before delivery of the fetus during pregnancy or labor. It is a major cause of cerebral palsy registered in the Japan Obstetric Compensation System for Cerebral Palsy (JOCSC). It is classified into revealed and concealed hemorrhage types by the presence or absence of external bleeding, and the latter is associated with a poorer prognosis for mothers and infants. If the survival of the fetus is confirmed in cases of placental abruption, the fetus should usually be delivered promptly. There is no evidence-based preventive methods for placental abruption. Therefore, an awareness of the early symptoms of placental abruption among pregnant Japanese women is important.

PMID: 35400718

13. Early Motor Repertoire of Very Preterm Infants and Relationships with 2-Year Neurodevelopment
Amanda K-L Kwong, Roslyn N Boyd, Mark D Chatfield, Robert S Ware, Paul B Colditz, Joanne M George

J Clin Med. 2022 Mar 25;11(7):1833. doi: 10.3390/jcm11071833.

The Motor Optimality Score, revised (MOS-R) is an extension of the Prechtl General Movements Assessment. This study aims to determine the relationship between MOS-R and 2-year neurodevelopmental outcomes in a cohort of 169 infants born very preterm (<31 weeks' gestational age), and to examine the predictive validity of the MOS-R at 3-4 months' corrected age (CA) above perinatal variables associated with poor outcomes, including Prechtl fidgety movements. Development at 2 years' CA was assessed using Bayley Scales of Infant and Toddler Development, Third edition (Bayley-III) (motor/cognitive impairment: Bayley-III ≤ 85) and Neurological, Sensory, Motor, Developmental Assessment (NSMDA) (neurosensory motor impairment: NSMDA ≥ 12). Cerebral palsy (CP) was classified at 2 years as definite or clinical. The MOS-R was related to 2-year outcomes: Bayley-III motor (BMOS-R = 1.24 95% confidence interval (0.78, 1.70)), cognitive (BMOS-R = 0.91 (0.48, 1.35)), NSMDA scores (BMOS-R = -0.34 (-0.42, -0.25)), definite CP (odds ratio [OR] 0.67 (0.53, 0.86)), clinical CP (OR 0.74 (0.66, 0.83)) for each 1-point increase in MOS-R. MOS-R ≤ 23 predicted motor (sensitivity 78% (60-91%); specificity 63% (54 -72%)) and neurosensory motor impairment (sensitivity 86% (64-97%); specificity 59% (51-68%)). The MOS-R is strongly related to CP and motor and cognitive delay at 2 years and is a good predictor of motor and neurosensory motor impairment.

PMID: 35407440

14. A systematic review on extracorporeal shock wave therapy and botulinum toxin for spasticity treatment: a comparison on efficacy
Emanuela E Mihai, Marius N Popescu, Alina N Iliescu, Mihai Berteanu

Eur J Phys Rehabil Med. 2022 Apr 12. doi: 10.23736/S1973-9087.22.07136-2. Online ahead of print.

Introduction: The complexity of spasticity requires a continuous effort in terms of more adapted treatments for patients and accurate management. Through this systematic review, we aimed to evaluate and compare the effectiveness of Extracorporeal Shock Wave Therapy (ESWT) with Botulinum Toxin Type A (BoNT-A) on reducing spasticity both in children and adults. Evidence acquisition: An electronic search of PubMed/ MEDLINE, Scopus, Ovid MEDLINE(R), and search engine of Google Scholar was performed. Publications ranging from January 2010 to January 2021, published in the English language and available as full-texts were eligible for inclusion and they were searched without any country restriction. The study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. Evidence synthesis: A total of five studies were included in the present systematic review. Screening of the references, data extraction, and risk of bias assessment were performed by two independent authors. The methodological quality and risk of bias were conducted using the Physiotherapy Evidence Database (PEDro) scale. The primary outcome was spasticity grade assessed by the Modified Ashworth Scale (MAS) and/or Modified Tardieu Scale (MTS). Additional outcomes were active range of motion (AROM), passive range of motion (PROM), upper extremity Fugl-Meyer Assessment (UE-FMA), pain intensity assessed through Visual Analogue Scale (VAS), spasm frequency scale (SFS), sonographic parameters, between-group comparison, and treatment response rate. Conclusions: A beneficial effect on spasticity was found for both treatments: evidence showed that ESWT and BoNT-A can ameliorate spasticity considering parameters such as MAS, MTS, AROM, PROM, UE-FMA, VAS and SFS in post-stroke, multiple sclerosis, and cerebral palsy patients. Further research is required to strengthen the evidence, and more suitable study protocols are highly needed.

PMID: 35412036

15. Effectiveness of different extrinsic feedback forms on motor learning in children with cerebral palsy: a systematic review
Jorine Schoenmaker, Han Houdijk, Bert Steenbergen, Heleen A Reinders-Messelink, Marina M Schoemaker

Disabil Rehabil. 2022 Apr 13;1-14. doi: 10.1080/09638288.2022.2060333. Online ahead of print.

Purpose: Motor learning interventions for children with cerebral palsy (CP) that elicit relatively permanent and transferable

improvements in motor skill capability are essential. Knowledge is needed about the augmented feedback forms that most effectively promote this. This review aims to collect and analyze the current evidence for the effectiveness of different forms of feedback for motor learning in children with CP to improve motor task performance. Methods: PubMed, PsycInfo, and Cochrane Library were searched to identify relevant studies. Studies were included if (1) they were conducted in children with CP or compared children with CP to TD children and (2) a form of augmented feedback related to a motor task was administered. Results: Initially, 401 records were identified for screening. Ultimately, 12 articles were included in the review. The evidence thus far supports the expectancy that children with CP generally benefit from feedback provided during or after performing a movement task. Conclusion: Due to the heterogeneity of existing studies, it is difficult to draw firm conclusions regarding relative effectiveness of feedback forms. This review showed that more high-quality research is warranted on the effectiveness of specific feedback forms on motor learning in children with CP. Implications for Rehabilitation: Children with CP benefit from several forms of knowledge of performance or knowledge of results feedback provided during or after performing a movement task. Feedback should not be provided with every performed trial. Feedback frequency can best be reduced by letting children determine after which trials they want feedback. Learning curves under similar feedback conditions varied largely between children, warranting tailor-made forms of feedback to be applied during motor learning and rehabilitation.

PMID: 35416108

16. Psychometric Evaluation of the Polish Version of the Caregiver Priorities and Child Health Index of Life with Disabilities (CPCHILD)

Paulina Nowak, Unni Narayanan, Małgorzata Szmurło, Anna Krzyżańska, Maciej Głowacki, Ewa Misterska, Marek Jóźwiak

Neuropsychiatr Dis Treat. 2022 Apr 7;18:773-785. doi: 10.2147/NDT.S329070. eCollection 2022.

Purpose: The assessment of the quality of life is an important element of the clinical examination of the patient. The aim of this study was translation and cross-cultural adaptation of the "Caregiver Priorities and Child Health Index of Life with Disabilities" (CPCHILD) questionnaire into Polish language, and testing of reliability and validity of the CPCHILD-PL for children with cerebral palsy (CP). Material and methods: A Polish version of CPCHILD was created according to internationally accepted guidelines. Parents (n=77) of 51 boys/26 girls between 3 and 17 years with CP with Gross Motor Function Classification System I-V (GMFCS I-V) participated. To assess the reliability each domain and the total measure was tested for internal consistency and test-retest reliability. Convergent validity was evaluated by correlating the CPCHILD-PL with the CHAQ (Childhood Health Assessment Questionnaire) questionnaire. Results: Test-retest reliability assessed by Spearman correlation coefficient for the final result of CPCHILD-PL and for most of domains were above 0.90. The values of Cronbach's-α coefficient (measuring internal consistency) were high for all domains (except for domain 5: Health) and the entire CPCHILD-PL, with the range 0.88-0.96. The comparison between CPCHILD-PL and the Disability Index (DI) of the CHAQ showed a negative correlation. The higher the DI, the lower the CPCHILD result. The Spearman's rank coefficient was -0.75. Conclusion: The Polish version for the CPCHILD for children with CP seems to be reliable and valid tool for assessing health-related quality of life from the caregiver perspective. It can be used in research and clinical practice for evaluation and comparison of health-related quality of life in children with CP in different countries.

PMID: 35418755