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PHYSIOTHERAPY
RESEARCH SOCIETY

THE 38TH SCIENTIFIC MEETING OF THE
PHYSIOTHERAPY RESEARCH SOCIETY

FRIDAY 26TH APRIL 2019





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FRIDAY 26TH APRIL 2019

LSBU Southwark Campus Map



- | | |
|---|---|
| 01 Borough Road | 11 Foundation Campus |
| 02 Tower Block | 12 Student Centre & Students Union |
| 03 Metal Block | 13 Keyworth Centre |
| 04 Joseph Lancaster | 14 K2 |
| 05 Extension Block | 15 Learning Resources Centre |
| 06 Faraday Wing | 16 Caxton House |
| 07 Perry Library | 17 McLaren House |
| 08 Admissions & Recruitment Centre | 18 The Clarence Centre for Enterprise & Innovation |
| 09 Technopark | 19 Academy of Sport |
| 10 London Road | |



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EST 1892

Physiotherapy Research Society (PRS) 2019 Conference

Research Innovation: From Ideas to Impact

0815- Registration, Networking and Coffee

0845

0845- Opening Introductions

0900

0900- Keynote Speaker 1

1000

Prof. Ann Moore

“On the road of experience - researching and research implementation “

1000- Platform presentation session 1

1100

Anju Jaggi

“Our Pathway to a successful non medical research strategy – A culture shift five years on”

Anthony Gilbert

“What is the Effect of Communication Technology on the work of being a patient in orthopaedics? A systematic-review”

Rachel Tucker

“The effect of a five-week hippotherapy programme on gait in a child with Angelman’s Syndrome; a case study using the Wee Glasgow Gait Index (WeeGGI)”

Rebecca Rayner

“HINTS' at the Front-door: An Acute Stroke Service Quality Improvement Project”



**1100-
1130**

Morning Break

**1130-
1200**

Rapid 5s

Sam McIver

“An exploratory pilot study into Undergraduate Physiotherapy students’ perceptions of working with patients, with mental illness, and working within the mental health sector of health care”

Nasreen Sau

“Clinicians’ views on uptake of technology in healthcare”

Gemma Kelly

“Rhythmic Auditory Stimulation in Gait Rehabilitation for Children and Youth Following Acquired Brain Injury”

Alison Aires

“Mobilization and tactile (sensory) stimulation (MTS) for the foot post stroke: opinions and perceptions of experienced therapists”

**1200-
1220**

Physiotherapy Research Society AGM



**1220-
1315**

Lunch, networking and poster viewing



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cahpr
Council for
Allied Health
Professions Research

IJTR
International Journal of Therapy & Rehabilitation

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1315-
1415

Platform presentation session 2

Deepti Chugh

“Use of Quality Function Measure to evaluate changes in the quality of movement in children with Cerebral Palsy after Selective Dorsal Rhizotomy”

Gareth Stephens

“A survey of physiotherapy practice in the United Kingdom for patients with Greater Trochanteric Pain Syndrome”

Wafa Alahmari

“Exploring the views of stroke survivors around Post stroke fatigue in Saudi Arabia: a qualitative interview study”

Dr. Bradley Neal

“Predictors of outcome following anterior cruciate ligament reconstruction: A cohort study in UK sports medicine”

1415-
1515

Key Note Speaker 2

Prof. Mick Thacker

1515-
1545

Afternoon Break



1545-
1645

Platform presentation session 3

Laura Hemmings

“An interpretive phenomenological analysis of Physiotherapy in mental health: Exploring barriers and facilitators to care”

Tom Walker

“Screening of the cervical spine in sub-acromial shoulder pain: A systematic review”

Dr. Bradley Neal

“Is two-dimensional video a valid and reliable measure of three-dimensional kinematics in runners with patellofemoral pain?”

1645-
1700

Prize Distribution and Close



Posters

Julie Bieles

“Dorsiflexion but not plantarflexion force declines at lower foot skin temperatures”

Dr. Simon Lack

“Pressure pain thresholds in adults with patellofemoral pain and patellofemoral joint osteoarthritis: a case-control study”

Rachel Tucker

“The impact of austerity on patient care and professionalism- a qualitative exploration into physiotherapy in the NHS”

Sam McIver

“An exploratory pilot study into Undergraduate Physiotherapy students’ perceptions of working with patients, with mental illness, and working within the mental health sector of health care”

Nasreen Sau

“Clinicians’ views on uptake of technology in healthcare”

Gemma Kelly

“Rhythmic Auditory Stimulation in Gait Rehabilitation for Children and Youth Following Acquired Brain Injury”

Aries AM, Cooke LA, Hunter SM

Mobilization and tactile (sensory) stimulation (MTS) for the foot post stroke: opinions and perceptions of experienced therapists



Prof. Mick Thacker

Mick Qualified as a physiotherapist from West Middlesex University Hospital School of physiotherapy and worked as a specialist musculoskeletal physiotherapist at several London teaching hospitals. He undertook and passed with distinction advanced training in manual therapy before completing a Master's degree at University College London where he conducted basic science research into the autonomic nervous system and nociceptive processing.

Mick completed his PhD at King's College London (KCL), his thesis focused on neuro-immune interactions and pain; more specifically the role of the chemokine CCL2 as a key mediator of neuropathic pain. Whilst this research was entirely pre-clinical it led to the development of several compounds currently in development for the management of human neuropathic pain. His post-doctoral research involved neuroimaging of human pain and pharmacological manipulation. He held lecturing posts at Brunel University and St Georges Medical School before moving to KCL. He joined LSBU in April 2017.

Mick received a fellowship of the Chartered Society of Physiotherapy in November 2011, for his outstanding contribution to the understanding and education of pain science within the profession and promotion of the profession within the wider scientific community.

Mick's current research is split between three main areas; neuroimaging of pain states (MRC funded); Quantitative Sensory Testing in cervical radiculopathy with Mike Mansfield and Predictive Processing and Pain with the eminent philosophy Prof Andy Clark. Mick has performed both pre-clinical and clinical research including both quantitative and qualitative methodologies and held Fellowships with world-leading research groups across several disciplines. He has been involved in the procurement of over £6.5million in grant monies.

Mick's talk at PRS 2019 will focus on the historical and on-going dominance of paradigms within physiotherapy theory, research and practice. He will draw upon examples from several specialisms within the profession to highlight the "power" of paradigms to control and limit creative thinking.

Mick will define exactly what a paradigm is and detail their role in scientific thinking. He will further discuss the concept of 'normal science' as it pertains to physiotherapy research and practice and show how this approach limits scientific thinking, discovery and dissemination. Mick will offer the audience ideas and suggestions for how they might escape the eminence grise of the powerful paradigm and how to influence paradigm shifts within their own field of research and practice.

Prof. Ann Moore

Professor Ann Moore retired from the University of Brighton at the end of August 2015 having been Head of the Centre for Health Research, School of Health Sciences since March 2014 and previously Director of the Clinical Research Centre for Health professions from 1998 to 2014. She is a physiotherapist by background and a specialist in musculoskeletal physiotherapy.

Her work over the last 20 years has focused on researching into musculoskeletal conditions and on building research capacity within the physiotherapy profession and more latterly, more generally, in the Allied Health Professions since 2012. In the Queen's Birthday Honours 2016 she was awarded a CBE in recognition of her services to physiotherapy. Ann is currently Director of the Council for Allied Health Professions Research (CAHPR) and Editor in Chief of Manual Therapy an International Journal of Musculoskeletal Science and Practice.

Prof. Moore's interests lie in the following: musculoskeletal physiotherapy; self-management strategies, the patient experience, evidence-based practice models and oral histories of manual therapists. Prof. Moore is also keen to develop further art and health projects in the field of musculoskeletal conditions. Prof. Moore's interests lie in the following: musculoskeletal physiotherapy; self-management strategies, the patient experience, evidence-based practice models and oral histories of manual therapists. Prof. Moore is also keen to develop further art and health projects in the field of musculoskeletal conditions.



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FRIDAY 26TH APRIL 2019

Abstracts

from

#PRS2019



OUR PATHWAY TO A SUCCESSFUL NON- MEDICAL RESEARCH STRATEGY - A CULTURE SHIFT FIVE YEARS ON

Anju Jaggi | Anthony Gilbert | Mindy Cairns | Rachel Dalton | Royal National Orthopaedic Hospital | Royal National Orthopaedic Hospital | University of Hertfordshire, Department of Allied Health Professions and Midwifery, Hertfordshire, United Kingdom | Royal National Orthopaedic Hospital

Background: There is increasing evidence that research-active healthcare provider organisations provide better quality care, increased treatment options and improved clinical outcomes.

Purpose: Delivering evidence based clinical care and a high academic profile was identified as a key strategic objective at a tertiary orthopaedic hospital in the UK.

Methods: In 2013 the organisation appointed a Director of Therapies and a Consultant physiotherapist with protected time to develop a therapies research strategy. Focus groups were held across the directorate (140 staff across all pay bands and grades including non- professional staff) to identify current research activity, barriers and enablers to developing a research active department. Data were analysed thematically and findings used to inform a five year research strategy.

Results: Five key actions were identified: 1) Identifying research programmes in clinical teams. 2) Research as a key team objective 3) Provide appropriate research training and education 4) Identify talent and research champions 5) Develop external collaborations with appropriate academic and commercial partners. In 2014, a commercial grant was successful and a therapies research co-ordinator was appointed to support staff training and research processes. In 2016 a 2 year grant received from the hospital charity supported this ongoing role along-side funding with a higher education institute to provide methodological support, writing skills and grant applications. To date this has resulted in six peer reviewed articles and further external funding. Novice researchers have been supported resulting in a NIHR PhD fellowship and two NIHR internships to build capability. Clinical teams have identified research programs to maximise resources and time. 41% of registered projects were submitted to national/international scientific conferences compared to only 16% in 2014.

Conclusion(s): The key to a successful research strategy in a clinical setting requires clear strategic support, leadership, talent spotting and training. However dedicated resources and investment is required for delivery of projects to publications.

What is the Effect of Communication Technology on the work of being a patient in orthopaedics? A systematic-review

Anthony Gilbert | Anju Jaggi | Jeremy Jones | Carl May | Royal National Orthopaedic Hospital | Royal National Orthopaedic Hospital | University of Southampton | London School of Hygiene and Tropical Medicine

Background: Physiotherapy consultations in an orthopaedic setting often require visualisation and a 'hands on' approach. There has been an increasing number of research studies exploring the effectiveness and acceptability of telephone and videoconferencing consultations within orthopaedics. Much of the drive behind this change has been to improve access to care and to link the clinic to the home environment. The introduction of communication technology consultations requires a shift in patient workload, which may impact on patient experience of accessing healthcare and managing their condition.

Purpose: The purpose of this research is to systematically review qualitative papers reporting communication technology consultations (phone and videoconference) in orthopaedics. Attention will be focussed towards the effect of communication technology on the workload of being a patient.

Methods: The protocol for the systematic review was registered and is available to view on the PROSPERO database (CRD42018100896). MEDLINE, AMED, CINAHL, PsychINFO, SCOPUS databases were independently searched, utilising the search strategy, by two researchers to identify qualitative papers reporting communication technology use in an orthopaedics setting. Data from Introduction, Results and Discussion sections were extracted and an attribution of statements formulated. All statements were thematically analysed into families of themes surrounding patient workload.

Results: The search identified 1542 papers that were included for review and 8 full texts met the inclusion criteria and were included for analysis. Two studies reported telephone consultations and 6 reported real time videoconferencing consultations. Six families of themes were identified: 1) Skills 2) Clinical Interactions 3) Environment 4) Processes 5) Impact on Patient & 6) Preferences.

Conclusions: Literature on the use of communication technologies in healthcare, such as videoconferencing and telephone consultations, is growing in orthopaedics. Qualitative papers highlight the benefits and challenges of communication technology consultations. This review synthesises the change in workload patient's face when using these technologies. These altered demands of communication technology consultations affect patient's experience of accessing healthcare. Consideration of these factors and tailored individualised support for patients may enhance patient experience and increase suitability of communication technology consultations for orthopaedic patients.

The effect of a five-week hippotherapy programme on gait in a child with Angelman's Syndrome; a case study using the Wee Glasgow Gait Index (WeeGGI).

Rachael Tucker | Robert Gordon University Aberdeen; Lincolnshire Community Health Services NHS Trust

Background: Hippotherapy is a treatment modality performed by a qualified physical, occupational or speech therapist, using equine movement to gain therapeutic outcome; hippotherapy has been shown to improve gross motor development, tone, spasticity, balance, coordination, range of movement and muscle length. Angelman Syndrome (AS) is a rare genetic condition which causes ataxia, poor coordination and balance, reduced mobility, high tone and learning difficulties. Research into hippotherapy in AS is sparse; therefore, this case study aimed to investigate the effect of a five-week hippotherapy intervention on gait in a child with AS, using the Wee Glasgow Gait Index (WeeGGI) Measure.

Methods: One participant was recruited to the case study using convenience sampling. The equine was selected based on their conformation, temperament and suitability for hippotherapy. A five-week programme of hippotherapy was delivered using one equine, one therapist, a leader and two side walkers. Each session ranged between 30 and 40 minutes. A full physiotherapy assessment and the WeeGGI outcome measure were completed at pre and post-intervention.

Results: On the WeeGGI measure, a reduction of five points was achieved on the left leg and a reduction of two points was achieved for the right leg. Furthermore, an improvement in range of movement and muscle length was observed into left hip abduction, bilateral hamstrings and bilateral gastrocnemius and soleus. In addition to these results, the child was noted to have improved balance reactions, concentration, core strength and acceptance of base of support towards the end of the intervention period.

Conclusion and implications: This five week hippotherapy programme demonstrated improvement in gait pattern, range of movement and muscle length in a child with AS. Additionally, the child was noted to improve in non-gait specific domains, such as balance and independent adjustment of position whilst mounted. These findings add to the evidence base for the use of hippotherapy in rarer genetic conditions and suggest that hippotherapy is an effective and feasible treatment modality for this population. However, this was a small sample size and therefore it would be beneficial for further research to be carried out on a larger scale in order to generalise these findings to the wider population.

'HINTS' at the Front-door: An Acute Stroke Service Quality Improvement Project.

Rebecca Rayner | Dr Chit Hmu | Norfolk and Norwich Univeristy NHS Trust | Norfolk and Norwich Univeristy NHS Trust

Background: Differential diagnosis of Acute Vertigo Syndrome (AVS) is challenging. In the acute medical setting, it is difficult to ascertain whether a person has definite Peripheral Vestibular pathology or a Posterior Circulation Stroke (POCS). Mis-management of these groups within our service is costly, with regards to correct medical input, MRI scan utilisation and bed use within acute Stroke services and the hospital setting. Research has demonstrated that the 'HINTS' test is efficacious, specific and sensitive in non-UK countries (Newman-Toker et al., 2009) in determining if acute vertigo patients have dangerous (stroke) or benign (peripheral vestibular) pathology. It is not widely used in the UK. This may be due to well-known themes in implementation evidence such as cultural and clinician factors, as well as the lengthy time it takes to embed research into clinical settings.

Method: We have started exploring, using Plan Do Study Act (PDSA) cycles, if the HINTS test can be successfully utilised in a large acute Stroke service and the quality improvement effects this may have for patients (correct diagnosis, education/management and follow-up), financially to the Trust (efficient use of MRI scanning) and to the Stroke Pathway (effective bed use/acute medical management). Early results in round one of the Quality Improvement plan show that HINTS is a feasible bedside test to complete with 100% accuracy in the patients it was used on within the acute stroke pathway. This involved one Stroke Consultant and the patients diagnosis with HINTS was assessed against routine follow-up MRI as appropriate. HINTS training has now been provided to all the Stroke Consultant and Registrar team, A&E Registrars and A&E Advanced Clinical Practitioners, to Senior Physiotherapists in the acute Stroke pathway and to the Stroke Alert nurses. Data gathering has commenced for round two, focusing further on bed utilisation effects, as well as consideration of staff satisfaction with HINTS, and development of a recommended pathway for acute vertigo syndrome patients.

Newman-Toker, D.E, Kattah, J.C., Talkad, A.V., Wang, D.Z. and Hsish, Y.H. (2009) HINTS to diagnose stroke in the acute vestibular syndrome: three-step bedside oculomotor examination more sensitive than early MRI diffusion-weighted imaging. *Stroke*. 40:3504–3510

Use of Quality Function Measure to evaluate changes in the quality of movement in children with Cerebral Palsy after Selective Dorsal Rhizotomy

Deepti CHUGH | Sally MORGAN | Stephanie CAWKER | Lesley KATCHBURIAN | Lucinda CARR | Kristian AQUILINA
| Celia HARDING | Great Ormond Street Hospital for Children | City University, University of London | Great
Ormond Street Hospital for Children | Great Ormond Street Hospital for Children | Great Ormond Street Hospital
for Children | Great Ormond Street Hospital for Children | City University, University of London

Introduction: Quality of movement is an important component of effective gross motor skills in children with Cerebral Palsy (CP). It has a substantial impact on a child's activity level, function and participation. Currently, there is no objective evidence to show that elimination of spasticity through Selective Dorsal Rhizotomy (SDR) results in an improvement in the quality of movement. This study aimed to evaluate short-term changes in the quality of movements in ambulatory children with CP one year after SDR using the Quality Function Measure (QFM).

Patients and Methods: A retrospective study using a single group repeated measure design was conducted. The study included 48 children (28 male, 20 female); preoperative Gross Motor Function Classification System (GMFCS) levels were II, n=18 and III, n=30. The mean (SD) age at surgery was 7.11(2.33) years. The QFM was administered using the Gross Motor Function Measure (GMFM) videos, to obtain scores for the five QFM attributes: Alignment, Coordination, Dissociated Movements, Stability and Weight-shift.

Results: All five QFM attributes improved significantly ($p < 0.001$) for the whole group and the two GMFCS levels. The mean (Standard Deviation) change in QFM scores ranged from 9.02% (8.61) for Stability to 26.5% (22.06) for Alignment, for the whole sample. Maximal improvement was seen in Alignment.

Conclusion: These results indicate that SDR with subsequent rehabilitation results in an improvement in the quality of movement in children with CP. This study provides clinicians and families with further evidence to support the value of SDR in this population.

A survey of physiotherapy practice in the United Kingdom for patients with Greater Trochanteric Pain Syndrome.

Gareth Stephens | Dr Seth O'Neill | Dr Helen French | Dr Angie Fearon | Dr Alison Grimaldi | Louise O'Connor | Dr Stephanie Woodley | Dr Chris Littlewood | Royal Orthopaedic Hospital NHS Trust | University of Leicester | Royal College of Surgeons in Ireland, School of Physiotherapy, Dublin, Ireland. | University of Canberra, Australia. | University of Queensland, Brisbane, Australia | Royal College of Surgeons in Ireland, School of Physiotherapy, Dublin, Ireland. | University of Otago, New Zealand | Arthritis Research UK Primary Care Centre, Research Institute for Primary Care and Health Sciences and Keele Clinical Trials Unit, Keele University, Staffordshire, UK

Purpose: Greater Trochanteric Pain syndrome (GTPS) is a debilitating condition causing lateral hip pain. It affects 23.5% of women and 8% of men between 50-75 years old. Sufferers report comparable quality of life and functional performance to patients with end stage Osteoarthritis of the hip. Understanding of GTPS remains limited, particularly with regards to optimal management strategies. Hence, the purpose of this cross-sectional survey was to describe current UK physiotherapy practice as a means of informing the development of a physiotherapy intervention for evaluation in future research.

Methods: An online survey was developed and distributed via Twitter, the interactive Chartered Society of Physiotherapy website, Musculoskeletal Association of Chartered Physiotherapists and the professional networks of the authors via email. Responses were collected over a four week period, completing April 2018. The data were analysed descriptively.

Results: A total of 409 surveys were completed, with 382 eligible for use. Nearly all physiotherapists were either somewhat, or very confident diagnosing (97%) and treating (97%) patients with GTPS. The management strategies most frequently used were: education on load management (99%) and self-management strategies (98%). Strengthening exercises (98%) were frequently used and targeted to the hip abductors (94%). Most frequently these exercises were delivered via a home exercise programme (91%) and one-to-one therapy sessions (90%).

Conclusion: The data from this large survey highlight some consistency with regard to the physiotherapy management of GTPS; with the focus of interventions being patient education on load management and self-management strategies, and strengthening exercises targeting the hip abductors.

Exploring the views of stroke survivors around Post stroke fatigue in Saudi Arabia: a qualitative interview study

Wafa Alahmari | Ahmed Alhowimel | Mazyad Alotaibi | Eirini Kontou | Pip Logan | Neil Coulson | 1Princess Nourah Bint Abdulrahman University, College of Health and Rehabilitation Sciences, Riyadh, Saudi Arabia. 2University of Nottingham, Rehabilitation and Ageing, Nottingham, United Kingdom. | 2University of Nottingham, Rehabilitation and Ageing, Nottingham, United Kingdom, 3Prince Sattam Bin Abdulaziz University, Physical Therapy and Rehabilitation Department, Alkharj, Saudi Arabia | 2University of Nottingham, Rehabilitation and Ageing, Nottingham, United Kingdom, 3Prince Sattam Bin Abdulaziz University, Physical Therapy and Rehabilitation Department, Alkharj, Saudi Arabia | 2University of Nottingham, Rehabilitation and Ageing, Nottingham, United Kingdom | 2University of Nottingham, Rehabilitation and Ageing, Nottingham, United Kingdom | 2University of Nottingham, Rehabilitation and Ageing, Nottingham, United Kingdom

Introduction: Among stroke survivors, post-stroke fatigue is highly prevalent ranging from 25% to 85% and has a significant impact on their quality of life. The available literature on PSF is still rudimentary, especially from middle-eastern countries such as Saudi Arabia, which is a country with a complex health care system and diverse population. Aim of this study is to explore the post-stroke survivors' experiences and perceptions of their PSF. To our knowledge, this is the first attempt to understand PSF among stroke- survivors living in Saudi Arabia.

Methods: This was a qualitative study where semi-structured interviews were conducted with stroke-survivors' patients who were diagnosed to have fatigue based on the Fatigue Severity Scale. Eight participants were recruited using a purposive sampling technique for the study. Interviews with the participants were recorded, transcribed verbatim and analysed using inductive thematic analysis. Validity was ensured through data triangulation with participants.

Results: Four male and four female participants, aged between 27 and 65 years (mean 52, SD 14), were interviewed. Their scores on the FSS ranged from 4.5 to 6 (mean 5.3, SD 0.5). On analysing the interview transcripts, 8 over-arching themes were generated: fatigue after stroke; symptomatology of PSF; pre-stroke fatigue levels & lifestyle; stroke-survivors' perspectives of PSF; PSF's impact on daily living; coping with PSF; PSF patients' perception on physiotherapy; type of support from family and health care professional.

Discussion and Conclusion: The results from this study highlights the lack of awareness about fatigue after stroke among stroke survivors. Also, the themes indicate that there is a need to educate stroke patients and their caregivers about PSF and how they should manage it. Based on patients' experiences, physiotherapy seems to be helpful in reducing fatigue symptoms after stroke, but still there is a need to design specific physiotherapy interventions with suitable frequency and intensity to target fatigue after stroke. In summary, PSF has a significant impact on their quality of life concerning social participation and their daily life. Stroke-survivors did not receive enough support from healthcare professionals with respect to PSF, and it is highly essential to train healthcare practitioners to identify and acknowledge PSF appropriately.

PREDICTORS OF OUTCOME FOLLOWING ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: A PROSPECTIVE COHORT STUDY IN UK SPORTS MEDICINE

Bradley Stephen Neal | Stuart Miller | Claire Small | Simon David Lack | Pure Sports Medicine | Queen Mary University of London | Pure Sports Medicine | Pure Sports Medicine

Introduction: following Anterior Cruciate Ligament Reconstruction (ACLR), patients are reported to be at greater risk of re-rupture if they fail to meet structured discharge criteria. This prospective cohort study aimed to provide objective and subjective measures guiding safe return to play (RTP) of amateur athletes following ACLR.

Materials & Methods: primary ACLR patients presenting to Pure Sports Medicine were invited to participate. Successful RTP was determined using the 'patient specific functional scale' (PSFS) at the primary end point (9/12 post-operative), with scores >8 indicating successful outcomes. Secondary data were collected at baseline (KOOS, ACL-QOL), 3/12 (KOOS, ACL-QOL, quadriceps & hamstrings dynamometry), 6/12 (KOOS, ACL-QOL, quadriceps & hamstrings dynamometry, single/triple hop) and 9/12 post-operative (KOOS, ACL-QOL, quadriceps & hamstrings dynamometry, single/triple hop & slalom run). Binary logistic regression was used to determine the association between secondary data and the primary outcome.

Results: 90 participants with ACLR were recruited from March 2017 to June 2018. 87 participants consented to baseline measures. To date, 29 participants have completed full data collection, with 12 participants determined to have a successful outcome. A lower hamstrings:quadriceps ratio in the contralateral limb at 3/12 post-operative (OR 0.005, 95% CI 0.001-0.89, $p=0.045$) and a higher ACL-QOL score at 6/12 post-operative (OR 1.1, 95% CI 0.02-1.20, $p=0.012$) are associated with positive 9/12 post-operative outcomes.

Conclusion: preliminary data analysis indicates that both hamstrings:quadriceps function and participant psychology are associated with positive outcomes post-ACLR.

AN INTERPRETIVE PHENOMENOLOGICAL ANALYSIS OF PHYSIOTHERAPY IN MENTAL HEALTH: EXPLORING BARRIERS AND FACILITATORS TO CARE

Laura Hemmings | Birmingham and Solihull Mental Health Trust and UoB

Introduction: Current literature identifies decreased life expectancy and increased physical health complaints for service users with mental health diagnosis. However, research also highlights increased challenges for this population when accessing physical healthcare services. Physiotherapy is one such service shown to be of benefit for those with co-morbid physical and mental health needs. However, research is currently lacking on experiences and access to Physiotherapy for this population.

This study aimed to explore lived experiences of Physiotherapeutic care for those with co- morbid physical and mental health complaint and identify barriers and facilitators for those attempting to access this service.

Methods: Semi-structured interviews were carried out with service users (n=8) with longstanding physiotherapeutic and severe and enduring psychiatric complaints. Focus groups were completed with Physiotherapists working within the field of mental healthcare. Verbatim transcripts of the interviews and focus groups were analysed using Interpretive Phenomenological Analysis (IPA) in order to obtain in depth insight into participant experiences. The study was designed to enhance quality through use of methodological and investigator triangulation, negative case analysis, reflexivity, secondary coding and a clear audit trail.

Results: Data was analysed systematically following the structure: individual case analysis, emergence of themes, cross case analysis, validation of themes and ideas. This analysis produced five master themes: Communication with healthcare provider [1], holistic care from physiotherapist [2], perceived benefit of physiotherapy [3], healthcare politics and interaction between services [4], patient activation and motivation to comply with Physiotherapy [5]. These factors were seen to be of high importance for patient experience and, when lacking, were identified as barriers to quality Physiotherapeutic care.

Conclusion: Results were found to be consistent with current literature around physical healthcare. This study identifies the need for greater integrated care between physical and mental health services and improved awareness of mental health and use of the bio-psychosocial model within Physiotherapy practice in order to promote holistic care. Results also highlight the need for positive experience of Physiotherapy for those with severe mental illness in order to increase patient activation and motivation to attend and comply with services.

Screening of the cervical spine in sub- acromial shoulder pain: A systematic review

Tom Walker | Connect Health

Background: Sub-acromial shoulder pain is a common clinical presentation with much diagnostic uncertainty. Some of this uncertainty relates to the involvement of the cervical spine as a source or contribution to sub-acromial shoulder pain. Currently, there is no accepted method of screening of the cervical spine in the presence of sub-acromial shoulder pain, which risks patients receiving misguided and/or ineffective interventions.

Objective: To evaluate approaches used to screen the cervical spine in patients with sub- acromial shoulder pain.

Design: Systematic review of randomized controlled trials.

Methods: Electronic searches of PEDro and MEDLINE to December 2016 were conducted. Randomized controlled trials evaluating the effectiveness of interventions within the current scope of physiotherapy comprising of adult patients complaining of sub-acromial shoulder pain were included. Data relating to the method of cervical spine screening were extracted and synthesized categorically.

Results: One hundred and two studies were included. Twenty-six (25.5%) were categorized as “No method of screening undertaken or reported,” 49 (48.0%) were categorized as “Localized cervical spine symptoms and/or radiculopathy/radicular pain,” nine (8.8%) were categorized as “Cervical examination,” two (2.0%) were categorized as “Manual testing,” two (2.0%) were categorized as “History of cervical surgery,” and 14 (13.7%) were categorized as using “Combined approaches.”

Conclusion: Examination of the cervical spine in patients with sub-acromial shoulder pain is variable in randomized controlled trials. In many instances, no or minimal attempts to screen were undertaken or reported. This has potential research and management implications and further research is indicated to facilitate development of this aspect of examination.

IS TWO-DIMENSIONAL VIDEO A VALID AND RELIABLE MEASURE OF THREE- DIMENSIONAL KINEMATICS IN RUNNERS WITH PATELLOFEMORAL PAIN?

Bradley Stephen Neal | Simon David Lack | Christian John Barton | Alexandra Birn-Jeffrey | Stuart Miller | Dylan Morrissey | Queen Mary University of London | Queen Mary University of London | La Trobe University, Australia | Queen Mary University of London | Queen Mary University of London | Queen Mary University of London

Introduction: peak hip adduction (HADD) and knee flexion (KFLEX) during running are associated with patellofemoral pain (PFP) persistence, representing treatment targets. Clinical practice is lacking a validated, reliable tool with which to measure these kinematics. This study aimed to determine the accuracy of clinical gait analysis, by investigating concurrent validity, intra- and inter-rater reliability of two-dimensional (2D) video.

Materials & Methods: 21 participants with PFP were recruited (10 males, 11 females). Synchronised three-dimensional (3D) and 2D kinematic data were collected during over- groundrunning. 2D videos were analysed with the Hudl Technique application using a commercially available tablet (iPad). Single measure ICCs were calculated using a two-way mixed effects model with absolute agreement. 3D peak hip internal rotation (HIR) was investigated as a covariate with backward linear regression, using the F change statistic.

Results: There was poor agreement between 3D and 2D measurement of peak HADD (ICC 0.06) and peak KFLEX (ICC 0.42). Moderate intra-rater reliability was identified for both variables (ICC 0.61-65). Inter-rater reliability for peak KFLEX was moderate (ICC 0.71), but was poor for peak HADD (ICC 0.31). 3D peak HIR did not significantly explain the identified poor agreement for either variable.

Conclusion: poor agreement between 3D kinematics and 2D video was identified for both variables in runners with PFP, despite acceptable intra-rater reliability. Investigation of software with increased precision is warranted, to improve the accuracy of 2D video predicting 3D kinematics in the clinical setting. Clinical gait analysis using the Hudl Technique application is not currently advocated.

An exploratory pilot study into Undergraduate Physiotherapy students' perceptions of working with patients, with mental illness, and working within the mental health sector of health care.

Samantha McIver, Jane Toms

Background: Mental illness is widespread throughout the United Kingdom with increasing prevalence. As mental illness affects such a large proportion of the population, it is likely that healthcare professionals, including qualified and student physiotherapists, will work with patients in all areas of healthcare, who have mental illness alongside co-morbidities. Physiotherapy students are placed into a wide range of placements throughout an undergraduate degree to develop skills and autonomy in rehabilitation. Understanding students' perspective appears relatively unexplored and was stimulated by personal experience of the first author where patients' rehabilitation could be impacted by mental illness. The impact varied depending on the severity of their illness, as well as the understanding of that illness by the multidisciplinary team involved in their care.

Intention: The aim of this phenomenological study was to:

- Explore physiotherapy students' lived experiences and perceptions of working with patients with mental illness, despite no mental health specific placement
- Understand their views of working in the mental health sector of healthcare

Design and Method: Ethical approval was obtained from Coventry University Ethics and a qualitative methodology was applied. Purposeful sampling was used to recruit six participants, who were all Undergraduate Physiotherapy Students at Coventry University, and data was collected via a focus group. The focus group explored their lived experiences, opinions and perceptions.

Findings: A number of themes were discovered from the data, with associated sub-themes:

1. 'Lack of Clarity' with sub-themes: 'Definitions, Terminology and Understanding', 'Mental Illnesses' and 'Physiotherapist role'
2. 'Emotional Roller-Coaster' with sub-themes: 'Negative reactions' and 'Positive sentiments'
3. 'Transferable Skills' with sub-themes: 'Core competencies' and 'Core skills to elevate'
4. 'Everyone has a Story to Tell' with sub-themes: 'Job', 'Placement' and 'Personal experience'

The themes influenced their 'Curious Intrigue' which related to their views of working in the mental health sector of healthcare.

Conclusion: All participants in the study had experiences to discuss and found it challenging to provide effective rehabilitation, appropriate to the patients' needs. Discussing these experiences evoked a complex range of perceptions and emotions.

Implications/Recommendations: The pilot study highlighted that Physiotherapy students do not feel prepared to provide rehabilitation for those with mental illness. Students felt that they required additional support and teaching in order to provide effective rehabilitation but expressed an interest to working within mental health, despite any negativity discussed.

Clinicians' views on uptake of technology in healthcare

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Aim: To evaluate attitudes and current use of technology within a healthcare setting of allied health professionals (AHPs).

Background: The NHS recognises digital technology is key in improving healthcare systems and delivery. However, the uptake of technology has been slow due to various factors including clinician attitudes and behaviours identified in the Personalised Health and Care 2020 plan.

Methods: An online survey was designed with closed and open questions exploring the barriers and facilitators towards the uptake of technology. The survey was disseminated to 130 AHPs at a specialist orthopaedic hospital. The questions were based on extended Technology Acceptance Model which focused on perceived threat, perceived inequity, perceived usefulness and behavioural intention.

Results: Response rate was 44%. There were more positive results towards perceived usefulness and behavioural intention than to perceived threat and perceived inequity with regards to technology. Clinicians reported that technology has improved efficiency and effectiveness at work benefiting the patient and institution. However, the barriers related to loss of clinical time due to technical issues, lack of IT support, lack of confidence in IT skills and knowledge and patients' inability to access technology. The solutions suggested were more technical support, training and allocated time in work templates and work space.

Conclusion: Clinicians' behavioural intentions were positive towards the use of technology and they were willing to incorporate them more in healthcare. However, developments in infrastructure are required to provide staff with the tools and skills to facilitate greater use of technology within the clinical environment.

Rhythmic Auditory Stimulation in Gait Rehabilitation for Children and Youth Following Acquired Brain Injury

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Introduction: Relearning to walk is an important goal for many children and young people (CYP) after acquired brain injury (ABI). Rhythmic Auditory Stimulation (RAS) uses rhythm to support gait retraining. Its efficacy has been shown for adults with ABI and CYP with cerebral palsy. No studies exist for CYP with ABI.

Aim: To investigate whether the addition of RAS to standard physiotherapy improves CYP's gait speed and quality after severe ABI- a pilot study.

Patients and methods: Four CYP (10-13 years) with severe ABI accessing residential rehabilitation were recruited to a multiple baseline single case experimental design study, AB design. During baseline (A) phase CYP accessed standard rehabilitation (10 physiotherapy sessions per week). In the intervention (B) phase, 2/10 standard physiotherapy sessions were replaced with RAS. Length of baseline was randomised and intervention phases were 4 weeks. 10m walk test and Edinburgh Visual Gait Scale were completed pre and post sessions biweekly. Data analysis including visual analysis of level, slope and trend of the data will be presented with the results of a test of statistical significance.

Results: Data collection will finish in December 2018. Early results indicate that the quality of walking improved more during the intervention phase than the baseline phase for at least one of the participants, and RAS was equal to normal physio in the other participant. Statistical testing is required.

Conclusion: Early results indicate that RAS is at least as effective as normal physio in improving the walking quality of CYP with ABI, but this needs to be confirmed. Recommendations for clinical practice and future studies can be made based on the findings and experience of this study.

Dorsiflexion but not plantarflexion force declines at lower foot skin temperatures

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Background: Muscle maximum voluntary force (MVF) declines at skin temperature (T_{sk}) $<20^{\circ}\text{C}$, attributed to cold muscle, however large muscle deep fibres remain at $>20^{\circ}\text{C}$. Large muscle MVF decline is comparable to that in small superficial muscle where muscle temperature (T_m) remains close to T_{sk} . Therefore, factors in addition to T_m may contribute to large muscle MVF decline. This study compares the effects of foot and/or shank T_{sk} on dorsiflexion (DF) and plantarflexion (PF) MVF, with the hypotheses that: DF MVF $>$ PF MVF decline at lower T_{sk} ; and, PF and DF MVF will decline at lower shank T_{sk} independent of foot T_{sk} .

Method: Twenty-four adults (9♂, 29 ± 11.8 yrs, 170.1 ± 8.0 cm, 66.9 ± 9.3 kg (mean \pm SD)) gave informed consent to participate on three visits – cooling/warming of: foot only (FO); foot and shank (FS); and, shank only (SO). Foot and/or shank T was adjusted using Cryocuff™ sleeves filled with $\sim 45^{\circ}\text{C}$ or $\sim 4^{\circ}\text{C}$ water. T , taken prior to each MVF set, was monitored through thermocouples placed on the limb. PF and DF MVF were measured with a KinCom isokinetic dynamometer, with subjects seated on a plinth with knee fully extended and neutral ankle. A general mixed model was used to evaluate the effects of T_{sk} on MVF. Fixed effects were T_{sk} and condition, with subject as a random effect. The T_{sk} *condition interaction was also modelled. P-values were obtained by likelihood ratio tests.

Results: Foot $T_{sk} < 18.5^{\circ}\text{C}$ resulted in a 10% ($\chi^2(1)=5.479$, $p=0.019$) DF MVF decline, with a T_{sk} *condition interaction ($\chi^2(2)=11.031$, $p=0.004$), this decline was 12% ($\chi^2(1)=13.18$, $p=0.0003$) in FO and 8% ($\chi^2(1)=4.675$, $p=0.031$) in FS. Leg T_{sk} did not affect ($\chi^2(1)=2.849$, $p=0.091$) DF MVF. PF MVF did not change with foot T_{sk} ($\chi^2(1)=0.04$, $p=0.841$) or leg T_{sk} ($\chi^2(1)=0.082$, $p=0.929$).

Discussion: Therefore, DF MVF declines at lower foot T_{sk} independently of shank T_{sk} , whereas PF MVF is unaffected by T_{sk} , possibly because in this protocol the shank was insufficiently cooled. Therefore factors other than direct muscle cooling must contribute to DF MVF decline. One theory is a rightward shift in the force-length relationship, due to stiffer tendon, could result in DFs operating in the descending limb of the force-length relationship. This warrants further investigation.

Pressure pain thresholds in adults with patellofemoral pain and patellofemoral joint osteoarthritis: a case-control study

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Background: Patellofemoral pain (PFP) and patellofemoral joint osteoarthritis (PFJOA) are common non-self-limiting conditions. The two conditions are on a continuum with 20-30% of PFP patients showing radiographic and MRI features of PFJOA. Evidence suggests reduced pressure pain thresholds (PPT), locally and remotely from the site of reported pain, are a feature of PFP in adolescent females. However, a paucity of evidence exists for mixed-sex adults with no studies considering PPT in PFJOA. Exploring if pain sensitisation is a dominant feature of PFP and PFJOA, and if a subgroup at an increased risk can be identified, may guide future treatments for instance the need for components aimed at neurological pain.

Objectives - The primary aim is to (1) measure local and remote PPT in PFP and PFJOA patients compared to matched controls. Secondary aims will consider the relationship between PPT and (2) PFP/PFJOA severity and (3) knee function.

Methods: 13 PFP patients, 15 PFJOA patients and 54 age and sex matched controls were recruited from UK mixed-sex adults. Demographic details, Tegner activity level score, symptom duration, Kujala score (for PFP severity), KOOS score (for PFJOA severity) and Whatman score rating of five single leg squats (for knee function) were recorded. PPT were measured at six sites: five local around the knee, one remote on the contralateral leg. Between-group differences were tested using analysis of variance techniques. Strength of association between PPT and PFP/PFJOA severity and knee function were tested using Spearman's rank order correlation.

Results: No statistically significant difference in PPT were identified between the PFP patients and matched controls ($F(1,31) = 0.687$, $p = 0.413$, $h^2 = 0.022$). Similarly, no difference in PPT were identified between the PFJOA patients and matched controls ($F(1,47) = 0.237$, $p = 0.629$, $h^2 = 0.005$).

Conclusion: Contrary to the hypothesis, no difference was found between PFP nor PFJOA patients and matched controls.

The impact of austerity on patient care and professionalism- a qualitative exploration into physiotherapy in the NHS.

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Objectives: The study aimed to explore the impact that austerity and constrained resources have on patient care and professionalism, as perceived by physiotherapists currently working in the NHS.

Design: Interviews were carried out using hermeneutic phenomenology in the design, conduct and analysis of the study.

Setting and participants: Participants were invited to take part via a professional network of physiotherapists, the Chartered Society of Physiotherapy. As the study aimed to obtain some preliminary findings, two participants were recruited to the study. Both participants worked within the stroke department of an acute NHS organisation in England. One participant was an experienced senior physiotherapist and the other was a junior rotational physiotherapist.

Findings: Once completed, the interviews were transcribed verbatim and analysed using thematic analysis and a hermeneutic phenomenological methodology. Three themes emerged from the data; these were 1) fulfilling professional responsibilities, 2) changing organisational landscape and 3) the professional reality of rationalising and accommodating austerity. Both participants had experience of austerity and constrained resources and provided examples of where this impacted on the care they could provide.

Conclusions: The study highlighted the impact of austerity on patient care; these included reduced community support, increased length of stay, reduced treatment time/frequency and reduced resources. Additionally, the findings identified the wider impact that austerity and constrained resources had on physiotherapy clinicians, including how this affected professional identity, autonomy, decision-making and the changing organisational landscape of the profession.

Mobilization and tactile (sensory) stimulation (MTS) for the foot post stroke: opinions and perceptions of experienced therapists

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Introduction: Intensive proprioceptive stimulation applied to the paretic hand post-stroke, using a complex hands-on intervention known as Mobilization and Tactile Stimulation (MTS), has reduced motor impairment and improved hand function in sub-acute and chronic stroke (Hunter et al, 2006; 2008; 2011; Winter et al, 2013). Whilst, anecdotally, MTS is also applied to the paretic foot to prepare it for standing, its use in stroke rehabilitation and effects on standing and balance have not been evaluated. Therefore, we set out to explore expert clinicians' experiences, opinions and perceptions of using MTS in routine clinical practice to inform a subsequent feasibility study of MTS for the paretic foot post-stroke.

Methods: Following ethical approval, focus groups were undertaken: using purposive sampling, physiotherapists and occupational therapists with >12 months experience of stroke rehabilitation were recruited from a regional special interest group (SIGNeT, Keele University). A pilot study (n=4) and main study (n=7) explored content and application of hands-on therapy for the paretic foot, and the perceived impact of sensory loss on lower limb function. Data were audio-taped and transcribed verbatim. Thematic analysis was undertaken using Burnard's (1991) '14 Stages of Analysis'.

Results: All 11 therapists had previous experience of using MTS for the foot post-stroke. Three main themes were identified: 1) therapeutic intervention (subthemes: therapy content, sensation, adjuncts, the foot as an active base of support and preparation for function), 2) 24-hour care and 3) analysis (subthemes: outcome measures, response to treatment). The most common adjuncts to MTS were orthotics and task-specific training. The importance of MTS in restoring foot alignment, sensory feedback and progression of the patient towards weight bearing and ambulation in the clinical setting was highlighted.

Conclusions: MTS is a complex intervention used in stroke rehabilitation to enhance weight bearing and ambulation post stroke. Further research into its effects on the foot and lower limb is warranted in order to evaluate it and determine its evidence base for inclusion in routine clinical practice. Alternative methods of applying proprioceptive stimulation should also be considered, for example use of textured insoles, and relative effectiveness of these explored in clinical trials.



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