



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

2019 POSTGRADUATE RESEARCH CONFERENCE

“FROM EVIDENCE TO PRACTICE”

A photograph of a building with a flag on top, partially obscured by a purple overlay. A tree with purple flowers is in the foreground.

SCHOOL OF
HEALTH AND
REHABILITATION
SCIENCES

GETTING TO THE VENUE

The conference will be held at the **Queensland Bioscience Precinct (Building 80)**, UQ St Lucia campus (see map here: <https://maps.uq.edu.au/st-lucia/search/qbp/location/148>). Please access **entry to level 3 via the ramp from Chancellors Place**, as indicated in the photo below.



Sign in on arrival (Registration desk open from 8:30am)

Please **sign in at the registration desk** on arrival.

The opening session will **begin at 9am** sharp. Please be seated in the auditorium by this time.

We are proud to be running this year's conference in support of UQ Sustainability.

Our green initiatives include paperless conference programs and certificates, and minimal impact catering and service ware.

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- BYO keep cup
- BYO water bottle
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- Have a QR code scanning app on your phone/smart device to participate in paperless voting for the People's Choice awards
- All awards and certificates will be digital and emailed to recipients post-conference



8.30	REGISTRATION Foyer		
	OPENING PLENARY SESSION Auditorium		
9.00	WELCOME ADDRESS Professor Sandy Brauer		
9.15	KEYNOTE PRESENTATION Professor Alison Mudge		
9.30	KEYNOTE PRESENTATION Dr Shanthi Ramanathan		
9.45	KEYNOTE PRESENTATION Dr Ian Scott		
10.00	EXPERT PANEL Professor Alison Mudge, Dr Shanthi Ramanathan, Dr Ian Scott, Dr Kirstine Shrubsole, Dr. Jenny Setchell, and Dr Elise Gane		
10.30	MORNING TEA Foyer		
	MUSCULOSKELETAL <i>Multi Media Room (3.141)</i>	COMMUNICATION <i>Large Seminar Room (3.142)</i>	PAEDIATRICS <i>Small Seminar Room (3.146)</i>
11.00	Physiotherapists have narrow conceptualisations of the biopsychosocial model when assessing and treating people with low back pain – A Critical Review <i>Karime Mescouto (Physiotherapy)</i>	Normative Wideband Tympanometry measurements in Australian school children <i>Cerys Downing (Audiology)</i>	Experiences of children with fetal alcohol spectrum disorder and their families: A critical review <i>Kelly Skorka (Occupational Therapy)</i>
11.15	Shear wave elastography of the iliotibial band: an exploratory study in pain-free runners <i>Manuela Besomi (Physiotherapy)</i>	TACTICS Aphasia (Taking ACTION for Intensive and Comprehensive Services): Development and Pilot Trial of an Implementation Intervention <i>Megan Trebilcock (Speech Pathology)</i>	Canine assisted occupational therapy for children on the autism spectrum: Parents' perspectives <i>Jess Hill (Occupational Therapy)</i>
11.30	Musculoskeletal pain and disability in sonographers: more than an ergonomic issue? <i>Yanfei Xie (Physiotherapy)</i>	Measuring conversation success in dyads where one person has aphasia: the development of a Patient Reported Outcome Measure <i>Annette Rotherham (Speech Pathology)</i>	Sense of safety: Links between childhood adversity, attachment patterns, and sensory sensitivity in adults <i>Lachlan Kerley (Occupational Therapy)</i>
11.45	Exploring the use and implementation of sit-stand workstations in Australian-based organization <i>Haroun Zerguine (Occupational Therapy)</i>	Sleep on it: The effect of sleep on new word learning <i>Emma Schimke (Speech Pathology)</i>	CyFIT Telehealth: Outpatient Physiotherapy Service for Children with Cystic Fibrosis <i>Ray Lang (Physiotherapy)</i>
12.00	Clinical predictors of outcome following hip arthroscopy <i>Matthew Freke (Physiotherapy)</i>	Exploring Key stakeholders perceptions and attitudes on Return to Work Barriers and Facilitators after a Road Traffic Crash <i>Masoumeh Abedi (Occupational Therapy)</i>	Does the use of a digital home exercise program improve exercise adherence in Paediatric outpatient caseloads? <i>Anna Chinamallela (Physiotherapy – Honours)</i>

12.15	Influence of body position on dynamics of the pelvic floor measured with transperineal ultrasound imaging in men <i>David Cowley (Physiotherapy)</i>	Current practice and barriers and facilitators to core outcome set use in aphasia research <i>Bridget Sullivan (Speech Pathology - Honours)</i>	Can lower limb muscle testing predict gross motor function in children with myelomeningocele? <i>Ripley Beck (Physiotherapy - Honours)</i>
12.30	LUNCH & INFOGRAPHICS Foyer		
	NEUROREHABILITATION Multi Media Room (3.141)	MUSCULOSKELETAL & TELEREHABILITATION Large Seminar Room (3.142)	PROFESSIONAL EDUCATION Small Seminar Room (3.146)
1.15	Music listening for aphasia recovery: Changes in brain activity, cognition, and mood associated with language recovery <i>Jennifer Lee (Speech Pathology)</i>	Multi-directional hip strength, physical function and dynamic balance in people with unilateral knee osteoarthritis compared to healthy age-matched controls: A cross-sectional study <i>Andrew Hislop (Physiotherapy)</i>	The experiences of physiotherapy for individuals who identify as lesbian, gay, bisexual, transgender, intersex, queer or related identities (LGBTIQ+) <i>Megan Ross (Physiotherapy)</i>
1.30	Sexual Rehabilitation for People with a Spinal Cord Injury: A scoping review of Non-medical Approaches <i>Chloe Bryant (Occupational Therapy)</i>	A systematic review of mechanism-based classification systems for pain experienced in the musculoskeletal system <i>Muath Shraim (Physiotherapy)</i>	Exploring what assists new graduate paediatric occupational therapists in learning to make intervention decisions when working with children and families <i>Elizabeth Moir (Occupational Therapy)</i>
1.45	EEG-based cortical relationship between motor attempt (MA) and motor imagery (MI) in cerebral injury patients <i>Shugeng Chen (Physiotherapy)</i>	Development of an active video game for the long-term maintenance of physical activity in people with COPD <i>Joshua Simmich (Physiotherapy)</i>	Making Better Drivers: The Role of Brain Stimulation and Hazard Perception Training <i>Genevieve Kieseker (Physiotherapy)</i>
2.00	Decision-making in upper limb neurorehabilitation: Client outcomes and clinical utility of the Hypertonicity Intervention Planning Model <i>Amelia Tan (Occupational Therapy)</i>	Implementation of the Netball KNEE Program in community netball clubs <i>Tess Saad (Physiotherapy – Honours)</i>	Exploring the workplace mentorship needs of new-graduate physiotherapists; a qualitative study <i>Andrew Lao (Physiotherapy)</i>
2.15	The effect of individualised, vibrotactile neurofeedback training on postural stability in older adults with hearing impairment (Acronym: VIBRANT Trial) <i>Jacinta Foster (Audiology)</i>	Physiotherapy management of chest trauma in a major tertiary trauma centre <i>Emily Daniel (Physiotherapy – Honours)</i>	Piloting the use of the Functional Communication Classification System (FCCS) with speech-language pathology students <i>Jacinta Quartermaine (Speech Pathology – Honours)</i>
2.45	AFTERNOON BREAK		
	CLOSING PLENARY SESSION & AWARDS Auditorium		
3.00	30-second Thesis viewing and People's Choice voting		
3.15	Awards & prizes – <i>Best student presentation, People's Choice awards, Lucky door prize</i>		
3.30-5pm	POST-CONFERENCE ECA & HDR NETWORKING EVENT Genies Cafe		

KEYNOTE SPEAKERS



Prof Alison Mudge is a general physician at Royal Brisbane and Women's Hospital, Queensland Health, and Medical Research Fellow.



Dr Shanthi Ramanathan is a Post Doctorate Fellow at Health Research Economics at the Hunter Medical Research Institute.



Dr Ian Scott is the director of Internal Medicine and Clinical Epidemiology Princess Alexandra Hospital and Professor of Medicine at the University of Queensland.

EXPERT PANEL



Dr Elise Gane is a Conjoint Research Fellow at The University of Queensland and Princess Alexandra Hospital.



Dr Jenny Setchell is a NHMRC Research Fellow, at The University of Queensland and has a research focuses on socio-cultural aspects of physiotherapy.



Dr Kirstine Shrubsole is a Speech Pathology Lecturer at Southern Cross University.

ABSTRACTS: NEUROREHABILITATION

Music listening for aphasia recovery: Changes in brain activity, cognition, and mood associated with language recovery

Jennifer Lee¹, Tracy Roxbury², Katie McMahon³, Teppo Särkämö⁴, Felicity Baker⁵, Marcus Meinzer⁶, & David Copland^{1,2}

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BACKGROUND: The use of personalised music playlists to improve clinical outcomes has gained increasing interest in stroke rehabilitation. Previous research found that subacute stroke patients who engaged in daily music listening showed greater recovery of verbal memory, cognition, and mood. Although music and language share similar brain networks, the effects of music listening on language recovery in people with aphasia are unknown. This project aims to investigate the effects of daily music listening on aphasia recovery, and identify changes in functional brain activity, mood, and cognition associated with language recovery.

METHOD: Fifty participants with a first-time left-hemisphere stroke will be recruited from hospitals across South-East Queensland, and randomised to 'usual care+music' or 'usual care'. The music group will be asked to listen to self-selected music for at least one hour every day for ten weeks. Participants will complete language, cognitive, music, mood assessments, and MRI scans at 2-weeks, 3-months, and 6-months post-stroke. Language recovery will be analysed using a mixed model with Time as the within-subjects factor and Treatment as the between-subjects factor. Regions of interest analyses will be based on a priori hypotheses of language and music lateralisation. Changes in brain activity pre- and post-intervention will be correlated with behavioural measures of language, mood, and cognition.

RESULTS: Not yet available.

HYPOTHESES: It is hypothesised that the music group will show greater language recovery than the usual care group. We will also test hypotheses that the magnitude of language recovery will be positively correlated with levels of mood, cognition, and functional activity in brain regions implicated in language.

Keywords: music, aphasia, stroke, rehabilitation, neuroscience, language

Sexual Rehabilitation for People with a Spinal Cord Injury: A Scoping Review of Non-Medical Approaches

Chloe Bryant¹, Louise Gustafsson², & Tammy Aplin¹

1. Discipline of Occupational Therapy, School of Health and Rehabilitation Sciences, University of Queensland, Australia, 2. Discipline of Occupational Therapy, School of Allied Health Sciences, Griffith University, Queensland, Australia.

BACKGROUND: There is a wealth of literature discussing interventions to support sexuality after a spinal cord injury, however this appears to be largely focused on the medical methods to 'fix' functional issues. What non-medical approaches are used in practice to address sexuality for people with a spinal cord injury remains unclear.

AIM: To identify, summarise and describe existing literature on non-medical approaches to sexuality following a spinal cord injury.

METHOD: This scoping review utilised a five-step process and the results were thematically analysed.

RESULTS: Twenty-four articles published between 1996 and 2019 were included in the review. Four interconnected themes were identified, including: the importance of individuality and timing, the health care professional role, services provided or piloted and suggestions for practice. Findings revealed that health care professionals should consider the following when addressing sexuality: personal factors, when to offer support, inclusion of intimate partners and promotion of privacy. Health care professionals also need to reflect on their comfort and knowledge of sexuality and refer when appropriate. Additionally, it was found that a team approach is effective for sexual rehabilitation and frameworks, training and continual development opportunities support practice. Many non-medical interventions and strategies are identified, however, most participants discussed that the information provided and/or access to information is limited. Conclusions: Although non-medical interventions or strategies may be used in practice, provision of support appears to be limited with no consistent approach. Numerous suggestions and implications for practice are discussed as well as several areas highlighted for further research.

Keywords: Sexuality, intimacy, SCI, scoping review, client-centred care

EEG-based cortical relationship between motor attempt (MA) and motor imagery (MI) in cerebral injury patients

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BACKGROUND: Motor attempt (MA) and motor imagery (MI) are two common motor tasks used in brain-computer interface (BCI), which is widely researched for motor rehabilitation of cerebral injury patients. However, the cortical relationship between MA and MI tasks is not fully clear. In this study, we aim to compare the BCI accuracies and cortical activation patterns between the two tasks for better BCI application.

MATERIALS AND METHOD: We recruited 16 patients with cerebral injury in either subacute or chronic stage to perform MA and MI tasks in a self-control design. BCI accuracies from bilateral, ipsilesional and contralesional hemispheres were analyzed and compared between different tasks. Moreover, cortical activation patterns were evaluated with event-related de/synchronization (ERD/ERS) and laterality index (LI).

RESULTS: Our findings showed that BCI accuracies of MA were significantly ($p < 0.05$) higher than MI in bilateral, ipsilesional and contralesional hemispheres in alpha-beta (8-30 Hz) frequency band. ERD was stronger in MA than in MI but not significant. Besides, there were correlations between ERD and BCI accuracies in sensorimotor areas ($p < 0.05$). Moreover, there was similar trend of inter-hemispheric activations/LI between MA and MI tasks.

CONCLUSIONS: Our study demonstrated that MA task could achieve better BCI performance and higher cortical activations. It suggested that MA task might be an optimal approach for rehabilitation in cerebral injury patients.

Keywords: *event-related desynchronization, event-related synchronization, motor attempt, motor imagery, brain-computer interface*

Decision-making in upper limb neurorehabilitation: Client outcomes and clinical utility of the Hypertonicity Intervention Planning Model

Amelia Tan¹, Jodie Copley¹, & Jenny Fleming¹

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BACKGROUND: Upper limb (UL) rehabilitation following brain injury is recognised to be complex and challenging, due to each individual's unique presentation. While recent decades have seen a proliferation of UL interventions, recommendations remain generalised. Therapists have expressed hopes for more guidance in selecting and applying individualised interventions for each client. Preliminary research reveals that the Hypertonicity Intervention Planning Model (HIPM) holds promise as a decision-making aid to structure clinical reasoning for UL neurorehabilitation. However, further research is required to determine the HIPM's clinical utility, and whether its use leads to successful client outcomes.

AIMS:

- To determine client outcomes of using the HIPM as a decision-making aid
- To understand therapists' experiences of using the HIPM in practice

METHODS: A scoping review explored the literature for existing decision-making aids that guide UL neurorehabilitation. It will also involve consultation with key stakeholders to validate findings and gather feedback on current gaps. Subsequently, a single case experimental design study will investigate client participants' outcomes from using the HIPM to individualise UL interventions. Additionally, semi-structured interviews and focus groups will capture therapist participants' perspectives of benefits and challenges of using the HIPM in practice, as well as their recommendations to optimise its clinical utility.

PLAN: Analysis and refinement of the scoping review's preliminary findings are in progress. For the clinical utility phase, a focus group has been conducted and interviews have commenced. Overall, study findings may help refine the HIPM to better guide therapists' decision-making in UL neurorehabilitation, so as to ultimately improve client outcomes.

Keywords: neurorehabilitation, upper limb, decision-making, clinical reasoning, occupational therapy

The effect of individualised, vibrotactile neurofeedback training on postural stability in older adults with hearing impairment (Acronym: VIBRANT Trial)

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This dissertation aims to evaluate the effect of vibrotactile neurofeedback training (Vertiguard system, Zeisberg GmbH) on postural stability and vestibular function in older adults with hearing impairment as part of a multicentre international trial. Vibrotactile interventions have been studied previously for their effect on postural stability, however older adults with hearing deficits have not yet been investigated, nor has the impact of vibrotactile feedback on vestibular function been established. This thesis aims to address these gaps in the literature. The thesis will include a systematic review (study 1) evaluating the impact of hearing impairment and vestibular function on postural stability in older adults. Study 2 aims to establish the validity of a Garmin activity tracker at recording steps in older adults with the aim to use this device to track activity levels in later studies. Study 3 will establish baseline vestibular function in older adults with hearing loss. Studies 4 and 5 are the primary analyses aimed at evaluating the effect of vibrotactile training on postural stability and vestibular function in older adults with hearing impairment. Postural stability is the primary outcome consistent across all sites however evaluation of vestibular function is a sub-component unique to our UQ site. These studies will be randomised, double-blinded and placebo controlled with gait and vestibular parameters completed at baseline, post intervention and at 6 months. The final study (study 6) is a qualitative analysis of participants acceptability and satisfaction with using the Vertiguard system to establish usability and transference to clinical practice.

Keywords: postural stability, vestibular function, hearing loss, vibrotactile feedback

ABSTRACTS: COMMUNICATION

Normative Wideband Tympanometry measurements in Australian school children*Cerys Downing¹, Joseph Kei¹, & Carlie Driscoll¹*

1. The University of Queensland, Brisbane, Australia

BACKGROUND: Traditional tests of middle-ear function use a single frequency to evaluate the integrity of the middle-ear system. Wideband Tympanometry (WBT), a newly developed test, instead uses a wideband stimulus to obtain more diagnostically useful information than traditional methods. At present, there is no normative data to facilitate the clinical implementation of WBT to distinguish between ears with or without middle-ear dysfunction and/or conductive hearing loss, and healthy ears. It is expected that establishing normative WBT data will improve the accuracy of clinical diagnosis and identification of middle-ear dysfunction and Conductive hearing loss in children.

AIMS: This study aimed to develop a normative dataset for WBT measurements in Australian school children, and to determine the presence and impact of any gender, ear, ethnicity or age effects with regard to clinical practice.

METHOD: Data were collected cross-sectionally from ears of 909 children aged 4 years to 16 years determined to have normal middle-ear function and without significant history of middle-ear dysfunction. WBT was measured and recorded for every child. Data were then averaged over 1/3-octave intervals for analysis.

RESULTS: Data analysis for this study are ongoing. The first report of large-scale wideband tympanometry data in school aged children will be presented, including analysis of any gender, ear, ethnicity, or age effects in the data. Particular focus will be given to analyses of absorbance measured at 0 daPa (WBA0), tympanometric peak pressure (WBATPP), resonance frequency, equivalent ear canal volume, admittance magnitude and phase angle.

Keywords: Wideband Acoustic Immittance, Tympanometry, Normative data, Hearing loss, Children

TACTICS Aphasia (Taking ACTION for Intensive and Comprehensive Services): Development and Pilot Trial of an Implementation Intervention

Megan Trebilcock¹, Brooke Ryan¹, Kirstine Shrubsole², & Linda Worrall¹

1. School of Health and Rehabilitation Sciences, University of Queensland, Brisbane, Queensland, Australia. 2. School of Health and Human Services, Southern Cross University, Gold Coast, Queensland, Australia

BACKGROUND: Challenges with the successful implementation of intensive and comprehensive aphasia services has resulted in an evidence practice gap. This study will develop and pilot an implementation intervention, Taking ACTION for Intensive and Comprehensive Services (TACTICS) Aphasia. TACTICS will target the implementation of Intensive and Comprehensive Aphasia Programs (ICAPs) and improvements in the intensity and comprehensiveness of aphasia services. Previous international focus group data identified the following influential factors as per the Theoretical Domains Framework (TDF): environmental context and resources, beliefs about consequences, social-professional role and identity, skills and knowledge.

AIMS:

- 1) To develop an online intervention, relevant to speech pathologists, targeting the implementation of ICAPs and improvements in the intensity and comprehensiveness of aphasia services.
- 2) To identify the feasibility of conducting a large-scale clinical trial by establishing the likelihood of the intervention to be integrated within everyday clinical practice and its potential to influence changes in clinical practice.

METHOD: Phase I will include the development of an online intervention using a qualitative approach informed by videoconference focus groups. The intervention design process will be guided by the Behaviour Change Wheel and principles of Integrated Knowledge Translation. Phase II will include a single arm, pre-post pilot study with an embedded process evaluation conducted at a single Australian health service.

RESULTS/PLAN: The proposed research plan has been developed with the intent to develop a theoretically based online intervention that will be acceptable to speech pathologists and have the potential to facilitate the implementation of aphasia best-practice.

Keywords: aphasia, implementation intervention, evidence-based practice

Measuring conversation success in dyads where one person has aphasia: the development of a Patient Reported Outcome Measure.

Annette Rotherham¹, Sarah Wallace¹, Nina Simmons-Mackie², Claire Croteau³, & Katerina Hilari⁴

1. School of Health and Rehabilitation Sciences, The University of Queensland, 2. Nina Simmons-Mackie; Southeastern Louisiana University, USA, 3. Claire Croteau, University of Montreal, Canada, 4. Katerina Hilari, City, University of London, UK

PROJECT AIM: The overarching aim of this research project is to develop a patient reported outcome measure (PROM) of conversation success for both partners in a dyad where one person has aphasia. This presentation will describe the process of PROM development that will be undertaken.

BACKGROUND: People with aphasia (PWA) and their primary conversation partners (PCP) have identified successful conversation as a key goal and desired outcome of aphasia treatment. Improvements in conversation result in increased social participation between a person with aphasia and their PCP, impacting quality of life and their success in living with aphasia. In aphasia treatment, conversation therapy and communication partner training (CPT) are often used with the aim of improving conversation in the dyad. While multiple systematic reviews have demonstrated positive outcomes from these treatment approaches, these studies have highlighted the complexity of aligning the aim of CPT with appropriate outcome measures. Perception of conversation success is a subjective measure that is best measured by the participants ie. the dyad. There is a need for psychometrically valid outcome measures which gauge the perspectives of the dyad (patient-reported outcome measures) on the success of their conversation.

METHOD: A patient-reported measure of conversation success will be developed in four phases: (1) A systematic review of currently available outcome measures in conversation for people with aphasia; (2) Item generation via nominal groups with PWA and PCPs; and (3) Assessment of comprehensibility and content validity via cognitive interviews; (4) Preliminary validation of the resulting tool. Stakeholder involvement will be sought in all phases.

RESULTS: This presentation provides an overview of the research methods. Results are not yet available

CONCLUSIONS: The development of a PROM for dyadic conversation in aphasia would allow for the perspective of a dyad to be measured on the construct of conversation success. This outcome measure would align more closely with the aim of CPT (improved conversation) and provide outcomes that are relevant and important to PWA and their PCP.

Keywords: *aphasia, conversation success, dyads*

Sleep on it: The effect of sleep on new word learning

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BACKGROUND: Methods to enhance word learning are currently of interest, as individuals are required to learn new words across the lifespan. It has been established that sleep plays a role in memory consolidation and can benefit various forms of learning, including word learning.

AIMS: The primary aim of the present study was to investigate the impact of sleep on associative novel word learning in healthy young adults. The secondary aim was to establish whether the effect of sleep on word learning varies when semantic information is provided during the learning phase.

METHODS: Seventy-six healthy young adults were required to learn the names of novel objects. Names consisted of a novel word (e.g., Snaze) paired with either two semantic attributes (semantic condition) or two proper names (name condition). The first training session involved five learning phases, with tests of recall following each phase. Recognition of the novel words and semantic attributes/proper names was also examined at the end of the session. Recall and recognition of the novel words and semantic attributes/proper names was again tested 12 hours later after a period of overnight sleep (n = 36) or daytime wakefulness (n = 40). Participant levels of alertness were measured at each session, and participant activity and sleep was monitored outside of the testing sessions via Actigraphy and subjective report.

RESULTS/PLAN: Behavioural analyses were conducted on the accuracy (percentage correct) and reaction time (latency of response) data using a repeated measures ANOVA. The results of this study will be presented and discussed within the context of existing findings.

Keyword: sleep, memory consolidation, novel words learning, semantics

Exploring the Perspectives of Key Stakeholders in Return to Work after Road Traffic Injuries

Masoumeh Abedi¹, Venerina Johnston², Elise Gane³, & Tammy Aplin⁴

1. School of Health and Rehabilitation Sciences, University of Queensland. 2. RECOVER Research Injury Centre, University of Queensland. 3. Conjoint Research Fellow SHRS, PA Hospital, 4. Conjoint Research Fellow, SHRS, PC Hospital

Return to work (RTW) following a road traffic injury (RTI) can be a time and resource-consuming process. Despite the significant impact of compensation schemes on RTW after a RTI, there is a lack of knowledge on the factors associated with a poor work outcome following a RTI in a 'fault-based' scheme.

AIM: This study aims to explore factors impeding or facilitating RTW of a person with RTIs in a 'fault based' scheme from the perspective of key stakeholders.

METHOD: A qualitative study will be conducted in Queensland that operates a 'fault-based' compensation scheme. The perspective of treating health professionals, vocational rehabilitation providers, CTP insurers, employers, and solicitors will be sought through focus group sessions and one on one interviews. This study will use the interpretive description method and data will be analysed using the inductive thematic analysis.

PRELIMINARY RESULTS: From several interviews and focus group conducted so far, emerged codes show stakeholders' lack of knowledge of the importance of RTW and the RTW process in the CTP scheme, optimal RTW strategies, and available resources to support RTW following a RTI are major barriers of RTW following a RTI.

Keywords: *Road traffic injury, return to work*

Current Practice and Barriers and Facilitators to Core Outcome Set Use in Aphasia Research

Bridget Sullivan¹, Sarah J. Wallace¹, Tanya Rose¹, & Kirstine Shrubsole²

1. School of Health and Rehabilitation Sciences, The University of Queensland, 2. School of Health and Human Sciences, Southern Cross University, Gold Coast

BACKGROUND: A core outcome set (COS) is a minimum set of outcomes for use in research studies of a particular health condition. COSs are used to increase standardisation across studies, enabling data comparison and aggregation, and reducing reporting bias and research wastage. A COS for aphasia treatment studies, the ROMA (Research Outcome Measurement in Aphasia) COS, has been developed. To date, there has been no research investigating current practice or barriers and facilitators to ROMA COS implementation.

AIMS: To explore (1) current practice and knowledge of, and (2) perceived barriers and facilitators to the use of the ROMA COS; from the perspective of an international sample of aphasia researchers.

METHODS & PROCEDURES: An international sample of aphasia researchers completed a cross-sectional online survey. Current practice and knowledge were explored using closed/open-ended questions and Likert rating scales. Barriers and facilitators to ROMA COS implementation were explored through ratings of statements aligned with the Theoretical Domains Framework (TDF). Data were analysed using descriptive statistics and qualitative content analysis.

OUTCOMES AND RESULTS: Data from 69 international aphasia researchers were included. The majority of participants reported that they were aware of COSs and the ROMA COS, prior to taking part in this research. Aphasia researchers identified more facilitators than barriers to ROMA COS use. Key facilitators related to the domains 'Knowledge' (i.e. an awareness of which outcome measures were included in the ROMA COS), 'Intentions' (i.e. an intention to use the ROMA COS in future aphasia treatment research) and 'Goals' (i.e. the belief that there is a need to use the ROMA COS in aphasia treatment research). Key barriers related to the domains 'Reinforcement' (i.e. incentives for ROMA COS use in aphasia treatment research), 'Social influences' (i.e. whether colleagues within a participant's research team encouraged ROMA COS use) and 'Memory, attention and decision processes' (i.e. the ability to remember to include the ROMA COS in aphasia treatment study design).

CONCLUSIONS & APPLICATIONS: This is the first study which has used a theoretical framework to examine COS implementation. The methodology used in the current research provides a model for replication across other health areas. Study outcomes will guide the development of theoretically informed implementation interventions through use of Behaviour Change Wheel, Capability, Opportunity, Motivation and Behaviour (COM-B) model.

ABSTRACTS: MUSCULOSKELETAL

Physiotherapists have narrow conceptualisations of the biopsychosocial model when assessing and treating people with low back pain – A Critical Review

Karime Mescouto¹, Paul Hodges¹, Rebecca Olson², & Jenny Setchell¹

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BACKGROUND: Low Back Pain (LBP) is the leading cause of disability worldwide. The biopsychosocial (BPS) model has been widely advocated by clinical guidelines in the assessment and management of this condition in physiotherapy. However, there is still no clear consensus regarding what the BPS model means in physiotherapy or how to apply it.

AIM: To investigate how the literature constructs the BPS model through different discourses in the assessment and management of people with LBP in physiotherapy.

METHOD: The discourse analysis presented in this critical review used a sample of 55 articles retrieved from the PubMed and Web of Science electronic databases.

RESULTS: There were four key discourses from the assumptions underpinning the use in the literature of the term BPS model: 1) BPS as biological (conflation); 2) BPS as (narrowly) psychological; 3) BPS as (occasionally involving) social; and 4) BPS as other aspects of care.

CONCLUSION: The discourses suggest that there were important differences regarding how researchers understood the BPS model in LBP care in physiotherapy. The majority of texts conflated the BPS with the biomedical model; psychological aspects were narrowly focused on cognitive and behavioural aspects; and social context was concentrated on work, family and relationships. Emotions, stigma and patient-centred care were occasionally, but rarely mentioned in the texts. The implication of this is that multiple other important factors such as power relations, micro-macro politics, ethics, and social determinants of health may not be incorporated in physiotherapy research and practice when addressing the BPS model in LBP care.

Keywords: *Biopsychosocial, physiotherapy, low back pain*

Shear wave elastography of the iliotibial band: an exploratory study in pain-free runners

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BACKGROUND: High tension/stiffness of the iliotibial band (ITB) has been proposed to be associated in the pathogenesis of common running-related injuries, namely ITB syndrome and patellofemoral pain. Assessing the mechanical properties of the ITB at different regions and tasks/postures could help determine the ITB's potential role in these conditions. This study aimed to determine whether there are differences in the shear elastic modulus of the ITB i) between postures/tasks in different anatomical regions, ii) between anatomical regions of the ITB across postures/tasks, and iii) between regions of the ITB before and after exposure to running, in pain-free runners.

METHOD: Shear elastic modulus (as an index of stiffness) was measured unilaterally (dominant leg) using shear wave elastography in three regions of the ITB (proximal, middle and distal), during different tasks/postures: rest and contraction (pre and post 15 minutes of running), Ober test, standing, pelvic drop and weight shift. Surface electromyography from five leg muscles; accelerometers placed on the thigh, sacrum and sternum; and the centre of pressure position were used to standardise postures. Comparisons between tasks/postures and regions were conducted using one-way repeated measures of ANOVA with Bonferroni post-hoc test. Significance level was set at $P < 0.05$.

RESULTS: Fifteen recreational runners from the local community (75% females; median age 31 years (range 20-59); mean body mass index $23.5 (\pm 2.3) \text{ kg/m}^2$) were included. Compared to rest, there was an increased in stiffness for the middle and distal regions during contraction, and middle region during Ober test (mean differences [MD] from 53.5 to 67.6 kPa). Other conditions did not differ for any region. Stiffness of the middle region was higher than proximal region during contraction, Ober test, standing, pelvic drop and weight shift, and also higher than distal during pelvic drop and weight shift (MD from 32.1 to 41.9 kPa). During contraction, stiffness in the proximal region was lower post- than pre-running (MD -24.4; 95%CI -0.2 to -48.7).

CONCLUSION: Shear wave elastography provided an estimation of in-vivo mechanical properties of the ITB. As would be predicted, stiffness of the ITB was greater in conditions where the ITB is put into strain through passive or active tension. Running exposure only affected the stiffness of the proximal region. It is important to test whether mechanical properties of the ITB respond similarly in individuals with ITB syndrome and patellofemoral pain.

Keywords: *hip, muscle, evidence based review, injuries, lower limb*

Musculoskeletal pain and disability in sonographers: more than an ergonomic issue?

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BACKGROUND: Musculoskeletal pain a ubiquitous and universal problem in many industries and professions, including ultrasonography. High burdens are placed on the individual and industry when musculoskeletal symptoms interfere with home or work activities. This study aimed to investigate 1) the relationship of the presence of multisite (≥ 3 anatomical regions) interfering symptoms in the past 12 months, and 2) the severity of neck pain and disability in the past 7 days, with individual, work-related and psychosocial factors.

METHODS: A cross-sectional online survey was conducted among sonographers working within Australia and New Zealand. The presence of musculoskeletal complaints were recorded using the Standardized Nordic questionnaire. Neck pain and disability were measured using the Neck Disability Index (NDI). Related risk factors were measured using standardized questionnaires, including individual, work-related and psychosocial factors. Multivariate binary logistic regression (backward elimination) was used to determine which factors explained the presence of multisite of interfering symptoms, while multivariate linear regression (backward elimination) was used to identify factors for pain and disability.

RESULTS: Four hundred and thirty sonographers (age: 22-66 years, females: 81%) answered the survey, with 344 (80%) completing the survey (completion rate of survey: 80%). Around 56.7% of sonographers reported interfering symptoms in at least one body region, with 19.9% reported multisite interfering symptoms in the past 12 months. Of all the body regions surveyed, neck and shoulder regions were the most commonly reported which were 31.8% and 34.1%, respectively. Pain catastrophizing (adjusted OR=1.05) and fear avoidance (adjusted OR=1.19) were significantly associated with multisite inferring symptoms. A history of medical comorbidity and exposure to trauma ($p = 0.049$), more hours of vigorous physical activity per week ($p = 0.030$, higher ergonomic risk ($p < 0.001$), lower social support ($p = 0.002$), higher job satisfaction ($p = 0.018$), depression ($p < 0.001$), pain catastrophizing ($p < 0.001$), fear avoidance ($p < 0.001$), eye complaints (eg blurred vision, itching, dryness, burning) ($p < 0.001$), and concurrent musculoskeletal symptoms ($p < 0.001$) were independently associated with higher neck pain and disability.

CONCLUSION: A substantial proportion of sonographers reported interfering symptoms, particularly in the neck and shoulders. Vigorous physical activity is a protecting factors for neck symptoms. Preventions and interventions of musculoskeletal symptoms in sonographers may not only focus on ergonomics but also psychosocial factors and addressing comorbidities.

Keywords: *work-related musculoskeletal health, psychosocial risk factors, physical activity, prevalence*

Exploring the use and implementation of sit-stand workstations in Australian-based organisation

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BACKGROUND: Sit-stand workstations (SSWs) appear to be becoming increasingly more commonplace in workplaces. However, the factors that underpin the purchasing decisions of SSWs, and the support provided to complement their use, is unknown.

AIM: This study aims to provide an understanding of the use, implementation and purchasing process of SSWs from different organisations perspective in Australia.

METHODS: Target participants for this cross-sectional, mixed-methods study are employees responsible for furniture purchasing decisions within their desk-based organisation, with recruitment channels Australia wide. Participants were asked to complete an online survey to capture the current use of SSWs in workplaces. A subsample was then invited to undertake an interview to further understand the purchasing process and challenges in implementing SSWs.

RESULTS: To date, 97 participants have completed the online survey and five interviews have been conducted. Preliminary findings from the survey showed that 84% (n=81) of workplaces have provided their employees with SSWs. Most of these workplaces do not monitor the use of SSWs (71%, n=61) and do not use any strategies to enhance its usage (82%, n=62). Half of the workplaces don't provide any training on the appropriate use of SSWs (51%, n=41). Participants in the interviews highlighted a lack of guidance in using SSWs and the need for training programs to support the use and uptake of SSWs.

CONCLUSION: The majority of organisations sampled to date provide at least some of their employees with SSWs; however, there is a need for more resources to support the optimal use of these workstations.

Keywords: *sit-stand workstation, sitting, workplace, office workers*

Clinical predictors of outcome following hip arthroscopy

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STUDY DESIGN: Prospective case series.

BACKGROUND: Hip pain is associated with reduced muscle strength, range of movement (ROM) and function. Hip arthroscopy is undertaken to address coexistent intra-articular pathologies with the aim of reducing pain and improving function.

OBJECTIVES: Create a decision tree using baseline hip strength, range of movement (ROM) and demographics that describes clinical predictors of improvement at 6-months post-surgery.

METHODS: Patient characteristics, hip strength and ROM, and International Hip Outcome Tool (iHOT33) scores were collected pre-operatively and 6-months post-operatively from seventy-eight individuals (49 men, age 32±8) undergoing hip arthroscopy. Associations between significant change and patient characteristics were determined and a classification and regression tree developed to show which variables best predicted successful outcome. Odds ratios (OR) and 95% CI's were also calculated.

RESULTS: At 6-months post arthroscopy, average iHOT33 scores improved from 40/100 (±18) to 60/100 (±24), 67% of participants reported positive change, 45% reported their symptoms as acceptable and 4% reported no symptoms. Best predictors for improvement were hip flexion strength and body mass. Of those with flexion strength >288Newtons (N); 21% reported improvement. For participants with flexion strength <288N and body mass >89.5kg; 39% improved. Those with flexion strength <288N and body mass <89.5kg; 86% improved with odds 15x higher than those stronger and heavier (OR=15.05[4.56, 49.60]).

CONCLUSION: Sixty- seven percent of participants were improved at 6-months, of those, 86% of individuals with hip flexion strength <288N and weighing <89.5kg reported improvement post-surgery with odds 15x higher than those who didn't fill both these criterion.

Keywords: *Hip, arthroscopy, Strength, Range of Movement, PROM*

Influence of body position on dynamics of the pelvic floor measured with transperineal ultrasound imaging in men

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AIMS: (i) To determine the feasibility of transperineal ultrasound (TPUS) as a sonography technique for visualising pelvic landmarks associated with pelvic floor striated muscle contraction; (ii) compare the resting positions of pelvic landmarks between sitting and standing; (iii) compare the effects of different body positions on pelvic floor muscle contractions.

METHOD: 35 men awaiting surgery for prostate cancer volunteered to participate. Participants were instructed to perform a sustained, submaximal contraction in sitting first and then in standing. Movement of pelvic landmarks with contraction were visualised in real-time using a TPUS technique.

RESULTS: Feasibility of TPUS as an assessment tool for was demonstrated through accurate visualisation of three pelvic landmarks (mid-urethra (MU), bulb of the penis (BP) and the anorectal junction (ARJ)) in >95% of images in standing. Analysis of pelvic landmark resting position revealed that ARJ was in a more caudal and ventral position and UVJ was in a more caudal position in standing than sitting. Vector analysis – as an estimate of puborectalis (PR) muscle length - demonstrated that both landmarks were shorter in standing than sitting. ARJ was also able to displace further cranially in standing than sitting with contraction. No differences in MU or BP landmark resting position or displacement during the course of a contraction were apparent between body positions.

CONCLUSIONS: TPUS is a feasible sonography technique for visualising three pelvic landmarks in a population of men with cancerous prostates; puborectalis is shortened in standing and lengthened in sitting at rest in men and is capable of greater cranial shortening in standing than sitting during a pelvic floor contraction.

Keywords: Pelvic Floor, Men, Posture, Ultrasound

Multi-directional hip strength, physical function and dynamic balance in people with unilateral knee osteoarthritis compared to healthy age-matched controls: A cross-sectional study.

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BACKGROUND: Understanding associations between multi-planar hip strength, function and dynamic balance in people with knee osteoarthritis (KOA) may direct more targeted exercise prescription, improving patient outcomes.

AIMS:

- 1) Determine if hip strength and balance differs between limbs in people with unilateral KOA and matched controls
- 2) Explore whether hip strength is related to function and balance in people with unilateral KOA

METHOD: 21 participants (13 men; 62.9±8.6 years) with unilateral KOA and age- and sex-matched healthy controls were recruited. Hip flexion, extension, abduction, adduction, external and internal rotation strength was measured using hand-held dynamometry. Torque was normalised to body weight. Function was measured using 40-metre fast-paced walk test (40mFPWT), 30s chair-stand test, and stair-climb test (SCT). Dynamic balance was assessed using the Star Excursion Balance Test (SEBT). Statistical analyses included mixed model analysis of variance (ANOVA), post-hoc analyses, and Pearson's correlations ($\alpha = 0.05$).

RESULTS: KOA participants demonstrated lower hip adduction strength in the symptomatic compared to non-symptomatic limb (mean difference 0.09, 95% CI 0.01-0.17Nm/kg). Hip abduction (0.29, 0.04-0.54Nm/kg), adduction (0.31, 0.07-0.57Nm/kg) and extension (0.24, 0.01-0.48Nm/kg) strength was lower in KOA participants compared to controls. Dynamic balance was worse on the symptomatic than non-symptomatic limb of KOA participants (anterior 0.04, 0.02-0.06mm/m; postero-medial 0.04, 0.02-0.07mm/m; postero-lateral 0.22, 0.05-0.39mm/m) and to controls (anterior 0.13, 0.05-0.21mm/m; postero-medial 0.22, 0.1-0.34mm/m). Hip strength in all planes was correlated with 40mFPWT, SCT and balance ($p < 0.05$). When designing exercise programs to improve walking, stair negotiation and/or balance in people with KOA clinicians should consider multi-planar hip strength deficits.

Keywords: *Knee Osteoarthritis, Hip strength, Balance*

A systematic review of mechanism-based classification systems for pain experienced in the musculoskeletal system

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BACKGROUND: Pain is a major issue. Despite major advances in the understanding of pain, many patients still suffer from persistent symptoms. A key factor is the failure to recognise and target different mechanisms that underlie the persistence of pain for individual patients. Many authors argue for a mechanism-based classification of pain. However, the field is challenged by inconsistencies and wide variation in terms, definitions and characteristics.

AIM: This study aimed to: (1) systematically review all mechanism-based classification systems in the literature that address pain experienced in the musculoskeletal system; (2) synthesise and identify convergent and divergent themes amongst identified systems; (3) identify synonymous terms; and (3) propose an overarching mechanism-based classification incorporating views presented in the literature.

METHOD: Three databases were searched for any paper that discussed a mechanism-based classification of pain experienced in the musculoskeletal system. Papers were screened for eligibility and included papers were fully reviewed. Data were extracted and evaluated for quality. Details of definitions, underlying mechanisms, and characteristics were extracted then qualitatively synthesised based on thematic analysis. The identified mechanism-based pain categories were summarised based on the thematic analysis.

RESULTS: Wide variability exists in the terms used to identify pain categories. In some pain categories, there is consistency in how they are defined, however not all authors agree on the features that characterise each pain category. Synthesis of the available literature suggests that pain can be broadly classified into that maintained by ongoing nociceptive input, neuropathic mechanisms (peripheral or central), and central sensitisation or "nociplastic" mechanisms.

Keywords: pain, mechanism, classification, musculoskeletal

Implementation of the Netball KNEE Program in community netball clubs

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BACKGROUND: Little is known about the implementation of injury prevention programs in community netball. This cross-sectional observation study aimed to determine whether community netball coaches implemented the Netball KNEE program with players aged seven years and older. Coaches from four community netball clubs participated in this study.

METHOD: One training session ($n = 67$) was observed to determine if coaches used activities from the Netball KNEE as intended, modified or not at all during training sessions, and whether feedback was provided.

RESULTS: None of the teams performed the recommended number of activities, without modification. Only 11.8%, 17.6% and 13.6% of the recommended number of KNEE activities were performed as intended in the 7-10 years, 11-13 years and ≥ 14 years age groups, respectively. Warmup/footwork activities were more frequently performed than strength, balance and agility activities (all $p < 0.001$). Feedback was required in 65.5% of activities, but was frequently not provided when required (55.7%).

CONCLUSION: Implementation of the KNEE program is low in community netball, particularly activities to train strength, balance/landing and agility. Lack of provision of feedback on technique is concerning as improving movement patterns is a key aim of injury prevention programs.

Physiotherapy management of chest trauma in a major tertiary trauma centre*Emily Daniel¹, Drew Bignell², & Peter Thomas²*

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INTRODUCTION: To describe the current physiotherapy management of patients presenting with chest trauma.

METHOD: A retrospective chart audio of 100 consecutive episodes of inpatient admissions for chest trauma in 2018. Physiotherapy services over Days 1-7 were audited.

RESULTS: Physiotherapists reviewed 99% of all patients and on average commenced treatment within 25.4 ± 13.5 hours of admission. The average frequency of reviews was 0.8 ± 0.4 times per day (range 0-5), with ongoing high rates of service provision all days audited (Day 2 - 79%, N=99; Day 7 - 71%, N=66). Physiotherapy was provided predominantly in a surgical ward or intensive care unit setting. Mobilization, deep breathing exercises, incentive spirometry and supported cough manoeuvres were the most common treatments. Upper and lower limb exercises were also commonly utilized. For intensive care patients, manual hyperinflation and endotracheal suction predominated. Use of additional therapies like non-invasive ventilation (2%), positive expiratory pressure (2%) and thoracic mobility exercises was low. Only 16% of patients developed significant clinical signs of pulmonary complications, but these were mostly transient with only one patient displaying signs on more than one day. Pulmonary complications were associated with intensive care unit admission and the presence of haemothoraces. The level of bed rest was high (Day 2 - 41%, N=40, Day 7 = 28%, N=18) with main limitations to mobilization including orthopaedic injuries and delays in obtaining orthopaedic mobility orders (Day 2 - 23%, N=9). The median length of stay was 9.5 days, with intensive care unit admission and multi-trauma associated with an increased length of stay. The level of mobility achieved in hospital significantly affected discharge destination. The frequency of adverse events related to physiotherapy appeared low, with low blood pressure the most common incident (n=5).

CONCLUSIONS: Physiotherapists contribute regularly to the multi-disciplinary management of chest trauma patients throughout their length of stay. While the rate of pulmonary complications is low, hospital length of stay is long and the rate of discharge to rehabilitation is high.

ABSTRACTS: PAEDIATRICS

Experiences of children with fetal alcohol spectrum disorder and their families: A critical review

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BACKGROUND/PURPOSE: Evidence suggests that children with fetal alcohol spectrum disorder (FASD) experience challenges across many areas of their daily lives and often require inter-professional input. Current intervention research focuses largely on the remediation of impairments by single-discipline professionals. Inter-professional interventions are not often provided, and environmental factors, children's overall daily functioning, and their strengths are rarely considered. Recent studies have emphasised the need for an integrated system of care for children with FASD, incorporating medical, allied health, and education services, to facilitate open communication and support for the children's complex needs. To develop such a system of care, it is important to first identify the impact of FASD on children's functioning during daily activities in different environmental contexts. This study aimed to review the current literature on the impacts of FASD using a critical interpretive synthesis approach.

RESULTS: This critical review revealed that whilst many studies discussed child-specific impairments, they did not consider the impact of these on the performance of daily activities. Several studies discussed caregiver experiences and challenges raising a child with FASD; however, no studies investigated the lived experiences from children's perspectives. Additionally, the focus on deficits overshadowed investigation into the strengths of children with FASD, leaving a gap in the picture of their daily lives.

CONCLUSION: Children with FASD experience many daily challenges; however, how these impact on their performance of activities remains unclear. Further research is required to determine the strengths that children with FASD demonstrate and the challenges impacting their daily functioning within different environmental contexts. Insights gleaned from such research would inform the development of appropriate inter-professional intervention and collaboration.

Keywords: Fetal alcohol spectrum disorder, impacts, daily functioning, children and families

Canine assisted occupational therapy for children on the autism spectrum: Parents' perspectives

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INTRODUCTION: Occupational therapy is one of the most frequently accessed therapy services by families with children on the autism spectrum. Engagement, an intentional, active, and focused interaction with the environment, people and objects, is crucial to the therapeutic process and foundational to the achievement of occupational goals. Canine assisted therapy has been proposed as a possible adjunct to goal directed occupational therapy to enhance therapy engagement for children the autism spectrum.

OBJECTIVE: To gain understanding of how parents perceive the engagement of their children on the autism spectrum in goal directed occupational therapy with and without canine assistance.

METHODS: An interpretive description design was chosen to provide an in-depth exploration of parents' experiences of participating in canine assisted occupational therapy sessions with their children diagnosed on the autism spectrum. Purposeful sampling was used as parents recruited were participants within a current randomised control trial. Data was collected through the use of semi-structured, telephone interviews by an experienced occupational therapist and transcribed verbatim.

RESULTS: Nine mothers and one father agreed to take part. Participants were parents of a child between the ages of four to six years with a diagnosis of autism spectrum disorder level 1 or 2. Six themes emerged which captured parents' perceptions of how their children participated within canine assisted occupational therapy. Themes included therapist qualities, goal directed (canine assisted) therapy, emotional safety, therapy engagement, and generalization.

DISCUSSION: Parents described that the skilful incorporation of the therapy dog by the occupational therapist appeared to accelerate the development of a therapeutic relationship and engagement in goal directed interventions. The presence of the dog alone, however, was not considered sufficient to engage the children. Instead the dog was suggested to act as a social lubricant which allowed the child to engage in therapy whilst the therapist, child relationship developed.

CONCLUSION: Parents described the relationship at children were able to develop with the therapy dog assisted them to engage with the therapist and with the therapy tasks. It was however the skills the therapist brought to the therapy session and how these were used to maintain a goal directed intervention facilitated by the inclusion of the therapy dog that was seen to be most influential.

Keywords: occupational therapy, canine assisted therapy, autism, engagement, parents

Sense of safety: Links between childhood adversity, attachment patterns, and sensory sensitivity in adults

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BACKGROUND: Adverse childhood experiences and environments, which are associated with attachment insecurity, have long-lasting impacts on a person's health, physiology, and quality-of-life. Clinicians have identified that people who experienced childhood adversity and trauma exhibit atypical patterns of sensory processing, including hypersensitivity to stimuli. To date, there is limited research exploring the links between childhood adversity, attachment patterns, sensory sensitivity, and occupational engagement.

AIMS: The primary aim of this study is to determine whether increased sensory sensitivity in adults is associated with greater childhood adversity and attachment insecurity. The secondary aim is to identify whether these factors are associated with reduced occupational engagement.

METHOD: A cross-sectional online study was conducted with a community sample of adults who completed the following assessments: Risky Families Questionnaire, Experiences in Close Relationships Scale – Short, Highly Sensitive Person Scale (HSPS), Sensory Perception Quotient (SPQ), and the Engagement in Meaningful Activities Survey.

RESULTS: Preliminary analyses revealed increased sensory sensitivity (HSPS and SPQ) was associated with increased childhood adversity and attachment anxiety. Childhood adversity, attachment anxiety, and attachment avoidance were each associated with poorer occupational engagement.

CONCLUSION: This is the first study to identify a link between childhood adversity and increased sensory sensitivity using the SPQ. While further longitudinal research is necessary to establish the directionality of this relationship, this finding suggests that clinicians should be aware of potential sensory sensitivity in individuals with histories of childhood adversity. This is also one of the first studies to identify links between attachment insecurity and poorer occupational engagement in adults.

Keywords: sensory sensitivity, childhood environment, adverse childhood experiences, attachment, occupational engagement

CyFiT Telehealth: Outpatient Physiotherapy Service for Children with Cystic Fibrosis

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BACKGROUND: Telehealth and telemonitoring is an emerging area of study in people with cystic fibrosis (CF), with the potential of increasing access to care, and minimising infection control risks to patients without compromising their health outcomes. To date, limited evidence is available to support the use of telehealth in paediatric population with CF in a clinical setting.

AIMS: This study aims to investigate the utility of a multimodal telehealth-based outpatient physiotherapy service and assess its effect on quality of life, functional exercise capacity, hospital admission and intravenous antibiotic requirements, lung function, processes of care, participation in activities of daily living, and health economics associated with operating an innovative service.

METHOD: This single centre, prospective, parallel, randomised, controlled, non-inferiority trial aims to recruit 110 children with CF between the ages 8 to 18 years of age. Participants will be randomised to the Usual Outpatient Physiotherapy Service group (Usual OPS) or the telehealth intervention group (CyFiT OPS). Quality of life, participation in activity of daily living, functional exercise capacity and patient perception of care will be examined every six months using the Cystic Fibrosis Questionnaire-Revised (CFQ-R), Children's Assessment of Participation and Enjoyment (CAPE), Preferences for Activities of Children (PAC) questionnaire, Modified Shuttle Test-25 (MST25), and Measure of Process of Care (MPOC-20) questionnaire. Physiological measurements collected during routine clinical visits such as spirometry, body weight and height, information will be retrospectively retrieved via a chart review at the end of the study.

DISCUSSION: We anticipate that this multi-modal telehealth service will deliver a comparable service to traditional face-to-face models. An alternative to existing outpatient physiotherapy services may potentially increase patient options for access to care and patient-orientated outcomes such as quality of life. If deemed appropriate, the new model of care can be integrated into clinical practice immediately.

Keywords: predictive health, telemonitoring, activity tracking, telehealth, cystic fibrosis

Does the use of a digital home exercise program improve exercise adherence in Pediatric Outpatient Caseloads? A Cohort, Observational Pilot Study.

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AIM: To determine the effect of utilizing digital home exercise programs (HEPs) on adherence in a pediatric outpatient setting. In addition, evaluate patient and clinician system usability of a commercial exercise prescription application.

METHOD: This observational cohort study used pragmatic sampling to recruit eligible participants between 6 to 18years. Individualized HEPs were prescribed using Physitrack[®]. Primary outcome measures, adherence to HEPs (using in-app tracking) and system usability scale (SUS) was used to assess usability and acceptability of Physitrack[®]. The secondary outcome, goal attainment was measured using one patient-specific goal using the Goal attainment scale (GAS).

RESULTS: Seventy-seven participants were recruited, data from 70 participants were analyzed. Participants had moderate adherence (median (IQR) = 37.97% (16.93 – 70.72)). Participants/carers (median (IQR) of 87.50 (75.00 – 95.00)) and clinicians (mean (SD) = 76.59 (\pm 18.52)) scored Physitrack[®] highly on SUS. There was a significant positive correlation between adherence and SUS scores. Majority of participants achieved their goal as measured on GAS, (GAS of 0 to +2 = 66.66%).

CONCLUSION: Digital HEPs, using Physitrack[®], resulted in moderate exercise adherence and was rated high in terms of its usability. However, it was difficult to conclude whether digital HEPs had an impact on goal attainment.

ABSTRACTS: PROFESSIONAL EDUCATION

The experiences of physiotherapy for individuals who identify as lesbian, gay, bisexual, transgender, intersex, queer or related identities (LGBTIQ+)

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BACKGROUND: Individuals who identify as LGBTIQ+ experience significantly poorer physical and mental health than heterosexual individuals. Barriers to healthcare are also greater, with LGBTIQ+ individuals reporting suboptimal care, discrimination and judgement from medical professions. Due to the intimate nature, it is possible there are barriers unique to physiotherapy services.

PURPOSE: To explore how individuals who identify as LGBTIQ+ experience physiotherapy in Australia.

METHOD: Individuals aged 18+, who self-identified as LGBTIQ+, and had attended physiotherapy were eligible to participate. Open responses were collected using a purpose-built online survey and analysed with thematic analysis. Descriptive statistics were used for quantitative responses.

RESULTS: 114 participants responded to the survey, with 108 meeting eligibility criteria. Four main themes were identified. Almost all participants reported experiences during physiotherapy interactions relating to at least one of: 1) 'assumptions' about participants' sexuality or gender identity; 2) 'proximity/exposure of bodies' including discomfort about physical proximity, touch, undressing and/or observing the body; 3) 'discrimination' including overt as well as a fear of discrimination; and 4) 'lack of knowledge about transgender-specific health issues'. Positive encounters were also evident at times. A number of ways to improve LGBTIQ+ physiotherapy experiences were supported including: diversity training, education specific to the LGBTIQ+ population, and open options for gender on forms.

IMPLICATIONS: LGBTIQ+ individuals experience erroneous assumptions by physiotherapists, discomfort, explicit and implicit discrimination and a lack of knowledge specific to their health needs. Diversity training, education specific to LGBTIQ+ health needs and open responses for gender on forms may improve provision of care.

Keywords: *diversity, inclusion, physiotherapy, LGBTIQ+*

Exploring what assists new graduate paediatric occupational therapists in learning to make intervention decisions when working with children and families

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BACKGROUND: It has long been identified that the transition from student to occupational therapy practitioner can be stressful. New graduate occupational therapists may face challenges in areas such as self-management, time and caseload management, working in teams, using skills and knowledge in practice, and reasoning and decision making. Whilst decision making is one area that new graduate occupational therapists find challenging, previous research has not explored the experience of learning to make decisions in practice.

AIM: To explore what assists new graduate paediatric occupational therapists in learning to make intervention decisions when working with children and families.

METHOD: A case study methodology (Yin, 2018) was chosen to explore how different workplace contexts might influence new graduate occupational therapists' experience of learning to make intervention decisions. The contexts were private practice, a hospital and health service, and nongovernment organisations. New graduate and more experienced paediatric occupational therapists working in these contexts participated. Data collection methods included semi-structured interviews, researcher field-notes, document/resource review, and reflective journals. Inductive and deductive analysis will assist in identifying which aspects of the organisation and the new graduates' personal and professional context influence the experience of learning to make decisions.

RESULTS: Preliminary findings indicate that new graduate occupational therapists working in paediatrics access support from within and outside of their workplace, depending on resources available and the workplace culture. These findings could be used to inform workplaces, universities and new graduates to orchestrate a successful transition to practice.

Making Better Drivers: The Role of Brain Stimulation and Hazard Perception Training

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Young drivers aged 16 – 24 years are overrepresented in crash statistics, making up less than 15% of the licensed driver population, yet accounting for over 25% of all road deaths. Research indicates that hazard perception, which is the driver's ability to recognise and respond to potentially dangerous driving situations, predicts crash risk. Furthermore, hazard perception training may accelerate the acquisition of hazard perception ability. Additionally, there is also emerging interest in the application of transcranial direct current stimulation (tDCS), to enhance driving performance by altering brain activity via electrical currents. As such, this project aims to combine training and Tdcs to enhance the hazard perception ability of novice drivers, thereby reducing their crash risk.

Bilateral excitatory (anodal) tDCS will be applied to the dorsolateral prefrontal cortices (DLPLF), as research has implicated both the left and right DLPFC in executive functions recruited in driving hazard perception (i.e., top-down attentional processing and impulse control). Twenty-five participants will attend two sessions of either sham or active stimulation. Whilst undergoing tDCS, participants will complete an assessment of hazard perception, whereby they will watch videos of a driving scene. A hazard will appear at any point in the video, and participants respond to the hazard via a mouse click. Bilateral anodal stimulation to the DLPFC is predicted to enhance performance on the hazard perception assessment, whereby participants will be quicker and more accurate in identifying hazards. This is the first in a series of studies investigating how training and tDCS can modulate hazard perception ability.

Keywords: hazard perception training, non-invasive brain stimulation, transcranial direct current stimulation, road safety, crash

Exploring the workplace mentorship needs of new-graduate physiotherapists; a qualitative study

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BACKGROUND: The transition from student to physiotherapist is typically characterised by a steep learning curve and experiences of stress and anxiety. Workplace mentorship is widely used to mediate this transition, yet little is known of new-graduates needs in this area. The aim of this study was to explore new-graduate physiotherapists' experiences of workplace mentorship and investigate their needs from mentoring to support their transition into professional practice.

METHOD: A qualitative study with an interpretive phenomenological analytical approach was used. Semi-structured interviews of fifteen employed new-graduate physical therapists were undertaken within their first three to six months of clinical practice.

RESULTS: Four key themes emerged from the data: 1) Preference for individualised mentorship; 2) Mentorship contributes to professional socialisation; 3) Mentorship is an asset in recruitment and retention and 4) Mentorship moderates perceptions of stress and anxiety.

CONCLUSIONS: New-graduate physiotherapists perceive workplace mentorship as a critical factor during the transition from student to clinician, which extends beyond the mentor and new-graduate to the wider team. New-graduates have a strong preference for individualised mentorship, which provides immediate support, professional socialisation and addresses perceived stress and anxiety associated with entering the workplace.

Keywords: New-graduate, physiotherapist, mentorship, support

Piloting the use of the Functional Communication Classification System (FCCS) with speech-language pathology students

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AIM: This study aimed to explore: 1) interrater agreement between novice raters, and 2) interrater agreement between novice and experienced raters when using three communication classification tools (CCTs) intended for use with children who have cerebral palsy (CP). This study also aimed to explore novice raters' perceptions regarding ease of use and their suggestions for improving the CCTs.

METHOD: Fourteen speech-language pathology (SLP) students watched eight videos of children with CP and rated their communication using the: 1) Viking Speech Scale (VSS), 2) Communication Function Classification System (CFCS), and 3) Functional Communication Classification System (FCCS). The same videos were also rated by an experienced SLP.

RESULTS: Interrater agreement between novice ratings was substantial for the VSS ($\kappa=0.68$), moderate for the CFCS ($\kappa=0.51$), and fair for the FCCS ($\kappa=0.32$). The interrater agreement between novice and experienced ratings was almost perfect for the VSS ($\kappa_w=0.84$), and substantial for both the CFCS ($\kappa_w=0.78$) and FCCS ($\kappa_w=0.68$). Novice raters reported that the VSS was significantly easier to apply than the CFCS and FCCS ($p=0.018$).

CONCLUSION: The interrater agreement levels indicate that all three tools are reliable when used by novice SLPs. Future research should include novice raters from other health disciplines.

ABSTRACTS: TELEREHABILITATION

Development of an active video game for the long-term maintenance of physical activity in people with COPD

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BACKGROUND: Chronic obstructive pulmonary disease (COPD) is the fifth leading cause of death in Australia. Exercise, as part of pulmonary rehabilitation, is one of the most effective approaches in the management of COPD. However, physical activity may not be maintained after the program finishes. Adherence to physical activity may be facilitated by utilising active video games, but there is limited evidence on what game features may be most effective and best received by this population.

AIM: A co-design process was undertaken to produce an active video game that meets the specific needs of people with COPD.

METHOD: In this study, an active mobile game for the long-term maintenance of physical activity was developed through a series of focus groups with 10 people with COPD who had finished pulmonary rehabilitation and a team of clinicians with experience in pulmonary rehabilitation.

RESULTS: This prototype mobile game has the potential to support people with COPD to regain and maintain their health and independence in the community. In addition, it demonstrates how researchers, clinicians, video game designers and people with chronic diseases can work together to create an entertaining game that promotes health behaviour change. Future research will test the effectiveness of this mobile game, compared with commercially available software, in improving or maintaining physical activity levels in people with COPD.

Keywords: Respiratory disease, video games, qualitative research



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