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16TH EUROPEAN BOBATH TUTORS ASSOCIATION – EBTA CONGRESS

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ÖZET BİLDİRİ KİTAPÇIĞI

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İstinye Üniversitesi Kültür Merkezi, İstanbul


EBTA CONGRESS ISTANBUL 2024
19-20-21 September
European Bobath Tutors Association
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KONGRE BAŞKANI

Uzm. Fzt. Christine Barber

Prof. Dr. Mintaze Kerem Günel

KONGRE SEKRETERİ

Dr. Fzt. Cemil Özal

DÜZENLEME KURULU

SIRA	ÜNVANI	ADI-SOYADI	KURUM/KURULUŞ	BÖLÜM
1	Prof. Dr.	Mintaze Kerem Günel	Hacettepe Üniversitesi	Fizik Tedavi ve Rehabilitasyon Fakültesi
2	Uzm. Fzt.	Feride Bilir	Bobath Terapistleri Derneği	-
3	Dr. Fzt.	Cemil Özal	Hacettepe Üniversitesi	Fizik Tedavi ve Rehabilitasyon Fakültesi
4	Prof. Dr.	Christine Van den Broeck	Ghent Üniversitesi (Belçika)	Rehabilitasyon Bilimleri ve Fizyoterapi
5	Dr. Öğr. Üyesi	Kübra Seyhan Bıyık	Hacettepe Üniversitesi	Fizik Tedavi ve Rehabilitasyon Fakültesi
6	Prof. Dr.	Yasemin Çırak Buran	İstinye Üniversitesi	Fizyoterapi ve Rehabilitasyon
7	Uzm. Fzt.	Fuat Sönmez	Giresun Prof. Dr. İlhan Özdemir Devlet Hastanesi	Fizik Tedavi ve Rehabilitasyon

BİLİMSEL KURUL

SIRA NO	ÜNVANI	ADI SOYADI	KURUM/KURULUŞ	BÖLÜM
1	Prof. Dr.	Margaret Mayston	University College London (İngiltere)	Biyobilimler Bölümü
2	PT, MSc	Josse De Cat	Leuven Katolik Üniversitesi (emekli) (Belçika)	Fizyoterapi ve Rehabilitasyon
3	Prof. Dr.	Christine Van den Broeck	Ghent Üniversitesi (Belçika)	Rehabilitasyon Bilimleri ve Fizyoterapi
4	Prof. Dr.	Mintaze Kerem Günel	Hacettepe Üniversitesi (Türkiye)	Fizik Tedavi ve Rehabilitasyon Fakültesi
5	Prof. Dr.	Ekin Akalan	İstanbul Kültür Üniversitesi (Türkiye)	Fizyoterapi ve Rehabilitasyon
6	Prof. Dr.	Gönül Gün Acar	Marmara Üniversitesi (Türkiye)	Fizyoterapi ve Rehabilitasyon

BİLİMSEL PROGRAM

16TH EUROPEAN BOBATH TUTORS ASSOCIATION – EBTA CONGRESS ISTANBUL 2024			
19 September 2024			
Time	**Hall A Berta Bobath**	**Hall B Karel Bobath**	**Hall C Jennifer Bryce**
08:30-09:00	Opening Addresses Mintaze Kerem Günel (Turkish NTO-President / (BTA-Türkiye President) Christine Barber (EBTA-President) Yasemin Buran Çırak (Dean – Faculty of Health Sciences, ISU)		
09:30-10:30	Keynote Speaker 1 Bobath Clinical Reasoning Framework (BCRF): Same or different? Speaker: Margaret Mayston Chairs: Christine Barber, Mintaze Kerem Günel		
10:30 – 11:00	**Coffee Break**		

11:00 – 12:00	Keynote Speaker 2 Our experience in the treatment of the upper limb in children with cerebral palsy Speaker: Guy Molenaers Chairs: Kubilay Beng, Nikolaos Yfantis		
12:00 – 13:00	Keynote Speaker 3 Motor assessment during the first year of life Speaker: Christine Van den Broeck Chairs: Liliana Klimont-Fjøsne, Gönül Acar		
13:00 – 14:00	**Lunch**		
14:00 – 15:30	Instructional Course 1: Adult Cerebral Palsy Senior Tutors: Christine Barber Rajkumar Rajan	Instructional Course 2: Problems of swallowing Senior Tutor: Marleen D'hondt	Instructional Course 3 Intensive Therapy of the lower limbs and the trunk in children with bilateral cerebral palsy: how to set up a qualitative functional training – CIRCUS CAMP Senior Tutors: Christine Vandeperre Ann Govaere
15:30– 16:00	**Coffee Break**		
16:00 – 17:00	Oral Presentations Chairs: Leonor Antoinetti, Bilge Nur Yardımcı-Lokmanoğlu Neuromotor Effect of Tactile Kinesthetic Massage on Premature Babies in the Neonatal Intensive Care Unit İlknur Ezgi Doğan, Ankara/Türkiye Early Intervention Program Applied According to The Bobath Concept On Risky Premature Babies And Investigation Effects On Long-Term Neurodevelopmental Parameters Çiğdem Ünver, İstanbul/Türkiye Impact of Physiotherapy on Early Preterm Infants in the Neonatal Intensive Care Unit Using the International Classification of Function Framework Deniz Çakır, Samsun/Türkiye Catching the High Risk of Cerebral Palsy – Evidence-Based Practice Example Fuat Sönmez, Giresun/Türkiye Long-term Follow-up results of Infants with Prader-Willi Syndrome from the First Months of Life: A Case Series Bilge Nur Yardımcı-Lokmanoğlu, Ankara/Türkiye	Oral Presentations Chairs: Leonor Antoinetti, Bilge Nur Yardımcı-Lokmanoğlu Neuromotor Effect of Tactile Kinesthetic Massage on Premature Babies in the Neonatal Intensive Care Unit İlknur Ezgi Doğan, Ankara/Türkiye Early Intervention Program Applied According to The Bobath Concept On Risky Premature Babies And Investigation Effects On Long-Term Neurodevelopmental Parameters Çiğdem Ünver, İstanbul/Türkiye Impact of Physiotherapy on Early Preterm Infants in the Neonatal Intensive Care Unit Using the International Classification of Function Framework Deniz Çakır, Samsun/Türkiye Catching the High Risk of Cerebral Palsy – Evidence-Based Practice Example Fuat Sönmez, Giresun/Türkiye Long-term Follow-up results of Infants with Prader-Willi Syndrome from the First Months of Life: A Case Series Bilge Nur Yardımcı-Lokmanoğlu, Ankara/Türkiye	Oral Presentations Chairs: Robert Giezek, Busra Kepenek-Varol Turkish Adaptation and Psychometric Properties of the Standardized Infant NeuroDevelopmental Assessment Neurological Scale in Turkish At-Risk Infants Nilay Çömük Balcı, Samsun/Türkiye Examining the Effects of Home-Based Trunk Control Exercises on Balance and Postural Control in Children with Spastic Cerebral Palsy İrem Nur Şener, İstanbul/Türkiye Long-Term Results of Neurodevelopmental Treatment Approach in Cerebral Palsy Melike Özipek, İstanbul/Türkiye The Turkish Adaptation of Gross Motor Function Classification System Family Report in Children with Cerebral Palsy, the Determination of its Reliability, and the Investigation of the Consistency of the Family and the Physiotherapist in Determining the Gross Motor Function Level Esra İncesu Oral, Ankara/Türkiye The effects of treadmill training on postural control and balance in children with spastic diplegic cerebral palsy Cemil Özal, Ankara/Türkiye
17:00 – 18:30	Instructional Course 3 (re-presentation) Intensive Therapy of the lower limbs and the trunk in children with bilateral cerebral palsy: how to set up a qualitative functional training – CIRCUS CAMP Senior Tutors: Christine Vandeperre Ann Govaere	Instructional Course 4 Respiration for children with cerebral palsy Instructor: Yasemin Buran Çırak	Instructional Course 5 Clinical reasoning in cerebral palsy –training innovations supporting clinical practice Senior Tutor: Sarah Foley

20 September 2024			
08:00 – 09:00	Keynote Speaker 4 Participation meaning to Bobath therapists: Bridge to practice Speaker: Mintaze Kerem Günel Chairs: Margaret Mayston, Ayşe Numanoğlu Akbaş		
09:00 – 10:30	Instructional Course 6 Optimizing early visual processing plasticity Senior Tutor: Christa Scholtz	Instructional Course 7 “Smart Goals according to Bobath clinical reasoning with parents. “Tandem work”. Senior Tutor: Leonor Antonietti	Instructional Course 5 (re-presentation) “Clinical reasoning in cerebral palsy –training innovations supporting clinical practice”. Senior Tutor: Sarah Foley
10:30 – 11:00	**Coffee Break**		
11:00 – 12:30	Instructional Course 6 (re-presentation) Optimizing early visual processing plasticity Senior Tutor: Christa Scholtz	Instructional Course 8 Holistic assessment and approach in children with cerebral palsy swallowing disorders Instructors: Numan Demir Tutku Soyer	EBTA General Meeting
12:30 – 13:30	**Lunch**		
13:30 – 14:30	Keynote speaker 5 Cerebral Palsy: Genetic and New Horizons diagnosis and treatment Speaker: Ceren Günbey Chairs: Nilüfer Eldeş Hacıfazlıoğlu, Canan Çağ		EBTA General Meeting
14:30 – 15:30	Oral presentations Chairs: Ann Govaere, Özge Çankaya The Relationship between parental self-efficacy and family support for children with cerebral palsy Özge Çankaya, Ankara/Türkiye The experiences and challenges faced by adolescents who have a sibling with cerebral palsy Gulce Kallem Seyyar, Kütahya/Türkiye Investigation of participation and related factors in children with spastic cerebral palsy Merve Tunçdemir, Bitlis/Türkiye Intra- and inter-rater reliability and validity of tele-assessment of Selective Control of Upper Extremity Scale in children with hemiplegic cerebral palsy Sefa Unes, Bingöl/Türkiye Improving Feeding Skills and Transition to Breastfeeding in Early Preterm Infants: A Randomized Controlled Trial of Oromotor Intervention Deniz Çakır, Samsun/Türkiye	Oral presentations Chairs: Yasemin Buran Çırak, Christine Vandeperre Spatiotemporal gait parameters in children or adolescents with unilateral cerebral palsy compared to typically developing children: a systematic review and meta-analysis Öznur Fidan, Kütahya/Türkiye Predicting Postoperative Ambulation Following Selective Dorsal Rhizotomy Based on Preoperative Gross Motor Function Score Gökçen Erol, İstanbul/Türkiye Evaluation of Long-Term Effects of Selective Dorsal Rhizotomy Surgery on Function and Mobility in Children with Cerebral Palsy Using the International Classification of Functioning, Disability, and Health (ICF) Model Fatih Erol, İstanbul/Türkiye Investigation of the Instantaneous Effect of the Adaptive Mobility Device Applied to a Child with Cerebral Palsy on Walking- A Case Study Melek Vatansever, Bursa/Türkiye	EBTA General Meeting
15:30 – 16:00	**Coffee Break**		

16:00 – 17:00	Keynote speaker 6 Clinical reflections on objective functional parameters children with spastic cerebral palsy: 3D gait analysis Speaker: Ekin Akalan Chairs: Fuat Bilgili, Hasan Bingöl		EBTA General Meeting
21 September 2024			
08:00 – 09:00	Keynote Speaker 7 Postural control: Knowledge transfer to clinical practice Speaker: Cemil Özal Chairs: Jenny Caroll, Feride Bilir		
09:00 – 10:00	Keynote Speaker 8 What a rehabilitation team member needs to know about the CP spine? Spine problems and CP Speaker: Muharrem Yazıcı Chairs: Josse de Cat, Ekin Akalan		
10:00 – 10:30	**Coffee Break**		
10:30 – 11:30	Keynote Speaker 9 Clinical reasoning as basis for the Bobath concept Speaker: Josse de Cat Chairs: Christine Barber, Cemil Özal		
11:30 – 12:00	END OF CONGRESS Mintaze Kerem Günel (Turkish NTO-President / (BTA-Türkiye-President) Christine Barber (EBTA-President)		

SÖZEL BİLDİRİ LİSTESİ

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Bilge Nur Yardımcı-Lokmanoğlu, Akmer Mutlu

S05. Catching the high risk of cerebral palsy - evidence-based practice example
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S09. Construct Validity and Reliability of the Affordances in the Home Environment for Motor Development-Infant Scale
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S10. Effects of motor impairment and environmental factors on social participation in children with spastic diplegic cerebral palsy
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S11. Turkish adaptation and psychometric properties of the Standardized Infant NeuroDevelopmental Assessment Neurological Scale in Turkish at-risk infants
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S12. Examining the effects of home-based trunk control exercises on balance and postural control in children with spastic cerebral palsy
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S13. Long-term results of neurodevelopmental treatment approach in cerebral palsy
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S14. The Turkish adaptation of Gross Motor Function Classification System Family Report in children with cerebral palsy, the determination of its reliability, and the investigation of the consistency of the family and the physiotherapy st in determining the gross motor function level
Esra İncesu Oral, Muhammed Ayhan Oral, Mintaze Kerem Günel

S15. The effects of treadmill training on postural control and balance in children with spastic diplegic cerebral palsy: A cross-over controlled study
Cemil Özal, Songul Aksoy, Mintaze Kerem Gunel

S16. The relationship between parental self-efficacy and family support for children with special needs
Oğuzhan Akbaşli, Yasemin Ateş Sari, Özge Çankaya, Nezehat Özgül Ünlüer

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Gulce Kallem Seyyar, Hakan Akkan, Bahar Aras

S18. Investigation of the participation and related factors in children with spastic cerebral palsy
Merve Tunçdemir, Sefa Üneş, Cemil Özal, Kübra Seyhan Bıyık, Kıvanç Delioğlu, Mintaze Kerem Günel

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S20. Improving feeding skills and transition to breastfeeding in early preterm infants: a randomized controlled trial of oromotor intervention
Deniz Cakir, Nilay Comuk Balci

S21. Spatiotemporal gait parameters in children or adolescents with unilateral cerebral palsy compared to typically developing children: a systematic review and meta-analysis
Gulce Kallem Seyyar, Oznur Fidan, Bahar Aras, Ertugrul Colak

S22. Predicting postoperative ambulation following selective dorsal rhizotomy based on preoperative gross motor function score
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S23. Evaluation of long-term effects of selective dorsal rhizotomy surgery on function and mobility in children with cerebral palsy using the International Classification Of Functioning, Disability, And Health (ICF) model
Fatih Erol, Gökçen Erol, Neslihan Yildizdağı, M. Memet Özek

S24. Investigation of the instantaneous effect of the adaptive device applied to a child with cerebral palsy on walking- a case study
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POSTER BİLDİRİ LİSTESİ

P01. Learning to drive a wheelchair can be efficient and fun
Lea Šuc, Lovro Jemec, Katja Groleger Sršen

P02. Effect of intervention based on the Contemporary Bobath Concept in children with cerebral palsy
Claudia Alcantara de Torre, Raquel de Paula Carvalho

P03. Assessment of behavioral responses of premature babies in the neonatal intensive care unit
İlknur Ezgi Doğan, Nilay Çömük Balci

P04. A comprehensive assessment of neuromotor development in at-risk infants using the Novel Neonatal Infant Motor Assessment Scale (NIMAS) test battery
Nilay Comuk Balci, Mustafa Ali Akın, Mert Demirsoz

P05. Physical Therapy with Bobath Concept and assisted mobility to improve participation in children with Cerebral Palsy: case series
Soraya Pacheco da Costa, Saturnino Maldonado Bascón, Isabel Rodríguez Costa, Laura García Martín

P06. Investigation of the Relationship Between the Duration of Using the Dynamic Scaffolding System (DSS) Adaptive Mobility Device and Mobility in Children with Special Needs
Melek Vatansever, Beyzanur Dikmen Hoşbaş, Berna Aramancioğlu

SÖZEL BİLDİRİ LİSTESİ

S01.

Neuromotor effect of tactile kinesthetic massage on premature babies in the neonatal intensive care unit

İlknur Ezgi Doğan[1], Nilay Çömük Balcı[2], Özden Turan[3], Arzu Güçlü Gündüz[4], Ayşe Ecevit[3], Deniz Anuk İnce[3], Meltem Aksu[5]
[1]Başkent University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Ankara, Turkiye
[2]Ondokuz Mayıs University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Samsun, Turkiye
[3]Başkent University, Faculty of Medicine, Department of Pediatrics, Division of Neonatology, Ankara, Turkiye
[4]Gazi University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Ankara, Turkiye
[5]Etlik City Hospital, Department of Pediatrics, Ankara, Turkiye

Purpose: Tactile kinesthetic massage is an approach used with goals such as supporting the baby's nutrition, growth and development, and providing kinesthetic sensation. There are studies to reduce the hospital stay of premature babies in the neonatal intensive care unit and to improve the baby's feeding and oral functions.
Methods: In our study, in order to examine the effect of tactile kinesthetic massage on neuromotor development, tactile kinesthetic massage was applied for 15 minutes 3 days a week for 2 weeks and evaluations were made with the Dubowitz neurological scale. For this purpose, premature babies included in the study were randomly divided into two as control and massage groups according to their birth order.
Results: According to the Dubowitz neurological evaluation results, it was observed that the neuromotor responses of premature babies showed a statistically significant increase ($p<0.05$) in the tactile kinesthetic massage and control groups, and there was a statistically significant difference between the groups after the treatment.
Conclusion: As a result of our study, it is thought that tactile kinesthetic massage application can be used to support the neuromotor development of premature babies in the neonatal intensive care unit.
Keywords: Tactile kinesthetic massage, Preterm Infants

S02.

Early intervention program applied according to the Bobath concept on risky premature babies and investigation effects on long-term neurodevelopmental parameters

Çiğdem Ünver[1], Hilal Başak Can[2]
[1]SENs Gelişim Akademi, Istanbul, Türkiye
[2]Marmara University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Istanbul, Türkiye

Purpose: Evaluating neuromotor aspects and providing early intervention for premature babies is crucial, as they face a heightened risk of cerebral palsy (CP) and similar neurodevelopmental problems.
This study aimed to examine the long-term effects of the Bobath concept intervention on neurodevelopmental parameters in high-risk premature babies.
Methods: The study included 66 premature babies (born before 32 weeks and weighing 450-2000 grams), who were referred for early physiotherapy. The participants were divided into a study group (43 babies receiving Bobath concept intervention) and a control group (23 babies receiving conventional therapy). From the day they were sent to the physiotherapy and rehabilitation program, the babies were followed up with therapy by a Bobath therapist and a family program was given for 30 months. Intervention stringency was regularly adjusted according to the needs of the infant and family. Neurodevelopmental parameters were assessed using the Bayley Scales of Infant and Toddler Development III (Bayley-III) at corrected ages of 4-6 months, 12-18 months, and chronological ages of 24-30 months.
Results: The study group showed statistically significant improvements in cognitive development, language skills, and motor skills compared to the control group according to the Bayley-III ($p<0.05$). During follow-up, ten children in the study group and three in the control group were diagnosed with CP.
Conclusion: The Bobath concept is a suitable intervention method in the early follow-up of premature babies, with its holistic approach, family education and solution suggestions in accordance with ICF.
Keywords: Bobath concept, Early intervention, Premature

S03.

Impact of physiotherapy on early preterm infants in the neonatal intensive care unit using the international classification of function framework

Deniz Cakir[1], Nilay Comuk Balci[1]
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Purpose: Physiotherapy exercises administered to preterm infants in the NICU can enhance motor skills and expedite the discharge process for infants born before 30 weeks of gestational age. The research delves into the influence of physiotherapy programs on these preterm infants' activity and participation levels in International Classification of Function (ICF).
Methods: Infants were enrolled in intervention programmes, after the infant was stable in terms of respiration. The intervention group received a one-month physiotherapy program including massage around the mouth, mobilization and weight-bearing exercises, and massage therapy for the extremities, while the control group did not. The motor skills were evaluated by the Test of Infant Motor Performance (TIMP), Dubowitz Neurological examination, and Preterm Oral Feeding Readiness Scales (POFRAS).
Results: There was a significant difference in The TIMP, Dubowitz Optimal Score, Type of Non-Invasive Ventilation, TIMP Range, and POFRAS scores in the physiotherapy group rather than the control group ($p=0.000$ in TIMP, Dubowitz and POFRAS). There were no differences in the length of stay in the NICU, respiration rate, heart rate, body temperature, oxygen saturation, body weight on the evaluation day, body weight at discharge, head circumference at discharge between the groups ($p>0.05$).
Conclusion: We conclude that physiotherapy in NICU improves the motor and feding outcomes which are in activity and participation domain of ICF in preterm infants rather than the body functions and structure like vital signs and infants' body weight.
Keywords: Early intervention, Preterm infants, Motor development, Developmental care, NICU

S04.

Long-term follow-up results of infants with Prader-willi syndrome from the first months of life: a case series

Bilge Nur Yardımcı-Lokmanoğlu[1], Akmer Mutlu[1]
[1]Hacettepe University, Faculty of Physical Therapy and Rehabilitation, Developmental and Early Physiotherapy Unit, Ankara, Türkiye

Purpose: This study aimed to investigate the early motor repertoire between 9-20 weeks and later developmental functioning outcomes in infants with Prader-Willi Syndrome (PWS).
Methods: Three-infants diagnosed with PWS were included and assessed for the early motor repertoire using the detailed General Movements Assessment (GMA) and developmental functioning using the Bayley Scales of Infant and Toddler Development-III (Bayley-III). The infants' gestational weeks were 35, 37, 40 weeks, and birth weights were 1500, 2080, 2590 grams, respectively (same order throughout the text).
Results: The GMA was applied at 12, 19, and 11 post-term weeks of age, and the Bayley-III was performed at 39, 32, and 25 months of age. All infants had absent/sporadic fidgety movements. Results of all other GMA subcategories, observed movements patterns, age-adequate movement repertoire, postural patterns, and movement character, were suboptimal in all infants with PWS. The Motor Optimality Score-Revised (MOS-R) obtained using GMA were 7, 9, and 7. The Bayley-III composite scores of the cognitive, language, and motor domains were as follow: (i) 80, 86, 61, (ii) 90, 79, 64, and (iii) 60, 65, 61.
Conclusion: Our findings demonstrated that absent/sporadic fidgety movements, suboptimal movement and postural patterns, and low MOS-R in infants with PWS could be an early sign of later developmental functioning outcomes and the need for early intervention. Most of the Bayley-III subdomains were also below average in the infants with PWS.

In conclusion, the results of this study provide longitudinal insight into early motor repertoire and developmental functioning outcomes in infants with PWS.
Keywords: Early motor repertoire, Development, Infant, Prader-Willi Syndrome

S05.
Catching the high risk of cerebral palsy - evidence-based practice example
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[2]Giresun University Faculty of Medicine, Giresun, Türkiye
[3]Hacettepe University Faculty of Physical Therapy and Rehabilitation, Ankara, Türkiye

Purpose: Infants who are at risk of neuromotor development issues due to various negative environmental and biological factors are commonly referred to as risky babies. Cerebral palsy (CP) is a condition characterized by impaired posture and motor development resulting from static, non-progressive damage to the immature brain. Early detection of CP risk in babies under 12 months of age has been shown to facilitate motor and cognitive development through timely intervention studies.
Methods: In our clinic, we conducted the Hammersmith Infant Neurological Examination (HINE) and General Movement Assessment (GMA) tests over a span of three years. Babies referred to us by Pediatric Neurologists, based on the Turkish Neonatology Association High-Risk Baby Monitoring Form, were evaluated for high-risk factors associated with cerebral palsy. The evaluation involved the administration of HINE and GMA tests to assess the neurodevelopmental status of these risky babies.
Results: The results of our study revealed that out of the 68 babies evaluated, 36 were identified as high-risk cerebral palsy babies. The HINE test scores showed a mean of 60.65 ± 9.96, with 32 babies falling under the optimal category and 36 babies categorized as suboptimal. Notably, a significant number of babies in the 3-month group were found to be suboptimal in the HINE test, with a portion of them exhibiting Absent Fidgety (F-) movements according to the GMA assessment.
Conclusion: These findings underscore the importance of early identification and intervention for babies at risk of cerebral palsy to enhance their developmental outcomes.
Key Words: Cerebral palsy, Early identification, High risk babies

S06.
Individualized goal-directed Bobath therapy in two patients with dyskinetic cerebral palsy with musculoskeletal deformities: case series
Kübra Seyhan Bıyık[1]
[1]Hacettepe University, Faculty of Physical Therapy and Rehabilitation, Cerebral Palsy and Pediatric Rehabilitation Unit, Ankara, Türkiye

Purpose: Children with dyskinetic cerebral palsy (D-SP) may experience musculoskeletal deformities such as spinal and hip problems. This study was conducted to investigate the effect of individualized Goal-directed Bobath Therapy (Gd-BT) in two patients with D-SP.
Methods: An non-ambulatory patient with D-SP with thoracolumbar scoliosis (22 years old, case 1) and an ambulatory child with D-SP who had hip dislocation surgery (8 years old, case 2) admitted to Cerebral Palsy and Pediatric Rehabilitation Unit. They underwent Gd-BT for 2 sessions (60 min) per week for at least six months under the control of a certified Bobath therapist. The interventions were explained to the patients and consent forms were signed. Before starting the intervention, goals were determined with patients and their caregiver using the Goal Attainment Scale (GAS). In the first case, goals related to pain associated with spinal problems and in the second case, goals related to balance and walking performance after unilateral hip surgery were set. Pain level was evaluated with the Visual Analog Scale (VAS). Balance performance was evaluated with sit-to-stand test (STS). Gait performance was evaluated according to the Gross Motor Function Measure. At 12-week intervals, the tests were repeated.
Results: In the first patient, pain in the right side lumbosacral region decreased on the VAS scale at week 12 and persisted at week24. In the second patient, STS duration decreased and independent walking distance increased at week24. There were improvements in GAS scores.
Conclusion: Individualized Gd-BT is beneficial for pain, balance and walking performance in patients with dyskinetic CP.
Keywords: Cerebral palsy, goal directed therapy, Bobath Therapy

S07.
The effects of neurodevelopmental therapy on feeding and swallowing activities in children with cerebral palsy
Gönül Acar[1], Nasim Ejraei[1], Dilşad Turkdoğan[2], Necati Enver[3], Gülten Öztürk2, Gülçin Aktaş[4]
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Purpose: This study investigated the effect of the structured Neurodevelopmental Therapy Method-Bobath (NDT-B) approach on the feeding and swallowing activity of patients with cerebral palsy (CP) with feeding difficulties.
Methods: In addition to oral motor intervention strategies (OMIS), and nutrition-related caregiver training (NRCT), the structured NDT-B was added to the therapy program. 40 patients with CP, with a mean age of 3.25 ± 0.927 years, were classified using the Gross Motor Function Classification System level 1 (n = 6), level 3 (n = 2), level 4 (n = 8), level 5 (n = 24) and Eating and Drinking Ability Classification System. The patients were randomly assigned into two groups as Control (n=20) and Study (n=20) groups. The program was applied for 6 weeks, 2 days/week, for 45 min. The patients were evaluated using the Trunk Impairment Scale, Schedule for Oral Motor Assessment, and the Pediatric Quality of Life Inventory before and after 6 weeks. Fiberoptic Endoscopic Evaluation of Swallowing was performed whenever needed.
Results: The trunk control of the Study group was superior to the control group (P=0.026). Although there was an improvement in the groups according to the subcategories of SOMA, the Study group was superior in the trainer cup and puree subcategories of SOMA (P=0.05).
Conclusion: A significant correlation was observed between trunk control and oral motor functions in children with CP, and the eating function of children in the Study group further improved. NDT-B-based neck and trunk stabilization exercises should be added to the treatment programs.
Keywords: Neurodevelopmental Therapy, Cerebral palsy, Feeding, Swallowing

S08.
Is upper extremity BoNT-A an important treatment to increase activity and participation in children with cerebral palsy: a systematic review
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Purpose: Spasticity is one of the most common disorders in Cerebral Palsy and causes deterioration of muscle tone, lack of motor control and balance disorders. All this situation causes limitations in the upper extremity activities of the child, affects the independence and causes a decrease in the quality of life.
Today, there are many types of interventions for spasticity management. BoNT-A, the most well-known of these, is usually applied in combination with other interventions. There are studies in the literature on other applications with BoNT-A intervention, but there is no systematic review on this. The aim of this study is to evaluate the effectiveness of interventions with BoNT-A in the upper extremity on activity and participation.
Methods: Five databases between 2010 and 2023 were used for the study; PEDro, ScienceDirect, Web of Science, PubMed and The Cochrane Library. All included articles were evaluated based on their level of evidence and conduct.
Results: Six articles met the inclusion criterias. Studies have examined the effectiveness of different approaches, and in some studies the

interventions were found to be effective in terms of effectiveness or participation, but there were no proven effects on each other.
Conclusion: The reasons that can be considered as limitations in this review are the small sample size and the application of mostly the same type of additional interventions in the studies. Since activity and participation are important parameters affecting the lives of children, more and different types of interventions focusing on these parameters need to be included.
Keywords: Cerebral palsy, BoNT-A, Upper extremity, Activity, Participation

S09.
Construct validity and reliability of the Affordances in the Home Environment for Motor Development-Infant Scale
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Purpose: Environmental interaction with motor development contributes to different aspects of development such as language, social, and emotional in infants. In addition to early intervention to support motor development in at-risk infants, environmental conditions in the home setting should be taken into consideration. This study aimed to examine the construct validity and reliability of the Turkish Affordances in the Home Environment for Motor Development-Infant Scale (AHEMD-ISTr).
Methods: The study included 110 (38.1% risky infants/ 61.9% typically developing) with a mean age of 9.24±4.67 (3-18 months) months. The AHEMD-IS scale was adapted into Turkish according to international-scale translation steps. We registered our study at ClinicalTrials.gov with the number NCT04556487.
Results: Construct validity model fit indices CMIN/df=1.624, GFI=0.775, AGFI=0.719, CFI=0.856, and RMSEA=0.076 were found acceptable. The final version of the scale consisted of Physical Space, a Variety of Stimulation, Gross Motor Toys, and Fine Motor Toys, and 24 items. Internal consistency (α_{total}=0.827) and test-retest reliability (ICC_{total}=0.760) were high. A low-high correlation was found between AHEMD-ISTr and ICF-based questions (0.211-0.559; p<0.05). There was a low correlation between the father's education level (r=0.212), the mother's education level (r=0.214), and monthly income (r=0.209) and AHEMD-ISTr (p<0.05).
Conclusion: The AHEMD-ISTr scale is a valid and reliable scale for assessing environmental conditions in the home setting of high-risk infants. In line with the principles of a holistic approach, clinicians and academicians working with high-risk infants are recommended to use AHEMD-ISTr in the assessment of the home environment.
Keywords: Child development, Environment, Infant care, Reliability and validity

S10.
Effects of motor impairment and environmental factors on social participation in children with spastic diplegic cerebral palsy
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Purpose: To test a model of motor impairment, environmental factors, and social participation in children with spastic diplegic cerebral palsy (SDCP).
Methods: Twenty children with SDCP aged 5-13 years (mean age 10.28± 2.5; 11 males and 10 females) were included in the study. Motor impairment included variables of trunk control, dynamic balance, and manual ability and was measured using the Trunk Control Measurement Scale (TCMS), Timed Up and Go test (TUG), and ABILHAND-Kids. Social participation was assessed using the Assessment of Life Habits (Life-H). Structural equation Modelling (SEM) was used to test the model.
Results: In the first model, motor impairment and environmental factors were found to have total effects of 0.61 and- 0.29, respectively, on participation in daily activities. In the second model, motor impairment and environmental factors had relatively lower total effects on social roles than in the model of daily activities (α1=0.25; α2=-0.12). Also, environmental factors mediated the effects of motor impairment on social participation, with indirect effects of -0.84*-0.29 and -0.84*-0.12.
Conclusion: Our findings indicate that both motor impairment and environmental factors significantly influenced the social participation of children with SDCP, with motor impairment exerting relatively greater impacts. Importantly, these factors were more effective in predicting participation in daily activities than social roles.
Keywords: Cerebral palsy, Diplegic, Participation, children, Structural equation modelling

S11.
Turkish adaptation and psychometric properties of the Standardized Infant NeuroDevelopmental Assessment Neurological Scale in Turkish at-risk infants
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Purpose: Early identification and intervention of neurodevelopmental delays can significantly improve outcomes for infants, and therefore, having a standardized assessment tool is essential for clinicians and healthcare professionals working in this field. The aim of this study was to assess the concurrent validity and reliability of the Turkish adaptation of the Standardized Infant Neurodevelopmental Assessment (SINDA) neurological scale.
Methods: In the study, 111 infants (46 females) participated. Construct validity for the SINDA neurological scale was determined through confirmatory factor analysis, while concurrent validity was established by examining the correlation between the SINDA neurological scale and the Alberta Infant Motor Scale and the Hammersmith Infant Neurological Examination through Spearman's correlation analysis. Moreover, the test-retest reliability of the SINDA scale was examined and the intraclass correlation coefficient (ICC) was found in the study.
Results: Construct (RMSEA=0.050; GFI=0.93) and concurrent (r=0.19–0.78; p < 0.05) validities of the SINDA neurological scale were acceptable. Confirmatory factor analysis results regarding construct validity support the six-factor structure of the original scale. High Cronbach's alpha and ICC values were found (Cronbach a 0.74-0.81, ICC 0.991-0.997). We also found low to high positive correlation of SINDA with HINE and AIMS.
Conclusion: The SINDA neurological scale exhibits strong psychometric qualities, making it a reliable and valid instrument for evaluating the neurodevelopmental aspects of Turkish infants at risk. This could have important implications for clinical practice, as early identification and intervention of neurodevelopmental delays can improve outcomes for infants.
Keywords: SINDA, Validity, Reliability, Developmental screening, At-risk infant

S12.
Examining the effects of home-based trunk control exercises on balance and postural control in children with spastic cerebral palsy
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Purpose: This study aims to investigate the effects of exercises individually planned by a physiotherapist and performed at home under the supervision of a caregiver on trunk control, lower extremity selective movement, balance, spasticity and postural control.
Methods: Fourteen children with CP (CwCP) between the ages of 5-14 and gross motor function levels I-II-III were included in the study. 'Trunk Control Measurement Scale (TCMS)', 'Selective Control Assessment of the Lower Extremity', 'Modified Ashworth Scale', and 'BeCure Balance Evaluation Systems' were used before and after the treatment. In

addition to the rehabilitation programs children routinely received, trunk exercises chosen by the physiotherapist were applied under the supervision of a caregiver 2 days a week for 8 weeks.
Results: Our study showed an improvement in static (p=0.021) and dynamic (p=0.002) sitting balance according to the TCMS. Respectively, right and left hip flexor (p=0.030; p=0.043), left hip adductor (p=0.000), left knee flexor (p=0.001) and ankle plantar flexor (p=0.001; p=0.000) muscle tones significantly reduced. No difference was found in selective movement of the lower extremities and static balance with eyes open/closed.
Conclusion: CwCP were found to benefit from home-based exercises performed under the supervision of caregiver in terms of trunk control and lower extremity tone regulation. We think that training protocols and larger sample sizes are required in trials to investigate the effects of home-based trunk exercises on balance and postural control in CwCP.
Keywords: Cerebral palsy, Trunk control, Exercise

S13.
Long-term results of neurodevelopmental treatment approach in cerebral palsy
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Purpose: This study was conducted to show the effects of long-term neurodevelopmental treatment in 10 cases with Cerebral Palsy.
Methods: Cases whose age range at treatment was between 18 months and 10 years and who were followed by the same therapist 1-3 sessions a week for 4 years were included. Before treatment, cases were classified according to movement disorder (spastic, dyskinetic, ataxic and mixed), relevant body parts (paraplegic, tetraplegic, diplegic, hemiplegic, monoplegic) and gross motor function classification system. Each year separately; muscle tone was evaluated using the Modified Ashworth Scale, joint range of motion was evaluated using a goniometer, hand functions were evaluated using the Manual Ability Classification System (MACS), and gross motor functions were evaluated using the Gross Motor Function Measure-88.
Results: Significant improvements were observed, especially in the first year after treatment, compared to the pre-treatment status of the children who were followed at regular intervals within the scope of the study. Based on these results, significant improvements were noted in the GMFCS levels of children who received regular physiotherapy. A significant decrease in muscle tone was observed at the end of the first year after treatment.
Conclusion: Long-term implementation of the neurodevelopmental treatment program by the same therapist showed positive effects on both the child's capacity and the performance (independence) of functional motor skills.
Keywords: Cerebral palsy, Neurodevelopmental therapy, Gross motor skills

S14.
The Turkish adaptation of Gross Motor Function Classification System Family Report in children with cerebral palsy, the determination of its reliability, and the investigation of the consistency of the family and the physiotherapist in determining the gross motor function level
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Purpose: The aim of the study was to create Turkish version of the Gross Motor Function Classification System Family Report (GMFCS-FR) developed for children with Cerebral Palsy (CP), evaluate its reliability, and investigate its consistency between parents and physiotherapists.
Methods: Within the study, it was planned to conduct the validity study of GMFCS-FR. Mothers, fathers and physiotherapists of 100 children with CP, aged 2-18 years, participated. All children participating in the study were divided into five groups according to the appropriate GMFCS-FR as 2-4 years, 4-6 years, 6-12 years, 12-18 years and 12-18 years self-report. The GMFCS levels were learned from physiotherapists and recorded. Mothers, fathers, physiotherapists rated the children's motor skills using the appropriate GMFCS-FR. Mothers and fathers were asked to score the WeeFIM 2® to determine the child›s functional abilities.
Results: The test-retest reliability values of GMFCS-FR were recorded as ICC=0.990/0.991/0.985/0.987/0.989 for each group in mothers and ICC=0.961/1,000/0.989/0.986/1,000 in fathers. Interobserver reliability values were found to be ICC=0.973/0.955/0.954/0.962 for mothers and physiotherapists, ICC=0.929/0.948/0.978/0.915/0.902 for fathers and physiotherapists. In the validity study, relationship between GMFCS-FR classifications of mothers and fathers and WeeFIM 2® total scores was found to be r=0.847/0.840. The consistency of the mothers with the physiotherapists was recorded as κ:0.738/0.676/0.806/0.530/0.718 and κ:0.741/0.807/0.936/0.590/0.502 for fathers.
Conclusion: Recently, the activities of families in the rehabilitation program have gained importance. The ability of families to determine their children's motor performance with GMFCS-FR, which is a reliable and valid classification system, will facilitate creating common goals with physiotherapists.
Keywords: Cerebral palsy, GMFCS-FR, GMFCS

S15.
The effects of treadmill training on postural control and balance in children with spastic diplegic cerebral palsy: A cross-over controlled study
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Purpose: The aim of this study was to investigate the effects of unsupported treadmill training (TT) on postural control (PC) parameters, balance in children with spastic diplegic cerebral palsy (CP).
Methods: Twelve children with CP, level I-II according to Gross-Motor-Function-Classification System (GMFCS) were included. Participants were divided into two groups using randomized-sampling method. Study was designed as a cross-over study. In the first phase, the first group underwent routine physiotherapy-rehabilitation program (PTR) 3 sessions/week, 45 minutes per session, for 12 weeks. In the second group, 20 minutes of TT starting with 0.5 km/h speed, was added to the same PTR (n=6). At the end of 12 week, 4-week-long wash-out period was given. After this 4 weeks period, both groups crossed-over for another 12 weeks at the second phase of therapy. All tests were applied at baseline and at end of the first and second phases. PC was evaluated with Balance-Master computerized posturography (Neurocom Inc.) which consisted of tests of modified-clinical-sensorybalance-interaction (MCSBT), weight-shifting-in-standing (WSST), limits-of-stability (LoST) and rhythmic-weight-shifting (RWST).
Results: The two groups were similar in age, body composition, GMFCS Levels and spasticity levels before the treatment and after the wash-period (p>0,05). After TT, there were significant improvements in PC parameters, MCSBT: composite-balance-score (p=0.02), center of gravity alignment (p=0.02); WSST: symmetry (p=0.03); LoST: backward weight-shifting (p=0,02), end point reaching (p=0.02-0.04), maximum-orientation (p=0.02-0.04); RWST: direction control (p=0.02-0.04), on-axis-velocity (p=0.02-0.04).
Conclusion: Including TT in PTR treatment program can enhance PC and balance in children with CP.
Keywords: Cerebral palsy, Postural control, Balance, Rehabilitation

S16.
The relationship between parental self-efficacy and family support for children with special needs
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Purpose: For parents, self-efficacy perceptions of parents should be high for families with a child with special needs to adapt to and accept this situation. It is known that family stress and burden decrease with

the increased social support perceived by families. This study was planned to examine the relationship between parental self-efficacy and family support in children with special needs.
Methods: The study included parents of children with special needs who were being treated in special education and rehabilitation centers. The parents' socio-demographic characteristics were questioned. The parental self-efficacy perception was assessed with the Parental Self-Efficacy Scale, and the family's perception of social support was assessed with the Family Support Scale.
Result: The study included 107 parents (75.7% mothers). Among these families, 89 (83.2%) had a middle-income level. There was a moderate positive correlation between parental self-efficacy and emotional support, informational support, close relationship support, and financial support—sub-parameters of the family support scale. Additionally, there was a low positive correlation between parental self-efficacy and care support ($p<0.05$).
Conclusion: As a result, a significant relationship was found between parents' self-efficacy perceptions and their levels of social support. We believe that to enhance self-efficacy perceptions, approaches that contribute to increasing individuals' social support resources should be planned, and parents should be supported based on their specific needs.
Keywords: Children, Family burden, Family support, Special needs

S17.
The experiences and challenges faced by adolescents who have a sibling with cerebral palsy
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Purpose: Caring for individuals with significant disabilities, such as cerebral palsy (CP), comes with a substantial responsibility. While there are studies on how parents perceive this responsibility, there needs to be more literature on the experiences of healthy siblings, who are often overlooked within the family dynamic. This study explores the experiences and challenges of adolescents with a sibling with CP.
Methods: Semi-structured interviews were conducted with 12 adolescents with a sibling with CP, aged 10 to 22 years.
Results: Seven themes emerged from the interviews: (1) Emotional reactions; (2) Acceptance and resignation; (3) Sibling relationships; (4) Social relationships; (5) Expectations for the future; (6) Social participation; (7) Household responsibilities.
Conclusions: The study revealed the experiences and challenges faced by teenagers who have a sibling with CP. These experiences can impact their future, family relationships, and social life. The study also emphasizes the critical role of healthcare professionals in providing personalized, person-centered care to effectively support this often-overlooked group within families affected by CP and make a significant difference in their lives.
Keywords: Cerebral Palsy, Siblings, Lived Experience, Adolescents

S18.
Investigation of the participation and related factors in children with spastic cerebral palsy
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Purpose: The aim of this study was to investigate the factors affecting participation in children with spastic cerebral palsy.
Methods: Children who were diagnosed with spastic CP, aged between 6-18 years, with Manual Ability Classification System (MACS) levels I-III, with no Botulinum Toxin administration in the last 6 months, with no orthopedic intervention within last year and who were able to follow the instructions given were included in the study. Participation level was assessed with the Assessment of Life Habits (LIFE-H), muscle tone with Modified Ashworth Scale (MAS), selective motor control with the Selective Control of the Upper Extremity Scale (SCUES), trunk control with Trunk Control Measurement Scale (TCMS). Grip strength was also evaluated.
Results: The mean age of 67 children (39 males 28 females) who participated in the study was 11.1±3.8 years. The best predictors for participation were trunk control and selective motor control. These predictors explained 69% of the variance on the LIFE-H ($F=79,98$, $p<0.001$).
Conclusion: Trunk control and selective motor control were the strongest predictors of participation in children with spastic cerebral palsy. Children who had better trunk control and selective motor control may be more successful in participation in daily activities or social roles. As trunk control and selective motor control are the important parts of participation, it is important to focus on these factors when planning treatment goals and interventions.
Keywords: Participation, Upper extremity, Selective motor control, Cerebral palsy

S19.
Intra- and inter-rater reliability and validity of tele-assessment of Selective Control of Upper Extremity Scale in children with hemiplegic cerebral palsy
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Purpose: Loss of selective motor control is common in children with cerebral palsy (CP). Selective Control of Upper Extremity Scale (SCUES) is a valid and reliable assessment tool for evaluating selective motor control in children with CP. Whether physiotherapy is conducted face-to-face or via tele-rehabilitation, children with CP still need a physical assessment to determine a specific treatment program. The aim was determining the intra- and inter-rater reliability and validity of tele-assessment of SCUES in children with hemiplegic CP.
Methods: A total of 36 children with CP, aged 4-18 years, evaluated face-to-face and tele using video-conferencing. Video-conference session was recorded to be later scored by two evaluators. Reliability was determined by intraclass correlation coefficient (ICC). Discriminative and concurrent validity was examined based on the Manual Ability Classification System (MACS) and face-to-face results.
Results: Intra-rater reliability between the face-to-face and tele-assessment of SCUES were excellent (ICC:0,935; 95%CI:0,875-0,966). The intra (ICC:0,971; 95%CI:0,945-0,985) and inter-rater (ICC:0,959; 95%CI:0,921-0,979) reliability of tele-assessment were excellent. Discriminant validity was provided by grouping children according to their MACS level based on the results of tele-SCUES ($p<0,001$). There were moderate-to-strong correlations between the tele and face-to-face results ($r:0,938$, $p<0,001$).
Conclusion: Tele-assessment of selective control of upper extremity in children with CP using SCUES is valid and reliable. This will bring tele-rehabilitation closer to the goal of equal opportunities for children with CP. Further studies are also needed to fully achieve this goal.
Keywords: Tele-rehabilitation, Tele-assessment, Cerebral palsy, Children, Selective control

S20.
Improving feeding skills and transition to breastfeeding in early preterm infants: a randomized controlled trial of oromotor intervention
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Purpose: Oromotor therapy exercises used for preterm infants in the NICU might promote oral-motor skills and shorten discharge day. This study investigates the impact of an oral-motor therapy program on the successful transition to breastfeeding (BF) and the enhancement of

feeding skills in preterm infants below 30 weeks of gestational age who experience feeding intolerance.
Methods: The intervention group received oral-motor therapy programme for one month, while the control group did not. The feeding skills were evaluated by Early Feeding Skills Assessment Tool (EFS) and Preterm Oral Feeding Readiness Scales (POFRAS).
Results: There was a significant difference in EFS and POFRAS scores, transition to bottle feeding at discharge and transition to BF after discharge between babies given oral-motor therapy programme and controls ($p<0.05$). While the transition time to full enteral feeds did not vary significantly between the groups, noteworthy outcomes were observed in the intervention group, including differences in feeding type at discharge, the nature of feeds at discharge, and the success of transitioning to breastfeeding after discharge.
Conclusion: We conclude that the oromotor therapy exercises in NICU improves the quality of sucking, contributes to better oromotor skills and promotes transition to enteral feeding and BF in preterm babies.
Keywords: Preterm, Oral-motor therapy program, Oral feeding, Breast feeding

S21.
Spatiotemporal gait parameters in children or adolescents with unilateral cerebral palsy compared to typically developing children: a systematic review and meta-analysis
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Purpose: Children with cerebral palsy (CP) often have difficulty walking due to various factors. This review aims to identify and measure the specific walking differences between children with unilateral CP (UCP) and typically developing children (TDC).
Methods: This study used a rigorous methodology, searching eight electronic databases (from their inception to October 24, 2023) and evaluating the methodological quality of included studies. Calculations were performed using different models based on the statistical heterogeneity, and meta-regression analyses were conducted to investigate potential moderators.
Results: A total of 26 studies involving 937 participants (347 with UCP and 590 with healthy control) met the inclusion criteria. The number of studies included in the meta-analysis differed according to the gait parameters. The included studies exhibited medium or high methodological quality. There were significant differences in walking speed, stride/step length, and step width of gait parameters between UCP and TDC ($p<0.05$). The self-selected walking speed was 0.145 ms^{-1}, walking speed in the dual-task condition was 0.167 ms^{-1}, stride/step length were 0.102/0.109 m lower in UCP compared to healthy peers. Additionally, the step width was 0.033 m higher in UCP compared to TDC.
Conclusions: CP affected walking speed, stride/step length, and step width of spatiotemporal gait parameters in unilateral cases. Determining these gait parameters will help to identify which intervention elements are critical for positive changes in individuals with UCP.
Keywords: Gait, Cerebral palsy, Meta-analysis, Spatio-temporal analysis

S22.
Predicting postoperative ambulation following selective dorsal rhizotomy based on preoperative gross motor function score
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Purpose: Cerebral Palsy (CP), the most common neurodevelopmental disorder, often presents as spastic CP. Selective Dorsal Rhizotomy (SDR) is a surgical method used to manage spasticity in children with bilateral spastic CP. This study investigates the predictability of post-operative ambulation status based on pre-operative Gross Motor Function Measure-88 (GMFM-88) scores in Spastic CP (SCP) cases.
Methods: Of 820 SCP cases undergoing SDR at Acıbadem University's Pediatric Neurosurgery Department (2003-2022), 95 met specific criteria: aged 2-9 years (mean: 4.9±1.8), pre-operative GMFCS levels II-IV, participated in ≥2 months of post-operative rehabilitation, and included 61 males (64.2%) and 34 females (35.8%). SCP types included diparetic (74.7%), quadriparetic (18.9%), and triplegic (6.3%). Surgical and rehabilitation procedures were standardized. GMFM-88 scores (as percentages) and GMFCS levels were compared pre- and post-operatively. Follow-ups ranged from 9 months to 16 years.
Results: Post-operative GMFM-88 scores (63.22±21.27) were significantly higher than pre-operative scores (49.91±17.26) ($p=0.001$). Significant improvement in GMFCS levels was observed ($p=0.001$), with fewer cases in level II and more in levels I-II post-operatively. A minimum pre-operative GMFM-88 score of 56.35 was identified as predictive of achieving GMFCS levels I-II post-operatively.
Conclusion: This study highlights the predictive value of pre-operative GMFM-88 scores for post-operative ambulation status in SCP. Scores ≥56.35 indicate potential for improved mobility, aiding families in making informed decisions about SDR. Pre-operative assessments by physiotherapists are essential for setting realistic post-operative goals.
Keywords: Cerebral palsy, Selective dorsal rhizotomy, Gross motor function measure, Ambulation prediction

S23.
Evaluation of long-term effects of selective dorsal rhizotomy surgery on function and mobility in children with cerebral palsy using the International Classification of Functioning, Disability, and Health (ICF) model
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Purpose: This study evaluates the long-term impact of Selective Dorsal Rhizotomy (SDR) on function and mobility in children with cerebral palsy (CP) within the International Classification of Functioning, Disability, and Health (ICF) model. SDR regulates muscle tone and improves CP patients' function and mobility.
Methods: Among 778 CP cases undergoing SDR at Acıbadem University Pediatric Neurosurgery Department (2003–2019), 42 diparetic CP cases were selected. Patients, aged 2–9 years (mean age: 4.7±1.7 years; 29 males, 13 females), were operated on by the same surgeon. The Modified Ashworth Scale (MAS) assessed muscle tone, the Gross Motor Function Measure-88 (GMFM-88) evaluated activity, and the Children's Functional Independence Measure (WeeFIM) mobility subscale assessed participation. Follow-ups ranged from 2 to 16 years. Data were analyzed with SPSS 26.
Results: Post-operative MAS scores showed significantly reduced spasticity in the lower extremities ($p<0.05$). GMFM-88 and WeeFIM-Mobility scores significantly improved post-operatively compared to pre-operative values ($p<0.05$).
Conclusion: This study demonstrates that SDR surgery sustainably reduces spasticity while improving functional activity and participation in children with CP. Using the ICF model, it underscores the long-term benefits of SDR in enhancing mobility and quality of life.
Keywords: Cerebral palsy, Selective dorsal rhizotomy, ICF, Long term effects

S24.
Investigation of the instantaneous effect of the adaptive device applied to a child with cerebral palsy on walking- a case study
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Purpose: Cerebral palsy (CP) is a motor and postural disorder caused by brain malformation or damage during early development. It occurs at a rate of 2.1 per 1000 live births and is classified by GMFCS. Level I

and II can walk unassisted, while level III-V use a walker or wheelchair. We aim to analyze the effect of the adaptive device we developed on gait parameters instantaneously.
Methods: An 18-month-old female patient with CP and GMFCS IV was diagnosed with CP. The modified Ashworth test evaluated spasticity, gait parameters were assessed by the 10-metre walk test (10 MWT), and gait endurance was assessed by the 2-minute walk test (2 MWT). Walking tests were performed with and without the adaptive device. Step count was monitored with Omron Walking Style One 2.0 during walking with and without the adaptive device.
Results: With the adaptive device, the patient had an MWT of 10 in 42 seconds, a cadence of 0.66 min/step, and a stride length of 15 cm. In addition, it was found that he completed the test in 25 meters and 134 steps in 2 MWT scores. However, patients with CP could not perform 10 MWT and 2 MWT without the adaptive device.
Conclusion: With the adaptive device we developed for our patient with CP, an increase in gait parameters and gait endurance was observed. However, this study needs to be conducted with more people.
Keywords: Cerebral palsy, Gait, Adaptive device

POSTER BİLDİRİLER

P01.

Learning to drive a wheelchair can be efficient and fun

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Purpose: Independent mobility is crucial for children with physical disabilities to participate fully in daily life. Occupational therapists play a vital role in this, offering effective skills training through playful, simplified methods. However, programs tailored specifically for teaching wheelchair driving to the pediatric population are scarce. This project aims to develop a set of activities that enhance wheelchair driving skills, demonstrated through a multi-case study, focusing on performance and satisfaction improvements.
Methods: Conducted as a multi-case study, our research involved randomly selected participants who recently received their first active and electric drive wheelchairs. We employed a customized activity set designed to enhance skill implementation, utilizing assessments like the Canadian Occupational Performance Measure (COPM), Goal Attainment Scale (GAS), Activity Performance Analysis, and Pediatric Evaluation of Disability Inventory (PEDI).
Results: We observed significant improvements; performance scores increased by 3.7 to 4.6 points, and satisfaction scores by 3.3 to 5.6 points. Using the GAS, the first client's performance in the initial activity improved from -2 to +2, and in the subsequent activity from -2 to +1. The second client improved from -2 to -1 and then from -2 to 0 in these activities.
Conclusion: The results indicate a positive impact from using the tailored set of activities. After the program, children expressed greater satisfaction with their skill performance, underscoring the training's effectiveness. Developing standardized assessments and training protocols for this diverse group is essential, as their varied abilities and needs require personalized approaches.
Keywords: Wheelchair skills, Children, Physical disabilities, Activities

P02.

Effect of intervention based on the Contemporary Bobath Concept in children with cerebral palsy

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Purpose: The treatment based on the Contemporary Bobath Concept can improve the functionality in children with Cerebral Palsy (CP). Aim: to demonstrate the effects of treatment based on the Bobath Concept on functional tasks in the context of participation and activities of children with CP.
Methods: This is a longitudinal, experimental clinical study, whose sample consisted of 10 children with CP, aged 7.7 years (SD= 2.8), GMFCS levels III-V, voluntary participants who received treatment conducted by the students/therapists of the Bobath Course. Baseline assessments were: Goal Attainment Scaling (GAS) and Segmental Trunk Control Assessment (SATCo-BR). The pre-tests of the chosen tasks by GAS were chosen by children/parents and filmed. The child received five sessions of intervention, with 1 hour and 15 minutes of duration, during 2 weeks. Same assessments plus a satisfaction questionnaire were applied after treatment.
Results: Eight patients achieved some degree of improvement in GAS relation to baseline ($U=5$, $p<0.01$). There was no difference in the total score of SATCo. The questionnaire revealed improvements in a few sessions that have repercussions on the child's daily activities and participation.
Conclusion: a short period of treatment make that all patients gained in functional tasks that have repercussions on participation either at home or in the school and outside environment, and parents perceived the functional improvement of their children. The duration of treatment was not enough to show gains in body structure and function.
Keywords: Cerebral palsy, Bobath, Neurodevelopmental

P03.

Assessment of behavioral responses of premature babies in the neonatal intensive care unit

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Purpose: Today, it is known that the survival rate of premature babies has increased with the increase in medical developments. However, as survival rates increase, the duration of stay in the neonatal intensive care unit also increases. Considering that the sensory organization skills of premature babies in the neonatal intensive care unit are immature, it is important to know what their behavioral responses are like during their stay in the incubator, such as sleep and wakefulness, pain responses, self-calming ability, and managing tone.
Methods: For this purpose, 20 premature babies were included to examine the behavioral development of premature babies. Demographic information of the babies is given in Table 1. The behavioral responses of the babies were evaluated twice with a 10-day interval using the COMFORTNeo scale.
Result: According to the ComfortNeo evaluation results, no statistically significant result was found between the first and second evaluations. However, when the evaluation scores were examined, it was seen that the behavioral responses of premature babies due to pain and stress were not high and that the babies' ability to regulate their behavioral responses increased during the evaluation.
Conclusion: It was thought that the behavioral responses of premature babies continued to develop in the incubator environment starting from intrauterine life and the baby adapted to life.
Keywords: Risky baby, Prematurity, NICU

P04.

A comprehensive assessment of neuromotor development in at-risk infants using the Novel Neonatal Infant Motor Assessment Scale (NIMAS) test battery

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Purpose: We developed a new neonatal neuromotor test battery, the Neonatal Infant Motor Assessment Scale (NIMAS), to perform a detailed neuromotor and holistic assessment of at-risk infants in the neonatal period.
Methods: A total of 68 infants included. The NIMAS is a scale consisting of Automatic Motor Area, Functional Motor Area and sociodemographic form. The Dubowitz Neurological Examination and the Amiel-Tison Neurological Assessment Tests were also applied to evaluate the construct validity of the test.
Results: The mean gestational age at birth was 34.62±3.07 weeks and birth weight was 2305.66±738.95. Fifty-one (75%) of the babies were premature and 17 (25%) were term babies. The KMO value to test the adequacy of the distribution for factor analysis was found to be at a very good level. Barlett's test result was 2198.389 ($p<0.05$). The amount of variance obtained as 44.76% in the study was at a sufficient level. The factor loads of the questions in the automatic motor domain dimension varied between 0.523 and 0.694 and the factor loads of the questions in the functional motor domain dimension varied between 0.619 and 0.772. Since Cronbach's alpha was above 0.70, the reliability was adequate. Inter-rater scale agreement in the automatic motor domain was 81.1%; scale agreement in the functional motor domain was 92.9%; and the NIMAS total score agreement was 93.4%. These agreements were statistically significant ($p<0.05$). Total correlation above 0.20 indicates that the item is important for the question. According to the

results obtained, total correlation values were between 0.258 and 0.720. Conclusion: The NIMAS is the first test battery to assess the "Functional Motor Area" and this questionnaire, based on the results of the analyses, is a valid, reliable and clinically usable measurement tool for the infant at-risk at the neonatal period.
Keywords: Premature Infant; Newborn; Infant Development; Risk.

P05.
Physical therapy with Bobath Concept and assisted mobility to improve participation in children with cerebral palsy: case series
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Purpose: Assisted mobility walking devices implementation play an important role for children with Cerebral Palsy (CP) because it helps them to achieve greater independence and autonomy, physical well-being and improve their participation at home, school and community activities. The aim of this case series study was to improve participation with a Physical Therapy intervention, based on the Bobath Concept, and assisted mobility devices in children with CP.
Methods: the case series was developed with 3 girls (3-4 years old) diagnosed with Spastic CP (Gross Motor Function Classification System III). The intervention was based on Bobath Concept sessions and training with the low-cost Padrino Tecnológico support walker and/or powered wheelchair during 8 weeks, 3 times a week. The outcomes were functional goals (Goal Attainment Scaling); walking speed (10-Meter Walking Test); and participation (Young Children's Participation and Environment Measure - YC-PEM).
Results: all children achieved levels +2 (better than expected); there was an increase in walking speed (mean -16 seconds); and a great improvement in participation. Besides, families stated that the use of the low-cost Padrino Tecnológico mobility devices made them feel happier, improved their self-confidence and autonomy, reinforced their social relations; and there was an improvement in physical well-being (better bowel movements and tolerance to effort).
Conclusions: The implementation of the low-cost Padrino Tecnológico mobility devices had a positive effect on the improvement in gait, physical well-being and participation in children with CP.
Keywords: Cerebral palsy, Mobility, Bobath

P06.
Investigation of the relationship between the duration of using the Dynamic Scaffolding System (DSS) adaptive mobility device and mobility in children with special needs
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Purpose: The Dynamic Scaffolding System is a device developed by a physical therapist with extensive clinical experience (M.V.), designed to enable children to reposition themselves while maintaining vertical alignment. The objective of this study is to investigate the relationship between the duration of DSS device usage and mobility in children with special needs, aiming to support their vertical positioning to improve independence and participation.
Methods: The study sample comprised 100 children with special needs (41% CP, 59% with other diagnoses as genetic, metabolic, neuromuscular disorders) aged between 18 and 135 months (Mean age = 54.324.36 ± months). All participants had used DSS for a minimum of one month. Data were collected through telephone interviews with the parents. Demographic variables including age, gender, diagnosis, and level of motor impairment were recorded. The duration of DSS device usage (measured in months) was documented. Children's mobility was assessed using the mobility subscale of the PEDI.
Results: The mean monthly usage duration of the DSS device among the children was 20.03 14.99 ± months. A statistically significant positive correlation was observed between the duration of DSS device usage and the mobility scores ($p < 0.05$).
Conclusion: The findings of this study indicate that extended use of the DSS device is associated with improved mobility scores in children with special needs. These results suggest that the duration of DSS device usage may positively influence the mobility outcomes in this population.
Keywords: Dynamic scaffolding system, Mobility, Children with special needs, Assistive technology