APCP Annual Conference

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The following abstracts were presented at the APCP Annual Conference in 2021

A literature review to identify the optimal conservative treatment pathway for paediatric first-time patella dislocations

Emily Kelford *- Senior Physiotherapist – Birmingham Children's Hospital

**Corresponding author: emily.kelford@nhs.net*

Background

At Birmingham Children's Hospital (UK) there was a lack of standardisation in the management of first-time patella dislocation patients. The typical pathway of this patient group involved a referral from the Emergency Department (ED) to a consultant-led fracture clinic, followed by a referral to physiotherapy; however, patients rarely required intervention in fracture clinic and were predominantly managed by physiotherapy. As a service development initiative, we explored the feasibility of first-time paediatric patella dislocation patients by-passing fracture clinic and being referred directly to physiotherapy from ED.

Aims

A systematic review to identify whether conservative treatment is suitable for paediatric first-time patella dislocations, and to identify an optimal conservative pathway.

Methodology

Search terms were specified in the "PICO" format. Embase, Ovid and AMED were the included databases, and the searches were completed between April-May 2020. Exclusion criteria comprised: adult patients only, surgical reduction, educational papers, only surgical intervention included, congenital dislocation and subluxation only. All included articles were appraised using the Critical Appraisal Skills Programme (CASP). Extracted data included population demographics, intervention, and results, to enable narrative synthesis in four categories: conservative versus operative treatment, orthotic provision, weight bearing status and physiotherapy treatment.

Results

15 studies were included in the review. Analysis identified 60% of the included studies investigating surgical versus conservative management found no significant difference, and 10% favoured conservative management. Regarding orthotic support, a patella stabilising orthosis was the only included orthotic to have a beneficial outcome. With reference to weight bearing, 6 of the included studies specified a weight bearing status, all of which were fully weight bearing as tolerated, and there were no harmful resultant effects. None of the included studies compared different physiotherapy treatments, therefore the optimal pathway is unclear; the most commonly occurring themes identified were inclusion of: quadriceps isometric strengthening, open chain exercise and general quadriceps exercise.

Limitations

A single reviewer was utilised, thus increasing the risk of bias. Moreover, the included articles did not solely include a paediatric population, thus decreasing the validity of the results, however, paediatric patients featured in all of the included studies.

Implications for practice

Paediatric first-time patella dislocation patients could be referred directly to physiotherapy from ED. They should be advised to fully weight bear as tolerated and if a splint is provided, this should be a patella stabilising orthosis. Physiotherapy treatment should focus on quadriceps strengthening, but a definitive consensus is yet to be established.

The influence of bracing on health-related quality of life in adolescent idiopathic scoliosis: a systematic review.

Holly Spencer * - Lecturer, Cardiff University
Una Jones – Reader, Cardiff University

**Corresponding author: spencerhl@cardiff.ac.uk*

Background and Objectives

Adolescent idiopathic scoliosis is the most commonly occurring spinal deformity in children (Altaf et al. 2013, Cheng et al. 2015) which left untreated can have severe health consequences. The most successful conservative treatment is application of a spinal brace but its success relies on wear for a substantial period of the day, often for many years (Weinstein et al. 2008, Negrini et al. 2018) however, chronic illness and associated treatment burdens are reported to influence well-being, particularly during the adolescent period (Clarke and Eiser 2004, Weinstein et al. 2008) and links have been made between those who are not compliant with bracing and lower heath related quality of life (HRQoL).

Gaining knowledge of quality of life throughout patient's healthcare interventions can provide a more comprehensive picture of wellbeing to enable heath care professionals to support patient-centred care (CSP 2012, WHO 2014). This review aimed to identify and synthesise best available evidence to explore if bracing influences health related quality of life in adolescents with idiopathic scoliosis.

Methodology

A systematic search of AMED, CINAHL, EMCARE, MEDLINE, PsychINFO, Scopus and Cochrane electronic databases were carried out. Explicit inclusion criteria were set to identify studies that evaluated the HRQoL of adolescents with a diagnosis of idiopathic scoliosis who were conservatively treated with spinal bracing. Studies were required to utilise a validated HRQoL outcome measure and although no date range was set, included studies were limited to English language. PRISMA guidelines (Liberati et al. 2009) for the reporting of systematic reviews were followed. From 1115 papers identified by searches, 17 full text articles were reviewed for eligibility with 8 meeting review criteria and being taken to critical appraisal. Due to risk of significant methodological bias 3 studies were excluded and the remaining five studies underwent data extraction and due to significant study heterogeneity making meta-analysis inappropriate, a narrative synthesis was carried out.

Results

Five studies, two experimental and three observational, involving 1092 participants were included in the synthesis. Results suggest that bracing does not influence health related quality of life to a point of statistical or clinical significance however evidence suggests exercise may be better tolerated and should be considered if clinically appropriate.
No statistically significant reduction in HRQoL was shown over the duration of bracing treatment but indicators suggest the initial six months may be a point of increased risk with suggestions of a trend of reduced HRQoL although this appeared transient in nature.

Conclusion and implications for practice

Limited very low and low-level evidence was located in this review suggesting bracing as a treatment for adolescent idiopathic scoliosis does not impact HRQoL.
This review has several limitations including the omission of unpublished studies and those not of English language, risking publication and language bias. No retrieved or included studies were from the UK population, limiting generalisability to UK practice where protocols for bracing and cultural influences on HRQoL may affect outcomes. Observational research of greater methodological quality should be undertaken to investigate findings of this review and further explore the influence of bracing on HRQoL in adolescent idiopathic scoliosis.

Patient choice and involvement in treatment planning should be at the forefront of clinicians' decision making with consideration of possible stressors involved with bracing, particularly at the initiation of treatment, to optimise quality of life and clinical outcomes.

Keywords: Scoliosis, adolescent idiopathic scoliosis, quality of life, bracing

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Development of Best Practice Guidelines in the Physiotherapy Management of Children and Young People with Cerebral Palsy who are at Fracture due to Low Bone Mineral Density

Angela Wing*

**Corresponding author: lewisangela11@gmail.com*

Background

Children and young people with cerebral palsy are at risk of decreased bone mineral density (BMD) and low impact fracture (LIF) during normal handling (Houlihan, 2014; Mergler et al. 2009). There is no research available to physiotherapists on how to minimise the risk of fractures during physiotherapy treatment or handling. Discovering the common mechanisms of fracture injury and providing best practice guidelines for physiotherapists may decrease the risk of LIF's and support improved patient care.

Methodology

This study collected primary data via a survey distributed to paediatric physiotherapists across the United Kingdom through the APCP. The survey asked for details on participant demographics, whether they discussed the risk of low BMD and LIF's with their patients/families, details of fracture incidents in the past five years and requested a free text description of the mechanism of injury.

Results

There was n=123 respondents to the study of which n=65 had experience of a fracture in the past five years. The n=65 cohort reported a total of n=87 fractures.

61.5% of physiotherapists reported that they discussed the risk of low BMD and 43.4% discussed LIF's with the patient and their families. The presence of a policy/guideline on bone health management increased the likelihood of these discussions taking place.

79.3% of fracture incidences were at GMFCS level V and 74.7% occurred in the femur. 48.3% of fractures had no known mechanism of injury and 14.9% had a delayed diagnosis. Of the remainder of fractures, 31% were linked to everyday handling (including manual handling and personal care) and 23% were linked to physiotherapy related activities. A number of common mechanisms of injury were highlighted in the study, in particular the risk of fracture when a child is not unfastened from their equipment correctly before hoisting, during personal care and during physiotherapy stretches.

The results produced key learning points that would aid development of best practice guidelines for physiotherapists. These included the increased understanding, awareness and discussion of the risk of LIF's for both physiotherapists and families/carers during physiotherapy interventions and everyday handling.

Conclusion and implications for practice

There is a lack of discussion of the risks of low BMD and LIF's with patients and their families. The high number of LIF's that occurred without any known mechanism of injury and subsequently having a delayed diagnosis of fracture highlighted the need for physiotherapists to routinely discuss this risk with patients and their families.

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Paediatric MSK Waiting List Initiative Post Covid 19

Laura McGibbon* - NHS Lanarkshire
Harriet Bascombe - NHS Lanarkshire

**Corresponding author: laura.mcgibbon@lanarkshire.scot.nhs.uk*

Background

As part of the Covid Recovery Plan, NHS Lanarkshire employed four Physiotherapy Assistant Practitioners (AP's) from a cohort of final year Glasgow Caledonian University Physiotherapy students within Paediatric Physiotherapy for a total of eight weeks. As part of their employment, an MSK waiting list initiative was piloted. The aim of this project was to identify patients from the MSK Paediatric Waiting List who potentially no longer required physiotherapy intervention or where intervention could be offered by the AP's through 'targeted universal information' to reduce waiting list numbers/times impacted by the C19 pandemic.

Objective

- Reduce the waiting list numbers increased by C19 pandemic by contacting patients and identifying if specialist input was still required.
- Reduce patient waiting times by identifying patients who would benefit from targeted universal information to reduce symptoms.
- Utilize AP staff to provide universal advice and reassurance prior to/in place of initial assessment with a qualified physiotherapist.

Methodology

- A waiting list initiative was piloted in NHS Lanarkshire Paediatric MSK service following C19 pandemic.
- Patients were identified by Senior Physiotherapists from the Paediatric MSK Waiting List and if deemed appropriate placed on an excel database.
- AP staff had training opportunities, access to resources and Senior Physiotherapists for advice at all times throughout the process.
- AP staff would then contact families and complete a triage proforma to ensure no red flags were identified and based on the telephone call had 4 outcome options.
- Descriptive data analysis was performed.

Results

In total 53 patients were identified as appropriate for inclusion. The total number of patients who were able to be contacted by telephone was 33 (62%). Incorrect contact details or no answer by telephone equated to 38% of patients identified.

Of the 33 patients successfully contacted 5 (15%) patients were discharged immediately following phone consultation, a further 15 (45%) were discharged following an 'on hold' period having received universal targeted information. This equates to a total of 20 (60%) patients were successfully managed by AP staff via telephone consultation alone.

Conclusions / Implications for practice

There were a high number of patients who were unable to be contacted by telephone. Of those that were, using a targeted universal information approach was effective in managing their symptoms following an increased waiting time due to the C19 pandemic thus reducing waiting list numbers.
This approach could be successfully undertaken by Physiotherapy Assistant Practitioner staff, increasing productivity and efficiency of the service.

pGalSplus: A tool to facilitate the identification and assessment of children with serious musculoskeletal disease

V. Mercer* - Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne, Children's Physiotherapy, South Tyneside and Sunderland NHS Foundation Trust.
N. Smith - Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne.
S. Jandial - School of Medical Education, Newcastle University, Paediatric Rheumatology, Great North Children's Hospital, Newcastle upon Tyne.
H.E. Foster - Population Health Institute, Newcastle University, Newcastle upon Tyne.

**Corresponding author: vicky.mercer@ncl.ac.uk*

Background

Musculoskeletal (MSK) problems are common, often benign and self-limiting and present to healthcare professionals (HCPs) in the community who may not be MSK specialists; it can be challenging to identify those with serious disease. pGALS (paediatric Gait, Arms, Legs and Spine) is a simple, quick MSK assessment and has been shown to detect joint and functional problems in various conditions including inflammatory arthritis. We aimed to develop an extended pGALS assessment, called pGALSplus, to facilitate identification of children with MSK disease who require onward referral to specialist services.

Objective

To pilot the pGALSplus assessment in CYP with Juvenile Idiopathic Arthritis (JIA), Mucopolysaccharidoses (MPS), Muscular Dystrophy (MD) or Developmental Coordination Disorder (DCD) as exemplar MSK conditions and compare feasibility and acceptability with healthy controls (HC)

Methodology

Mixed methods approach; Phase 1 included a scoping review of the literature and qualitative interviews with expert HCPs within paediatric practice to identify key clinical assessments that inform diagnosis and progress. These results informed the initial 'pGALSplus' assessment which underwent iterative development in Phase 2 with an expert working group (including paediatric rheumatologists, expert paediatric physiotherapists and neuromuscular specialists). Phase 3 focused on testing pGALSplus in the exemplar disease groups with feedback from HCPs, patients and carers. Patients; n=37 (JIA;n=10, DCD;n=10, MD;n=9, HC;n=8), age range 2-10 years).

Results

Phase 1 data identified key components of pGALSplus to include: pGALS assessment, a questionnaire to identify further indicators of DCD, components of the North Star Ambulatory Assessment(NSAA) to identify early stages of neuromuscular disease (MD), and an assessment of static balance (found to be significantly worse in children with DCD).

In Phase 2 pGALSplus was further expanded to include clinical assessment aiming to identify pain or restriction of range of movement (JIA or MPS), underlying weakness (MD) or issues with motor planning and coordination (DCD). The additional tests included; testing reflexes (to assess underlying neurology); leg lengths (which may indicate lower limb joint pathology); activity-based skills including standing from the floor (MD), and catching a ball (DCD). Phase 3 demonstrated pGALSplus to be quick to complete (mean 12.6 minutes (9 - 20), with high satisfaction from patients and carers (100% 'about right' time taken). The assessment was deemed 'very easy or easy' for HCPs (35/37, 95%) and patients (32/37, 86%). Parents and children reported high acceptability (32/37, 86% reported it to be 'very comfortable or with minimal discomfort').

Conclusions / Implications for practice

pGALSplus is an evidence and consensus-based tool to discriminate between MSK conditions with high acceptability and feasibility. pGALSplus includes resources to aid HCPs to undertake the assessment. Our aim is that pGALSplus is implemented amongst HCPs (including physiotherapists) in the community who are likely to encounter children early in the clinical pathway.

The impact of sleep disturbances for children with cerebral palsy and their families.

Mary-Elaine McCavert*
Karen McConnell
Oliver Perra
Claire Kerr

*Corresponding author: mmccavert02@qub.ac.uk

Background

Although sleep disturbances are common in children with cerebral palsy (CP) little is known about their nature or extent. Further, the individual and family consequences of sleep disturbances have not been reported.

Objective

To explore the impact of sleep disturbances on children with CP aged 3-18 years resident in Northern Ireland (NI) and their families.

Methodology

In this qualitative study online semi-structured interviews were conducted with families of children with CP. Families were recruited via social media and were eligible to participate if the child with CP was 1) aged 3-18 years, 2) resident in NI and 3) experienced clinical sleep disturbance (as indicated by a score of 70+ on the Sleep Disturbance Scale for Children). Each family interview involved a parent, a child with CP, and a sibling and the interview type was either verbal, written or proxy depending on a participant's preference, age, communication style and cognitive ability. Interviews were video-recorded and transcribed verbatim. Inductive thematic analysis was undertaken to identify key themes. Rigour was established using member checking, confirmatory co-coding with the research team, triangulation of multiple participant perspectives and the incorporation of rich and thick descriptions.

Results

Ten families participated. Most data were collected by verbal interview with the respondent (parents n=10, children with CP n=2, siblings n=6), however a small number of responses from children were either written (children with CP n=2, siblings n=3) or proxy with their parents (children with CP n=6, siblings n=1). Six themes were identified: 1) Identification and acknowledgement of sleep disturbances; 2) Personal and environmental factors contribute to sleep disturbances; 3) Mood and interpersonal relationships are both strengthened and challenged for all family members; 4) Home and school routine are negatively impacted for all family members; 5) Physical health is negatively impacted for children with CP and their parents; 6) Parents seek support and solutions to manage sleep disturbances for their child with CP.

Conclusions / Implications for practice

Despite the wide-ranging consequences of sleep disturbances on the whole family unit, these issues are often not recognised nor addressed. Healthcare professionals should routinely ask children with CP and their families about sleep. Multi-disciplinary, family-centred support for families that experience sleep disturbances are required.

Assessing and addressing the motor difficulties of disadvantaged children with poor fundamental motor skills – FUNMOVES, an evidence-based assessment and physiotherapy programme for children with Developmental Coordination Disorder

Nick Preston*

**Corresponding author: n.preston@leeds.ac.uk*

Background

Fundamental movement skills (FMS) are critical to childhood development. They facilitate participation in physical activity and are associated with wider health, educational and socioemotional outcomes. Alarmingly, a large proportion of children (60+%) are not able to perform age-appropriate FMS. Despite the profound negative consequences of this, children with poor FMS are being overlooked and the most disadvantaged children are being neglected due to low levels of parental awareness, over-stretched healthcare services, and healthcare inequalities.

Aims

To expedite access to assessment and support, this research aimed to develop an intervention which (i) screens all children for FMS difficulties in schools and (ii) empowers teachers to address FMS difficulties within a school environment.

Methods

Supported by the Department for Education, FUNMOVES was co-developed with Bradford Primary schools. FUNMOVES universally screens FMS ability using activities designed for pre-existing assessments (identified by a systematic review) and feasibility guidelines (formed by teacher opinions). Based on the difficulties identified in the assessment, children are then given paired physiotherapy exercises, identified by a systematic review as having the strongest evidence for large improvements in FMS ability in a clinical setting but now delivered by teaching assistants using a co-developed manual that has already been piloted by teaching assistants. Over three studies 814 children (4-11 years) were assessed, and after each study Rasch analysis was used to evaluate construct validity; modifications of FUNMOVES were made, based on Rasch and implementation fidelity results. Ethical approval was granted by the University of Leeds School of Psychology Research Ethics Committee (reference numbers: PSC-591 and PSC-773).

Results

After three rounds of modifications, FUNMOVES is unidimensional, with good fit to the Rasch model, it meets standards for accurate measurement, and can differentiate between ages and abilities. FUNMOVES also meets feasibility criteria as it enables two members of teaching staff to assess the FMS of a whole class in under an hour, in a small space, using items available in schools. Teachers found the physiotherapy exercises easy to implement with minimal training and support.

Implications and future directions

Timely assessment and intervention is critical to ensure disadvantaged children are identified, and all children have the opportunity to thrive. This could be vital in response to development delays and reduced physical activity attributed to the Covid-19 pandemic. FUNMOVES has shown promise for use within this context, however, an RCT is planned to evaluate efficacy of the full programme further.

A stakeholder engagement process to co-design a study protocol for children with complex neurodisabilities and their families

Mrs Rachel Knight Lozano* - University of Plymouth / Torbay and South Devon NHS Foundation Trust
Dr Harriet Shannon - UCL Great Ormond Street Institute of Child Health
Professor Christopher Morris - Peninsula Childhood Disability Research Unit (PenCRU) University of Exeter
Mrs. Rachel Rapson - University of Plymouth / Torbay and South Devon NHS Foundation Trust
Professor Jonathan Marsden - University of Plymouth

**Corresponding author: rachel.lozano@nhs.net*

As part of the submission, I would like to emphasise the theme Optimising Health: R. Lozano.

There are multiple challenges to designing and implementing research for children with severe learning and physical disability. Engagement of stakeholders can support researchers in overcoming these challenges, enabling the co-design of meaningful, appropriate research that can inform optimal care and practice in this population.

Background

Respiratory illness is the most common reason for children with neurodisability to attend hospital, affecting their quality of life and accruing significant healthcare costs. It remains the primary cause of death in this population[1]. Exercise plays an important role in the prevention and management of respiratory illness in children with neurodisability[2]. However, limited studies have focused on individuals with severe disabilities[3], who are at higher risk of respiratory illness. Population heterogeneity, accessible exercise-based interventions and limited measurements of respiratory health pose a challenge to both researchers and clinicians working within this group of children. Stakeholders can offer their own insights and expertise to assist researchers in understanding these challenges, leading to the co-design of a meaningful and accessible study for families and children with complex neurodisability.

Objective

Stakeholder engagement aimed to co-design and refine:

- Study design and procedures
- Accessible and safe exercise-based intervention
- Appropriate methods of measurement
- Transparent and sensitive public facing study information

Methodology

Stakeholder engagement was sought from two groups. Firstly, expert clinicians were identified locally through the South West (UK) Respiratory Physiotherapy Network and nationally, from the Association of Paediatric Chartered Physiotherapists' Respiratory Committee. Secondly, caregivers with experience looking after a child or young person with a neurodisability and respiratory issues, volunteered via the PenCRU Family Faculty, UK.

Results

Clinician stakeholder engagement successfully informed the co-development of a single case study design to explore the use of rebound therapy for respiratory health. Rebound therapy was selected as a popular, highly accessible form of exercise for children with moderate to severe disabilities. Following in-depth exploration of available objective respiratory measures, stakeholders recommended a composite of outcome measures for quality of life, physical function and chest health. This initiated further collaboration with the technology industry to explore a novel medical device, OptiBreathe.

Caregiver stakeholder engagement informed substantial amendments to the eligibility criteria to clarify the descriptions of respiratory issues experienced by a child with complex neurodisability. They also amended study contact methods from a digital app to text, to promote inclusivity and reduce perceived burden for parents and families. The group helped to select quality of life measures that addressed relevant questions for a child with complex neurodisability and co-developed the necessary information sheets and supporting documentation.

Conclusions / Implications for practice

Stakeholder engagement successfully informed the development of a meaningful, accessible single case study entitled: rebound for respiratory in children and young people with neurodisabilities.

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Improving the Pathway for Children with Musculoskeletal (MSK) conditions referred from Primary Care - A Service Development

Heather Farish*

**Corresponding author: heather.farish@ggc.scot.nhs.uk*

Background

Musculoskeletal (MSK) concerns are a common reason for children and young people (CYP) to attend their GP[1]. Many of these patients are subsequently referred to specialist paediatric services for ongoing review and management. Anecdotally, within the author's health board, variability to which health profession a CYP is referred to (orthopaedic service or physiotherapy) was identified. This variation appeared to be dependent on GP preference rather than the condition with which the patient was presenting. This inconsistent approach resulted in differing waiting times, with CYP referred to orthopaedics waiting up to 24 weeks and CYP referred directly to physiotherapy being assessed and managed within 4 weeks.

Objective

Our aim was to develop and evaluate a pathway that appropriately identifies CYP referred by their GP with a MSK concern for physiotherapy management, thus bypassing the need for orthopaedic review.

Methodology

A pathway was developed in collaboration with physiotherapy and orthopaedic services at the Royal Hospital for Children, Glasgow to triage suitable CYP to physiotherapy services. With additional funding the pathway was piloted for 3 months initially and further reviewed at 12 months. Primary outcome measures were, number of patients redirected to physiotherapy and number referred to orthopaedics following physiotherapy review. A secondary outcome measure was orthopaedic waiting list times.

Ethics / R & D approval needed – not required – service development

Results

Over the 12 month evaluation period, 591 patients were redirected to physiotherapy and only 37 (6%) referred for on for a consultant review. In addition, orthopaedic waiting times were reduced from 24 weeks to 6 weeks. It is thought the implementation of this pathway supported the reduction of this waiting time.

Conclusions / Implications for practice

This service development demonstrates that many CYP presenting to GP with MSK concerns can be effectively managed by physiotherapy without the need for orthopaedic review, thus better utilising healthcare resources. It is estimated the pathway saves ~£125 per CYP by reducing consultant and radiology costs[2]. Furthermore, this initiative provides a more efficient, patient centred service with fast access which supports both health board[3] and national[4] quality strategies.
Permanent funding has now been allocated within the physiotherapy service to sustain the pathway long-term. Potentially, models of care looking at paediatric physiotherapy first contact practitioners could be explored.

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Provision of effective 24-hour postural care through utilisation of a sustainable sleep system resource.

Alexandra Kane*

**Corresponding author: alexandra.kane@ggc.scot.nhs.uk*

Background

Sleep systems are a key component of delivering effective 24hour postural care to protect children and young people from the life limiting consequences of body shape changes. Within NHS Greater Glasgow and Clyde the provision and use of sleep systems was inconsistent across the specialist children's service due to staff knowledge, funding and access to assessment equipment. A service wide equipment resource was established to aid appropriate assessment and ensure sound clinical reasoning prior to selection and purchasing of sleep systems.

Aims/ Objective

Improved consistency and effectiveness of equipment provision across the physiotherapy service and increased access to sleep systems through assessment and re-cycled stock.
Increased knowledge and skills base of physiotherapists across the service in relation to sleep system availability, assessment and provision.
Physiotherapist's will have evidence of a successful trial period with a child using a sleep system, within their own home, prior to ordering and NHS funding of sleep system provision.
Overall cost savings attached to sleep system provision due to a reduction of inappropriate prescription and purchasing of sleep systems and related wasted expenditure.
Increased access to sleep systems, maximised postural care opportunities and improved health and well-being outcomes for children and young people across GG&C.

Methodology

An equipment inventory of available stock across multiple sites was completed.
Staff survey completed to establish sleep system knowledge and audit practice.
In collaboration with 4 company representatives, 8 sleep system assessment kits were created without any expenditure as no budget was attached to project.
Specific sleep system training delivered in partnership with company representatives to paediatric physiotherapists.
Partnership working with Equipu Stores Team to establish a robust system for storing, cleaning and transporting sleep system assessment kits timely across GGC.

Results

Established assessment sleep system resource available via Equipu Stores. Access to 8 sleep system assessment kits with cot and single bed sized options available for use in the community to trial prior to purchasing.
Increased staff knowledge and confidence in assessment and prescription of sleep systems with 100% of participants who completed training rating their confidence in sleep system assessment as confident or very confident post training.
Raised awareness of sleep systems and knowledge base of physiotherapists across the service ensuring best outcomes for our children and young people.

Conclusions / Implications for practice

Children and families in NHSGGC now have access to a consistent and clinically reasoned approach to sleep system provision as part of their personal 24hour postural plan.

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Don't Burst the Bubbles: The New Normal
The Outreach Physiotherapy Service at the Scottish Centre for Children with Motor Impairments 2020

Kath Brimlow*
Jenni Coulter
Aida de la Torre
Leah Honahan
Joanna Paterson
Sofia Marini

**Corresponding author: kath@craighalbert.org.uk*

Background

The Scottish Centre for Children with Motor Impairments (SCCMI) provides outreach programmes in the form of small groups for preschool and school age children with neurodevelopmental problems through-out the school year. In 2020, due to COVID 19 "lockdowns" and restrictions, all these groups were cancelled, and, at this time, NHS physiotherapy services ceased to operate or were reduced.

The Scottish Government and the Chartered Society of Physiotherapy (CSP) both recognised the importance for continuing support and Rehabilitation for children with complex additional support needs. (Ref 1 and 2)

Aim

To evaluate family engagement in an alternative COVID secure outreach programme for children with complex needs during the UK pandemic April – December 2020.

Methodology

Between April – June 2020, families were contacted via telephone or email and offered a COVID secure outreach programme in the form of either 6 weekly:
Remote physiotherapy sessions
Face to face sessions within the centre
Family wellbeing swims
Each child saw the same physiotherapist and support worker to maintain bubbles. Where possible treatment sessions were held outside.

In the new Autumn term, the above outreach service continued from September to December 2020. We had a few parental requests for a longer time between appointments (fortnightly), so parents had time to focus on home treatment programmes.

Results

We received "excellent" in the Talking Mats 5 questions PCM (Ref 1,2). Parents and children indicated that they preferred group working and missed meeting other children and families in similar circumstances.

The face-to-face sessions proved the most popular choice of parents with 70% (17/24 children) attending SCCMI. Most of these children 16/17 children also had family "wellbeing swims". Just 29% (7/24 children) chose to have remote sessions. Most of these children lived more than an hour's travel time from SCCMI.

Conclusions

During the COVID 19 pandemic, SCCMI continued to support families of children with complex needs, in line with The Scottish Government and the Chartered Society of Physiotherapy (CSP).

The service successfully engaged two thirds of families, offering a variety of COVID secure novel programmes. Parent barriers to engaging were reported later in the pandemic, attributed to returning to work, and family commitments. Parents feedback highlighted the loss of group interaction during COVID 19 and suggested engaging nursery staff in the programme as well as parents. The GAS demonstrated programme success but was felt to be time consuming, promoting the need to explore the shortened 3 Milestones GAS Goal (Ref 5)

Ethics

SCCMI is an independent grant-maintained school and Education and Therapy Centre.
Ethics approval was granted by the SCCMI Board.

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The Impact of a new Rapid Response Children's Respiratory Physiotherapy Service for Children with Long Term Complex Physical Disabilities: Results of 12-month pilot

Katie Clements* BSc (Hons) C SP RP - Professional Advisor Children's Physiotherapy
Jason Kettle BSc (Hons) C SP RP - Specialist Paediatric Respiratory Physiotherapist - Lincolnshire Community Health Services

**Corresponding author : katie.clements1@nhs.net*

Background

Severely disabled children are at increased risk of hospitalisation as a result of chest infections. Providing specialist respiratory care to these children may help to reduce morbidity, mortality and rates of hospitalisation.

Objective

The Children's Rapid Response Respiratory Service conducted a 12-month pilot to assess the impact of providing such care.
The Children's Rapid Response Respiratory Service provides early specialist assessment and rapid treatment within 24 hours of onset of respiratory concern in the community as well as provision of a preventative chest care plan, regular review and parent/carer training throughout the year.

Methodology

127 children in Lincolnshire were identified as eligible for the service. Data was gathered regarding pre-service hospital admissions and admissions during the pilot; rapid response interventions were graded based on their impact (avoidance of hospital admission/A+E or urgent G.P./routine G.P. appointments); potential impact of preventative intervention was calculated; parent/carer satisfaction questionnaires were distributed and school attendance rates were compared pre and post pilot.

Results

Hospital admissions were reduced during the pilot from 123 to 25 (80% reduction). Total cost of admissions, Out of Hour and A+E appointments reduced by 56.08%. As a direct result of service provision 64 hospital admissions, 64 ambulance callouts, 158 A+E/urgent G.P. appointments and 165 routine G.P. appointments were avoided resulting in a total cost saving of £239,688.32. Preventative intervention was calculated to have saved £636,801.30. Of the 127 children, 96 feedback questionnaires were returned and indicated that 100% of parents felt the service had been critical to keeping their child out of hospital, had a positive impact on their child's and family's life and helped them to be more equipped to manage their child at home. Parents/carers highlighted that their child's respiratory management had improved from 5.1/10 to 9.1/10 with 10 meaning they are 100% confident.

Conclusions / Implications for practice

The pilot's results have evidenced that a home-based rapid response service, that is both proactive and reactive at a time when the child is unwell, has significantly improved the respiratory management of this cohort of children living in Lincolnshire. Evidence from this first year proves that this service is financially viable as results of the first year indicate an 80% reduction in hospital admissions with financial savings across the health system in Lincolnshire in the region of £600,000. Therefore, when you consider the cost of this new service being £190,000, future investments should clearly be made into high quality proactive home first services like rapid response.

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Examining the construct validity of the fatigue and pain domains of a new hypermobility symptom tool - The Spider

Eudora Tang* - National University Hospital, Singapore, UCL Great Ormond Street Institute of Child Health
Inge de Wandele - Centre for Medical Genetics, University of Ghent
Hanadi Kazkaz - Hypermobility Unit, University College London Hospital
Jane Simmonds - National University Hospital, Singapore, UCL Great Ormond Street Institute of Child Health,
London Hypermobility Unit, Central Health Physiotherapy, London, UK

**Corresponding author: eudora_tang@nuhs.edu.sg*

Background

Pain and joint instability are common symptoms of hypermobility related disorders. However, the Hypermobility Spectrum Disorder/hypermobile Ehlers-Danlos Syndrome (HSD/hEDS) phenotype extends to non-musculoskeletal symptoms including fatigue, dysautonomia, urinary incontinence and mental health (Castori et al., 2017). These symptoms develop in childhood and can significantly impact quality of life. To improve patient care, 'The Spider' assessment tool has been developed to evaluate the impact of these symptoms to help direct and monitor care The Spider comprises 25 questions within 8 domains. Initial face and content validity has been established and now further psychometric evaluation is required to ensure the tool is robust (de Wandele et al., 2020).

Aim/s and/or Objective/s

This study evaluated the construct validity of the pain and fatigue domains of The Spider in adolescents.

Methodology

Ethical approval was obtained by UCL REC (17331/001)

An online questionnaire was distributed to adolescents aged 12-18 years with and without a diagnosis of HSD/hEDS. Convergent validity was investigated by correlating The Spider pain and fatigue domain questions with the Paediatric Quality of Life Inventory Multidimensional Fatigue Scale (MFS) and Child Activity Limitations Interview-9 (CALI-9) and Numeric Pain Rating Scale (NPRS). Known-group validity was examined by comparing The Spider's pain and fatigue domain scores between adolescents with HSD/hEDS and healthy participants.

Results

A total of 272 participants completed the questionnaire. 232 diagnosed with HSD/hEDS and 40 non hypermobile healthy participants. Convergent validity was demonstrated by strong negative correlations between The Spider's fatigue domain and MFS ($r=-0.72$, $p<0.0001$), strong positive correlations between The Spider's pain domain and CALI-9 ($r=0.71$, $p<0.0001$), and moderate positive correlations with the NPRS ($r=0.51$, $p<0.0001$). Known-group validity was established by significant differences ($p<0.001$) of The Spider's scores between those with HSD/hEDS and healthy adolescents.

Conclusions / Implications for practice

These results reflect strong convergent and known-group validity for the fatigue and pain domains of The Spider in adolescents with HSD/hEDS. The Spider guides multidisciplinary treatment strategies that are tailored to the patient's symptom profile. This is an important step in validating this tool. Further psychometric testing on the other 6 domains is in process.

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Parent experience of a physiotherapy-led Ponseti service

Jenna Ingram* - Somerset NHS Foundation Trust and UCL Great Ormond Street Institute of Child Health
Jane Simmonds - UCL Great Ormond Street Institute of Child Health
**Corresponding author: jenna.ingram@Somersetft.nhs.uk*

Background

Clubfoot or congenital talipes equinovarus (CTEV) is one of the most common paediatric deformities (Pavone et al., 2018). The Ponseti technique is considered the gold standard method for treatment (Zhao et al., 2014). Patient experience is identified as a key measure of quality of care (NICE 2012). It allows for the views of parents to drive improvements (Kingsley and Patel 2017).

Objective

To undertake a service evaluation of the physiotherapy led Ponseti service at Somerset NHS Foundation Trust in the form of a parent experience measure. This data will provide a benchmark for the service and provide recommendations for service improvement, to improve the patient experience and optimise care.

Methodology

A parent experience measure was designed and completed using Plan-Do-Study-Act methodology (ACT Academy 2017). Approval was gained for a service evaluation from the Trauma and Orthopaedics Directorate and Information Governance Team. The measure was derived from a literature review, including both quantitative and qualitative questions over 3 themes:

1. Facilities and service experience
2. Communication
3. Treatment and support

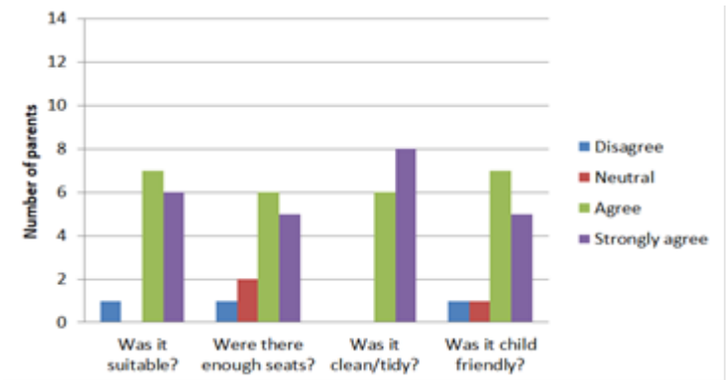
23 parents who currently attended the Ponseti clinic were asked to complete the questionnaire via email or post.

Results

The questionnaire response rate was 61% (14/23 parents).

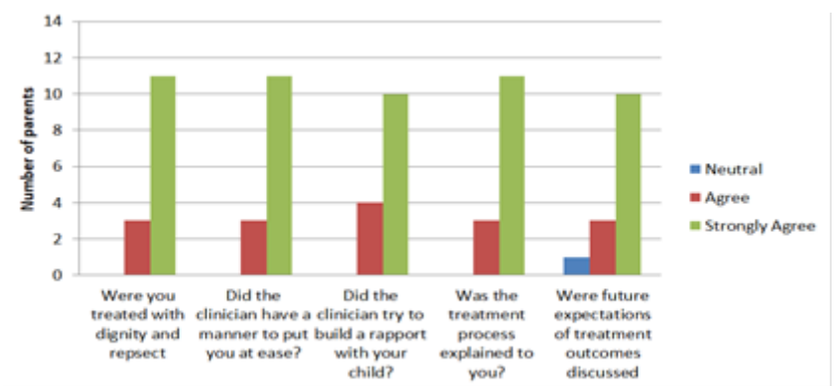
1. Facilities and service experience:

Parents found the overall experience excellent or good (93%) with 7% rating it as average. 29% were reviewed antenatally and rated that experience as excellent or good. Experience of the clinic room facilities can be seen in figure below:



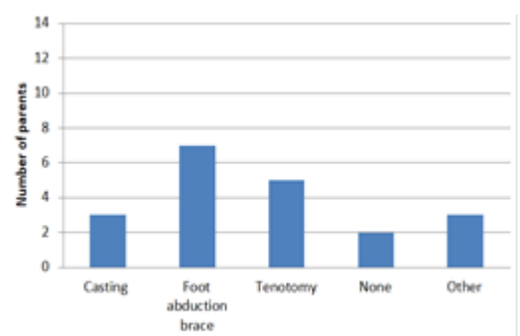
2. Communication:

Communication during the appointment can be seen in the figure below:

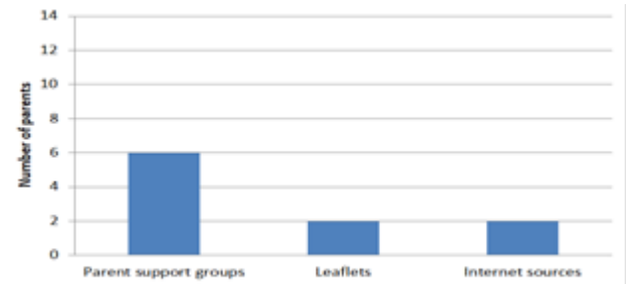


3. Treatment:

50% (n=7) would prefer face-to-face appointments, 43% (n=6) mixture of appointments (virtual and face-to-face). Most challenging aspects of treatment can be seen below:



93% (n=13) stated good or excellent support from the clinician. Parents felt support could have been enhanced by:



Qualitative comments included the need for a more consistent clinic room, improving other professionals' knowledge of clubfoot, parental anxiety and suggestions for further support in a group or leaflet. The positive support from clinic staff was acknowledged.

Conclusions / Implications for practice

The findings showed a positive experience with communication, support from the clinician and overall experience. Areas identified for improvement included the clinic room, additional sources and enhancing other professionals' knowledge to provide support. Limitations of the study include small cohort and questionnaire non-response bias. Results can be used at a local level to improve the patient experience and quality of care. The parent experience measure could be used for audit purposes in the future.

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Assessing the validity of the anxiety and depression domains of the Spider, a new screening tool for adolescents with hypermobile spectrum disorder (HSD) and hypermobile Ehlers Danlos Syndrome (hEDS).

Ellen Ewer*, Jane Simmonds

*Corresponding author: ellenewer@gmail.com

Background

Symptoms of hypermobile Ehlers Danlos Syndrome (hEDS) and Hypermobility Spectrum Disorders (HSD) often present childhood and persist into adult life (Tinkle et al., 2017). Although collectively characterised by increased joint flexibility, hEDS/HSD symptoms often extend beyond the musculoskeletal system. Further insight into the profile of symptoms of hEDS/HSD during clinical assessment is required to offer holistic and targeted care. A new screening tool - The Spider - has been created to assess impact of symptoms in individuals with hEDS/HSD and guide referral (de Wandele et al 2020). This questionnaire assesses the impact of neuromusculoskeletal, pain, fatigue, cardiac dysautonomia, urogenital, gastrointestinal, anxiety and depression symptoms on an individual with hEDS/HSD. To ensure the Spider is robust, all domains of this outcome measure require validation. Validation of the pain and fatigue domains has shown promising results in the adolescent population, demonstrating acceptable convergent and known group validity (Tang et al., 2020).

Objective

To examine the convergent validity and known group validity of The Spider anxiety and depression domains compared with RCADS-25 in adolescents with and without HSD/ hEDS.

Methodology

Ethical approval was gained from the UCL Ethics Committee (project ID: 19629/001). Participants were recruited through three patient charity groups (Ehlers Danlos Support UK, Ehlers Danlos society, HMSA) and through the Central Health Physiotherapy Hypermobility Unit. Participants between 12-18 years old with and without hEDS/HSD or symptomatic generalised joint hypermobility (GJH) were asked to participate. Participants answered the Spider anxiety and depression domain questions and the RCADS-25, a previously validated outcome measure. The questionnaires were completed anonymously via an online survey hosted by REDcap.

Results

104 participants completed the questionnaires, 180 with HSD/hEDS, and 20 healthy controls. Convergent validity was demonstrated through strong positive correlations between the depression domain scores of the Spider and the RCADS-25 ($r=0.853$, $p=<0.001$) and moderate positive correlations between the anxiety domains of the Spider and RCADS-25 ($r=0.676$, $p=<0.001$). The known group validity assessment was significant ($p<0.001$), demonstrating the Spider's ability to differentiate between those with and without HSD/hEDS.

Conclusion / Implications for practice

This validation study demonstrates that there is acceptable convergent and known group validity of the Spider anxiety and depression domains. These Spider domains demonstrate robustness for use in clinical practise to identify the presence and impact of anxiety and depression in those with HSD/hEDS, which would facilitate onward referral and management. Future research will validate the four remaining domains before publishing for international use.

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An Investigation of Physiotherapists' Experiences of The Barriers and Facilitators of Implementation of a Virtual Model of Practice-Based Learning Placement for Physiotherapy Students

Lorna Sinclair*

**Corresponding author: lorna.sinclair2@ggc.scot.nhs.uk*

Background

Coronavirus Disease 2019 (COVID-19) resulted in temporary redeployment of Allied Health Professionals (AHPs) into acute sectors with strict directives to minimise patient contact. Cancellation of student placements resulted, leaving a deficit of placement hours. To address this, NHSGGC Specialist Children's Services Physiotherapy Department organised a 4-week virtual model of practice-based learning placement for 4 pre-registration MSc Physiotherapy students from Glasgow Caledonian University. This approach combined a variety of opportunities delivered virtually including e-learning, peer-assisted learning (PAL), role play, virtual consultations with patients and project based opportunities. This placement, undertaken within the context of paediatric neuro-rehabilitation, was designed in response to restrictions placed upon many Physiotherapy services during the COVID-19 pandemic. Whilst many studies advocate the benefits of virtual learning for students, there is no evidence regards the experiences of physiotherapists delivering virtual PrBL.

Aim

The aim of this study was to explore physiotherapists' experiences of the barriers and facilitators of implementation of a virtual model of practice-based learning (PrBL) placement for physiotherapy students.

Methodology

All physiotherapists involved in design, delivery and/or direct supervision of students on this placement, were invited to take part (n=9). Eight physiotherapists consented to participate through individual semi-structured interviews. Research questions were designed to explore participants' experiences of barriers and facilitators of this novel approach. Data was recorded, transcribed and thematically coded using the Theoretical Domains Framework (TDF).

Results

Participants reported significantly detailed barriers and facilitators related to 5 of the 14 TDF domains (Emotion, Beliefs about Capabilities, Skills, Environmental Context and Resources, and Behaviour Regulation). Emerging sub-themes, reflecting the most widely reported barriers and facilitators, were explored included peer assisted learning (e.g. participants reported many benefits despite little knowledge and skill of PAL models), virtual tutorials (e.g. peer support and experience of attending webinars helped alleviate anxieties relating to issues

with technology) and peer support for clinicians (e.g. weekly meetings throughout the placement helped reduce ambiguity around tutorial content and facilitated shared scoring of the student placement).

Conclusion

Although Physiotherapists undertaking this novel approach acknowledged some barriers to delivery of a fully virtual PrBL placement, they also proposed many behavioural strategies to counteract those challenges, facilitate successful outcomes and highlighted beneficial elements of virtual PrBL. It is recognised that the impact of COVID-19 will require AHPs to explore and embrace less traditional approaches to PrBL in order to provide effective sustainable means of placement provision recovery, with increased capacity to support HEIs and workforce demands.