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PHYSIOTHERAPY CONFERENCE 2022

CONFERENCE ABSTRACTS

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Abstracts from the Physiotherapy New Zealand Conference 2022, held in Rotorua, New Zealand, from September 8–11, 2022 [https://doi.org.10.15619/NZJP/50.3.07]

Peer-reviewed abstracts are listed in order by first-named author under the following categories – classic, rapid 5, focussed symposium and fishbowl. The presenting author's name(s) is underlined.

Classic Abstracts

MANAGEMENT OF WOMEN WITH PREGNANCY-RELATED PELVIC GIRDLE PAIN: AN INTERNATIONAL DELPHI STUDY

Aldabe, D[1]., Lawrenson, P[2]., Sullivan, S. J[1]., Hyland, G[1]., Bussey, D. M[1]., Hammer, N[3]., Bryant, K[1]., & Woodley, S[1].

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Background: Pregnancy-related pelvic girdle pain (PPGP) affects a third of women during pregnancy and postpartum, negatively impacting their activity and participation. Clinical guidelines suggest a variety of conservative treatments with limited effectiveness. Additionally, the management of this condition varies among clinicians and between countries.

Purpose: This study aimed to reach a consensus on the essential elements of PPGP management through an international Delphi study involving women's health experts.

Methods: Eighty-seven international experts in the field of PPGP were invited to participate, and surveyed over three rounds. In Round 1 of the survey, open-ended questions were used to obtain feedback on 16 components of PPGP management previously identified by a focus group. Panel member feedback guided modification and refinement of questions for Rounds 2 and 3. A 5-point Likert scale was used to rate level of agreement, with a minimum threshold for consensus of $\geq$ 75% agreement set across all rounds of the survey.

Results: The response rate for participation in the panel was 50% (44/87), with 77% (34/44) of panellists contributing to all three rounds. After Round 3, 10 essential components of the management of PPGP reached consensus: pain education; postural and ergonomic advice; social and lifestyle factors; psychological factors, cultural considerations, strengthening exercise, other exercise, exercise precautions, manual therapy, and the use of crutches.

Conclusions: Ten components were identified that clinicians should consider in their management of women with PPGP. These components also provide a framework for future research into the conservative management of PPGP.

Implications: Managing patients with PPGP is complex, with experts across a range of health professions suggesting it is essential to consider several treatment components. While some components such as cultural and psychosocial aspects are evidence-based and important from a patient-centred case perspective, others such as pain neuroscience education and postural and ergonomic advice lack clinical evidence.

SUBACROMIAL BURSITIS AND SHOULDER PAIN: EXPLORING THE PREDICTORS FOR A NEGATIVE ANAESTHETIC RESPONSE

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Background: Subacromial bursitis is a common ultrasound finding in people with shoulder pain. It can be treated with bursal corticosteroid injection.

Purpose: The aim of this retrospective cross-sectional study was to (1) investigate the association between the presence of subacromial bursal pathology and response to subacromial anaesthetic injection; (2) identify variables predicting a negative anaesthetic response; and, (3) calculate diagnostic accuracy of predictors.

Methods: A total of 208 people with shoulder pain referred from primary care received an ultrasound guided local anaesthetic injection into the subacromial bursa following standardised clinical examination. Pain was recorded on a visual analogue scale and participants completed self-reported questionnaires. Kruskal-Wallis test, logistic regression analyses and diagnostic accuracy statistics were utilised.

Results: No difference in pain reduction post-injection was found between those with and without bursal pathology ($p < 0.05$). Five potential predictors of a negative anaesthetic response were identified, which did not reach statistical significance. Use of a cluster of any three predictors of a negative anaesthetic response (high occupational shoulder demands; high or low sport/recreational shoulder demands; no current history of night pain; loss of passive external rotation range of movement of more than 30° and shoulder pain reproduced on cervical spine testing) results in post-test probability of 93% (pre-test probability 69%).

Conclusions: Not all bursal pathology identified by ultrasound is symptomatic. The high specificity and moderate positive likelihood ratio associated with the presence of any three of the five predictors provides support for an assumption that a patient with such a finding would be more likely not to respond to targeted injection therapies

Implications: Ultrasound results should be considered alongside clinical findings to better inform decisions regarding most appropriate treatment. This may lead to a reduction in the use of unnecessary injections in patients with shoulder pain.

PERCEPTIONS OF A PHYSICAL ACTIVITY AND TEXT MESSAGING PROGRAMME FOR ADULTS WITH OBSTRUCTIVE SLEEP APNOEA

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Background: Obstructive sleep apnoea (OSA) is associated with increased morbidity and mortality from cardiovascular disease. Physical activity is protective against the symptoms linked to OSA and is a known moderator for cardiometabolic risk. However, physical inactivity is common in populations with high cardiometabolic risk and low motivation is a known barrier to being physically active. Our feasibility study focused on a physical activity and text messaging programme to enhance motivation and support physical activity behaviour change in adults with OSA.

Purpose: To determine the perceptions of adults with OSA who completed a feasibility study, focussed on physical activity and motivation through text messaging.

Methods: Fifteen-minute phone interviews were conducted with 17 individuals., A semi-structured question format was used, with an emergent design approach employed to allow for flexibility including unscripted follow-up questions. Interviews were recorded and transcribed verbatim. The collated data were analysed using Braun and Clarke's thematic analysis. Initially, 148 codes were identified and through a process of repeated review and interpretation of the coded data, eight themes were eventually generated.

Results: The key themes were exercise is worthwhile; the impact of text messages; content and delivery of texts; motivation; connection; barriers and enablers; self-management; and investment in the study.

Conclusion(s): The majority of interviewees regarded exercise as 'worthwhile' and recognition of this appeared to be linked to positive changes in motivation over time. The personalised nature of the text messages and a sense of connection to the study appeared to further support participant motivation. Recognition of the need to take responsibility for physical activity behaviour over time suggested there was a move towards self-management.

Implications: A physical activity programme in conjunction with personalised text messaging shows promise as a means of supporting adults with OSA to make positive changes to their physical activity behaviour.

PHYSIOTHERAPIST AND PATIENT PERCEPTIONS OF STRATIFIED ACUTE LOW BACK PAIN CARE IN NEW ZEALAND

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Background: While acute low-back pain (LBP) has a generally favourable course, ongoing pain and recurrent pain are common. Better management of acute LBP may decrease long-term impact on individuals and decrease costs. STarT Back is a stratified care approach, identifying subgroups of patients at risk of persistent LBP and providing matched care. Although clinically and cost-effective, its use in New Zealand (NZ) is inconsistent.

Purpose: To explore patient and physiotherapist perspectives about their experience of LBP care in NZ, and the acceptability of STarT Back.

Methods: Six online focus groups were conducted with people with LBP (four) and physiotherapists (two). Data comprising transcriptions of audio recordings, notes, and reflective statements were analysed using reflexive thematic analysis.

Results: Participants with LBP reported uncertainty navigating a chaotic clinical environment. Many reported "shopping around" for different treatments. They felt STarT Back provided a good framework, allowing clear treatment expectations. Discussion of psychosocial factors was acceptable if conducted by a trusted health professional and clearly explained.

Physiotherapists were confident recognising psychosocial factors during assessment, but not in managing these factors. Many preferred onward referral of patients to psychologists or general practitioners. Physiotherapists identified differences between health systems in the United Kingdom and NZ meaning patients with acute LBP accessed care much earlier in NZ. Hence, anxiety or fear of movement displayed by patients was understandable, rather than a risk factor for poor outcome. They were more likely to consider use of STarT Back if symptoms persisted.

Conclusion: Benefits of STarT Back were identified for people with acute LBP. However, adaptations to the NZ context are necessary.

Implications: STarT Back could benefit patient experience; Discussion of psychosocial factors is acceptable; Physiotherapists need further training to develop confidence in managing psychosocial factors in patients with acute LBP; STarT Back requires further research before implementation in NZ.

ADAPTING A QUALITATIVE DESCRIPTIVE REHABILITATION RESEARCH METHOD TO SUPPORT A MÄORI-CENTRED APPROACH

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Background: As healthcare professionals and researchers, it is essential that we work to address the inequities in access to and outcomes from rehabilitation, experienced by Māori. Amplifying Te Ao Māori (Māori worldviews), Māori whakaaro (opinions and ideas) and mātauranga (knowledge) in rehabilitation research and practice is an important step toward achieving these aims.

Purpose: This presentation describes the process undertaken to adapt an existing qualitative descriptive research method, aimed at establishing the user requirements for robotic devices for upper-limb rehabilitation following stroke, to support a Māori-centred approach.

Methods: A bicultural research team (Māori and non-Māori) utilised the Meihana Model of health and the Hui Process for clinical engagement to adapt the research method.

Results: Developing bicultural working relationships within the research team supported us to ensure that the needs of whānau Māori, both as part of the research team and as research participants, were prioritised. The Hui Process was applied through researcher interactions with participants and influenced their entire journey throughout the research. Changes to the recruitment process, information provided and initial engagement enhanced whakawhanaungatanga (connections). Data collection was tikanga led, facilitated by a Māori researcher opening and closing interactions with karakia (blessing), and mihimihi (introductions) meaningfully shared between researchers and participants to support the cultural safety of all involved. Application of the Meihana Model enabled a conceptual and structural reframing of the interview. The interviews addressed not only concepts of person, whānau (support network), wairua (spirituality), tinana (physical health), hinengaro (psychological and emotional wellbeing), taiao (physical environment) and iwi katoa (services and systems) as they related to rehabilitation robotics but also the broader concepts of Nga Hau e Wha (the historical and societal influences on Māori) and Nga Roma Moana (how Māori world views may influence Māori in clinical settings).

Conclusion: Explicitly applying Māori models of health and healthcare provision to research design supported us to enhance the cultural responsiveness of the research.

Implications: Rehabilitation researchers often seek to include a Māori perspective in their research but may not have the confidence or skillset to be able to conduct Māori-centred research. This presentation offers practical ideas and tools which bicultural research teams can apply to future research to empower Māori voices and practices.

DEVELOPING AN INTERDISCIPLINARY PATHWAY OF CARE FOR NEW ZEALANDERS WITH TEMPOROMANDIBULAR DISORDERS

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Background: Temporomandibular disorders (TMD) are musculoskeletal conditions involving the jaw, characterised by ongoing pain and mechanical symptoms. Up to 75% of people may have signs or symptoms of TMD, yet only 5–10% seek care. Patients report difficulty in navigating healthcare systems to find knowledgeable practitioners, obtaining adequate and consistent information, and receiving timely care. The complexity of TMD creates significant clinical challenges, causing many clinicians to lack confidence in assessing and managing patients. Despite numerous treatment approaches, reports suggest a notable failure to treat people effectively and efficiently, which is attributed to a lack of integrated care. TMD management is largely unfunded with increasing service costs, creating significant barriers to care. New Zealanders with TMD are often referred to dental services, where appointment waitlists are extensive, creating a bottleneck effect and limiting access to treatments, such as physiotherapy. Consequently, an interdisciplinary model of care is needed to improve health outcomes in New Zealanders with TMD.

Purpose: This programme of research aims to identify successes and limitations of current TMDcare pathways, issues surrounding equity of access and service delivery, patient and clinician priorities for care.

Findings: Research activities include review of clinical practice guidelines, clinical audits, and stakeholder engagement. Guidelines suggest multidisciplinary approaches to care yet acknowledge the lack of integration in current practice. Clinical audit of one tertiary TMD service indicates a waitlist of over 250 patients, where 52% have been referred by their general practitioner. Clinician engagement confirms the lack of integration of TMD care in NZ, with few referrals to physiotherapy. Conclusion and implications: This programme of research aims to develop an interdisciplinary framework that addresses inequities in access to TMD services through priority setting, identifying facilitators/barriers to care, and integration of clinical specialties. This represents a collaboration between Māori and non-Māori researchers, clinicians, patients, and stakeholders.

PHYSIOTHERAPY TREATMENT AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION IMPROVES SUBJECTIVE RATINGS OF KNEE SYMPTOMS AND FUNCTION

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Background: Patient outcomes following anterior cruciate ligament reconstruction (ACLR) are influenced by multiple factors, including the quantity of pre- and post-surgical physiotherapy treatment. However, the relationship between the quantity of physiotherapy treatment and patient outcomes following ACLR is unclear.

Purpose: To determine the relationship between the quantity of physiotherapy treatment and patient-reported outcomes (PRO) following ACLR in NZ.

Methods: We used PRO data from the NZ ACL Registry and physiotherapy treatment data from the Accident Compensation Corporation (ACC). Multiple regression analysis was used to determine the likelihood of subjects achieving a Patient Acceptable Symptom State (PASS) on the Knee Injury and Osteoarthritis Outcome Score (KOOS) or a normative score on the Marx Activity Rating Scale (MARS).

Results: Following data matching and exclusions, 5345 subjects were included in the final analysis (male = 53%; average age at ACLR = 29.4 years). Average number of physiotherapy treatments in the 24 months post-ACLR was 11.7 ± 10.5. The percentage of subjects achieving a KOOS^4 PASS score and normative MARS score at 24 months post-ACLR was 75% and 28% respectively. When adjusted for confounders (age at ACLR, gender, days from ACL injury to ACLR, presence of vocational rehabilitation), physiotherapy treatment between 0–12 months post-ACLR was associated with an increased likelihood of achieving a KOOS^4 PASS score ($p = 0.0035$). When adjusted for confounders, physiotherapy treatment was not associated with an increased likelihood of achieving a normative MARS score ($p = 0.15$).

Conclusion(s): Physiotherapy treatment following ACLR increases the likelihood of achieving an acceptable level of symptoms after 12 months but is not associated with achieving a 'normal' level of activity.

Implications: Following ACLR, physiotherapy treatment may improve how a patient feels about their knee. However, factors other than physiotherapy treatment i.e., age, gender, delay to surgery, are likely to influence post-surgical activity levels more.

PREPARATION AND SUPPORT FOR PHYSICAL ACTIVITY ENGAGEMENT FOLLOWING CABG SURGERY IN NEW ZEALAND

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Background: Engagement in physical activity following coronary artery bypass graft (CABG) surgery has many potential physical and psychological barriers. People who have undergone CABG surgery need to self-manage their return to physical activity engagement, including overcoming barriers, after discharge home.

Purpose: The aim of this study was to examine the current practice in New Zealand hospitals to prepare and support people to engage in physical activity following CABG surgery.

Methods: A questionnaire was sent to all New Zealand hospitals that provided cardiac surgery services and granted locality authorisation for participation in the study. One health professional was requested to complete the questionnaire on behalf of their hospital service.

Results: Locality authorisation was granted by nine of the 11 hospitals. Responses were received from 5/5 public and 4/6 private hospitals. All sites reported they prepared people to engage in physical activity. However, there were inconsistencies in the advice provided for the frequency and rate of progression of exercise; timing of reintroduction of activities of daily living; and sternal precautions. Potential gaps identified from the responses included a lack of information on safe engagement for resistance exercise; limited facilitation of self-management skills, including problem solving to manage potential barriers; and a general lack of follow up support provided to individuals not able to attend an outpatient cardiac rehabilitation programme.

Conclusion(s): The findings provided a benchmark for current practice in New Zealand and identified areas where guidelines for preparation and support may be enhanced.

Implications: Including evidence-based information regarding resistance exercise, and a greater emphasis on facilitating self-management skills may result in improved outcomes for patients, particularly those unable to access outpatient cardiac rehabilitation. The inconsistencies in preparation and follow up support that are currently provided across services in New Zealand indicate the potential need for enhancing guidelines for practice in this area.

THE EFFECT OF AGE, SEX, THORACIC KYPHOSIS AND HEIGHT ON ACROMIOHUMERAL AND CORACOHUMERAL DISTANCES. AN ULTRASONOGRAPHIC STUDY

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Background: Shoulder pain has been associated with changes in the acromiohumeral distance (AHD) and coracohumeral distance (CHD). While manual therapy techniques may influence shoulder position, little is known about how these anatomical measures may be influenced by age or other factors in healthy individuals.

Purpose: To determine, in healthy volunteers, the relationship between anatomical parameters (AHD and CHD) and independent variables including age, sex, thoracic kyphosis and height.

Methods: One hundred and four participants (52 male, mean age ± SD 45.9 ± 16.0 years) without a history of shoulder pain underwent ultrasonographic assessment of AHD (in neutral and shoulder abduction) and CHD (in neutral and shoulder elevation). The length and height of the thoracic curvature (C7 to T12) were measured and expressed as an index. Associations between variables were explored using multiple linear regression analysis.

Results: Age, sex and thoracic index were not significantly related to the measures of AHD or CHD ($p > 0.5$). Height showed a significant positive relationship with AHD in neutral ($p < 0.05$) and CHD (in neutral and shoulder elevation; $p < 0.05$), explaining between 5.6% and 14.2% of the variation in these measures.

Conclusion: These results clarify that measures of AHD and CHD in healthy volunteers are not associated with age, sex or thoracic kyphosis, yet do relate to stature.

Implications: When considering shoulder pain, physiotherapists require an understanding of factors that influence measures of the subacromial and subcoracoid spaces in healthy individuals. These data provide a basis for further research in people with shoulder disorders.

EVALUATING THE CERVICAL SPINE IN CONCUSSION. A SCOPING REVIEW OF STANDARDISED CONCUSSION EVALUATION TOOLS

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Background: It can be a challenge for clinicians to evaluate trauma that could represent cervical spine injury, concussion, or both. These conditions share common mechanisms of injury and symptom profiles, yet distinct aetiology and management. In the clinical evaluation of concussion, a range of standardised tools are available but the extent to which such tools include cervical spine evaluation is unclear.

Purpose: To identify a variety of standardised clinical concussion evaluation tools, examine if these tools include cervical spine evaluation, and describe the characteristics of cervical spine evaluation included. To have an informed discussion about how cervical spine evaluation might best be approached after a concussion event.

Methods: A structured literature search was performed in eight databases to identify standardised clinical concussion evaluation tools. Each tool was then reviewed for cervical spine evaluation, and the cervical spine evaluation components of tools were extracted and summarised.

Results: The structured search identified 82 standardised clinical concussion evaluation tools. Eleven tools included cervical spine assessment related primarily to the evaluation of red flags and neck pain as a symptom, just three included physical examination.

Conclusion(s): Few standardised clinical concussion evaluation tools include cervical spine evaluation, and even fewer include physical examination. Cervical spine evaluation in concussion may benefit from closer alignment with established approaches to screening for clinically significant cervical spine injuries such as the Canadian C-Spine rules and NEXUS criteria. This has the potential to improve screening for red flags and assist in identifying cervicogenic symptoms.

Implications: We advocate for an approach to cervical spine evaluation in suspected concussion that includes screening for dangerous mechanisms of injury, neurological deficit, distracting injury and neck pain; and physical examination of neck range of motion and neck tenderness.

DRIVERS AND BARRIERS TO THE DEVELOPMENT OF ADVANCED PHYSIOTHERAPY PRACTITIONER ROLES IN NEW ZEALAND

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Background: Musculoskeletal complaints affect one in four New Zealanders, accounting for 25% of its total annual health spending. Internationally, Advanced Physiotherapy Practitioner (APP) roles have demonstrated the ability to impact on orthopaedic waiting lists and improve timely patient access to specialist care and services. In 2011, Health Workforce New Zealand, recommended up-skilling physiotherapists into APP roles to work in collaboration with multidisciplinary teams to deliver future musculoskeletal healthcare. Nevertheless, these roles have not gained traction in New Zealand (NZ).

Purpose: This study investigated the drivers and barriers to APP role development in the NZ context.

Methods: An exploratory single embedded case study design was used. Document analysis, qualitative survey data analysis, and semi-structured interviews were utilised as data sources. A purposive sampling strategy was used. Data were analysed using qualitative content analysis and triangulated to ensure rigour.

Results: The results of this research identified access to care, service needs, government drivers, fiscal constraints, legislative drivers, surgeon-led drivers, and profession-led drivers as the key drivers for APP role development in NZ. Interviewees identified that APP role development barriers relate to NZ's dual healthcare system with split funding streams between the Ministry of Health and Accident Compensation Corporation. Additional barriers include a lack of recognition, lack of funding, lack of training, lack of career pathway, lack of title recognition, inter-professional barriers, and intra-professional barriers.

Conclusions: This research identifies a niche for the APP role in NZ and explores the reasons for the limited uptake of the APP roles in the NZ context despite these strong drivers. These findings need to be considered by the stakeholders when considering the APP role implementation in the NZ context.

Implications: Development of APP role has implications for patients, practice, profession, universities, and legislative body. To ensure its promising future, APP roles need to be tailored to meet NZ's unique healthcare drivers and reduce the barriers.

WHAT MATTERS MOST TO NEWLY QUALIFIED PHYSIOTHERAPISTS AS THEY NAVIGATE THEIR EMERGING PROFESSIONAL IDENTITY?

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Background: The first five years post-graduation are a critical time for the novice practitioner as they internalise a range of implicit values, behaviours and understandings that become embedded in their future professional identity. Although often viewed in research as an individual acquisition, professional identities are developed within communities of practice. These socio-material and contextual structures have had limited attention in research to date.

Purpose: We conducted a qualitative study to investigate the experiences of the novice physiotherapist, to understand how they navigate the day to day demands of their role to explore the contextual factors that influence their emergent professional identity. This presentation reports on one aspect of the analysis conducted as part of the supervised 4th year student research project and focuses on the value that newly qualified physiotherapists placed on feeling supported in their roles.

Methods: Semi structured interviews were conducted via video-calling with (n = 12) physiotherapists from across Aotearoa, who were up to five years post-graduation from a New Zealand physiotherapy qualification. Data were analysed using thematic analysis.

Results: Support mattered, however, what was conceived of as support varied across individuals and contexts. Physiotherapist who reported satisfaction with their role and a strong sense of professional identity described clear and responsive support systems within their communities of practice.

Conclusions: Communities of practices need to be able to respond to diverse preferences for support.

Implications: Those concerned with entry-to-practice and professional development may wish to consider how established communities of practice are able to respond to and meet these needs. Managers and the industry more generally could consider how preferred types of support early in a career may relate to retention rates for mid-career physiotherapists.

CO-DESIGNING AN OSTEOARTHRITIS PATIENT GUIDEBOOK FOR AOTEAROA NEW ZEALAND: MORE THAN JUST PRETTY PICTURES

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Background: Osteoarthritis (OA) affects one in ten people in Aotearoa New Zealand (AoNZ), costing the healthcare system hundreds of millions of dollars annually. Effective patient education resources are considered a crucial part of high-value OA care, with OA guidebooks a common method of patient education and knowledge translation. Despite the widespread availability of OA guidebooks and written resources, few are designed for the AoNZ context, and little research exists about the development and testing of these resources.

Purpose: We aimed to co-design an OA guidebook specific for AoNZ, drawing upon the experiences and perspectives of a diverse group of people with direct knowledge and understanding of OA.

Methods: We used a multi-phase, collaborative co-design approach (idea generation, development, testing, refinement), including prototyping, workshop, and individual data collection. Participants were purposively sampled and included patients, the public, patient advocacy groups; a wide range of healthcare professionals active in OA management; and health researchers. Data were analysed using qualitative content analysis.

Results: Across the four phases of the collaboration, data were collected via five workshops and 32 individuals. Data analysis identified five key themes that guided the construction of the book: (1) *The 'Goldilocks zone' – considering cultural, social, and psychological impacts;* (2) *What you write matters;* (3) *Keeping it simple*; (4) *The value of design;* (5) *Take-home messages*.

Conclusion(s): We experienced a high level of stakeholder engagement. Findings showed that participants liked aspects of the prototypes and highlighted several areas that merited improvement, including balancing the bi-cultural context, the tone of written content, and the communication messaging implied by some images and layout.

Implications: It is never too early to engage stakeholders when developing health education resources, and don't underestimate the time required for meaningful collaboration. This bespoke resource will be freely available for OA management services in AoNZ.

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VARIABILITY OF COUGH ASSIST (MI-E) SERVICE PROVISION ACROSS NEW ZEALAND FOR PEOPLE WITH NEUROMUSCULAR DISORDERS

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Background: Neuromuscular disorders (NMD), affecting approximately 22.8 per 100,000 New Zealanders, can cause reduced cough strength leading to an inability to clear secretions from the proximal airways and subsequent respiratory morbidity or mortality. Mechanical insufflation-exsufflation (MI-E or Cough Assist) machines may assist with secretion clearance. The number of, and criteria for, MI-E prescription is unknown in NZ. Experiences of physiotherapists as MI-E providers and people with NMD as consumers of MI-E are also unknown.

Purpose: To explore MI-E service provision for people with NMD.

Methods: This research used mixed-methods to 1) survey DHB's about number of MI-E machines and guidelines for prescription; 2) interview physiotherapists about MI-E training and experience with administering MI-E and; 3) interview people with NMD about their experiences of being administered MI-E. Survey data was descriptively analysed. Interview data was analysed thematically.

Results: The number of MI-E machines in each DHB was highly variable and not proportionate to the population with NMD in that DHB area. Physiotherapists described variable amounts of MI-E training and access to MI-E. Participants with NMD described differences in service provision between DHBs; several participants bought their own machine.

Conclusion(s): There is inequitable service delivery of MI-E machines occurring at meso and micro system levels across NZ. Physiotherapists were, at times, forced to make difficult decisions when determining who had access to this limited resource. Participants perceived the MI-E machine not as a "nice to have" but as "life-saving".

Implications: National service specifications, with dedicated funding, which would support the provision of acute and community funded MI-E machines for patients with complex respiratory conditions, are required to ensure equitable access. Educational resources and regular training opportunities for physiotherapists, and people with NMD and their carers are required to ensure upskilling of MI-E recommendations and practicalities of use.

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NEXT GENERATION PHYSIOTHERAPY: FUNCTIONAL ACTIVATION USING VIRTUAL REALITY IN CHRONIC PAIN MANAGEMENT

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Background: Improving function in people with chronic pain is vital. Virtual reality (VR) games may make functional activation more fun, promoting greater success with therapy.

Purpose: To determine the feasibility of conducting a randomised controlled trial to explore the efficacy of VR as an intervention for people with chronic pain and to assess the acceptability of VR treatment for this patient cohort.

Methods: The feasibility study utilised a mixed-method approach. Twenty-nine subjects with chronic pain attending a tertiary pain service were randomised to an active VR intervention or physiotherapy treatment as usual (TAU). The TAU group completed a 6-week waitlist (WL) preceding treatment, to act as a no treatment control group. The VR intervention involved physiotherapy directed, twice weekly immersive games focussed at increasing movement. Seven VR participants also completed semi-structured interviews to assess their perceptions of the intervention.

Results: Of 99 patients referred to physiotherapy, 53 were eligible, 29 enrolled, and 17 completed the trial. VR group participants exhibited greater improvements in activity levels, pain intensity, pain interference, as well as greater treatment satisfaction, and perceived improvement compared to both WL and TAU. Relative effect sizes were larger when VR was compared to WL, and smaller when VR was compared to TAU. Qualitative analysis revealed three themes; 1) VR is an enjoyable alternative to traditional physiotherapy; 2) VR has functional and psychological benefits despite continued pain, and 3) a well-designed VR set-up is important.

Conclusion(s): VR was highly acceptable, producing positive effects compared to no treatment and similar outcomes as TAU. A larger RCT is warranted, however low recruitment indicates that a different setting or multicentre trial is needed.

Implications: VR is growing in popularity and has been deemed effective for managing acute pain episodes. Its use in chronic pain management is currently being investigated with early work demonstrating positive outcomes, however further research in this field is required.

ESCALATED CARE PATHWAYS – A VISION FOR THE FUTURE OF PHYSIOTHERAPY

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Background: In 2020 the Accident Compensation Corporation (ACC) initiated a series of pilot programmes named Escalated Care Pathways (ECP) to improve the pathway of people with knee, shoulder and spinal injuries. The pilots were aimed to improve four key areas: Faster return to work, improved utilisation of services, more timely access to surgery and rehabilitation and improved equity and access for Māori and pacific peoples. Careway, based in Auckland, was one of the five successful pilot groups and was an inclusive model to join physiotherapists and specialists.

Purpose: The purpose of this presentation is to outline the processes and systems that were developed by Careway to meet the aims of ECP.

Methods: A series of working groups were set up to develop clinical pathways for acute knee injuries (ACL), traumatic rotator cuff tears, and leg dominant low back pain. The groups consisted of leading orthopaedic surgeons, private practice physiotherapists, sports physicians, academics and consumer groups These groups developed resources and processes that were innovative, evidence based and patient centred.

Results: The new areas of innovation were: 1) tight criteria for entry to the pathway for surgery and/or well guided conservative care; 2) The use of patient reported outcome measures at baseline and 6 weekly intervals; 3) the use of key strength measures per body site; 4) clear measures of success at discharge; 5) the early implementation of vocational rehabilitation.

Once agreed, these pathways were delivered as a series of education packages to over 55 orthopaedic surgeons and 500 physiotherapists in the Auckland region.

Conclusion(s): To date these pathways have been well accepted by surgeons, sports physicians, physiotherapists and vocational therapist. Further evaluation is due in the next 18 months.

Implications: ACC is keen to support these pathways and move towards this being a better way of improving patient outcomes and working with key health providers.

BARRIERS AND FACILITATORS FOR PHYSIOTHERAPISTS ENGAGING WITH THE CAREWAY ESCALATED CARE PATHWAY PILOT PROGRAMME

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Auckland University of Technology

Background: In 2019, ACC launched a series of pilot programmes termed escalated care pathways (ECP); one of the successful pilots in the Auckland being Careway. Careway aims to provide a smoother, simpler, and faster recovery for New Zealanders with ACC knee, shoulder, or spine injuries. These areas of focus were chosen as they are injuries of high cost to ACC with respect to rehabilitation and earning-related compensation

Purpose: The aim of this study was to explore the barriers and facilitators to physiotherapists engaging with the new Careway pilot.

Methods: Qualitative study. Semi-structured focus group methodology was used to complete a service audit. The focus group of New Zealand physiotherapists involved in the Careway pilot were transcribed verbatim and analysed using content thematic analysis.

Results: Two overarching domains emerged for both barriers and facilitators: Physiotherapist perspectives, and perceived patient perspectives. Factors which were commonly cited as barriers to engagement included challenges undertaking outcome measures (OM), limited treatment time when implementing OMs, communication disconnects, logistical difficulties, and patient-related psychological factors. These barriers corresponded with suboptimal patient outcomes, particularly for Māori, Pasifika, and other minority cultures within NZ who tend to be of low socioeconomic status. Factors which were commonly cited as facilitators included having a clear rehabilitation plan, strong therapeutic relationship, and improved access. These factors were associated with improved patient outcomes, and removal of key barriers to healthcare for the aforementioned populations.

Conclusion(s): The Careway programme is providing clear rehabilitation benefits for physiotherapists and patients, however there remain barriers to rehabilitation which are yet to be overcome. It is evident that biopsychosocial factors which reinforce patient-centred care facilitate patient engagement, and therefore contribute to removal of rehabilitation barriers and improved patient outcomes.

Implications: Future research should investigate further way to reduce barriers and increase engagement in the current rehabilitation process

TRIALS AND TRIBULATIONS OF NON-INCREMENTAL, CLINICIAN-LED PRACTICE CHANGE: TWO CASE STUDIES

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Background: Practice change comes in many forms, and is driven by many factors. Small scale, incremental practice change often occurs in response to new evidence. Large scale practice change often require bigger stimuli, such as a pandemic.

Purpose: This abstract describes the processes of introducing two techniques: ventilator hyperinflation (VHI) and point of care lung ultrasound into physiotherapy practice in Wellington Hospital Intensive Care Unit (ICU).

Methods: The pathway for VHI introduction was: discussion with ICU director, commencement of clinical use by senior ICU physiotherapist, presentation to ICU Clinical Practice Group, guideline development, training of senior ICU physiotherapists, and development of a training package for rotational ICU physiotherapists. Lung ultrasound was a novel technique for Wellington ICU physiotherapists. The pathway for its introduction: online e-learning, attendance by senior physiotherapist at ICU consultant education sessions, guided clinical use with lung ultrasound expert, independent practice during usual clinical work, scan reviews with ICU consultant, practise on healthy volunteers.

Results: VHI is now used by all senior physiotherapists in Wellington ICU, and the past two rotational physiotherapists have completed the competency package. It is an accepted physiotherapy treatment with medical and nursing staff.

There are now three other physiotherapists learning to perform lung ultrasound, under the guidance of the senior ICU physiotherapist, and supervision of an ICU consultant.

Conclusion(s): The main barrier to introduction of these techniques was the reliance on passionate staff to overcome "existing practice" inertia. The main facilitator was a strong relationship with the senior medical staff in Wellington ICU.

Implications: Clinician-led practice change is vital, but difficult without interdisciplinary support.

CO-CONSTRUCTING A WEBSITE FOR PEOPLE WITH SHOULDER PAIN AND HEALTH PROVIDERS

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Background: Improving access to evidence-based information for people living with musculoskeletal conditions is likely to enhance patients' ability for self-management and to discuss treatment options with health providers. Existing websites relating to shoulder pain are generally limited to information about patho-anatomy without considering psychosocial and neurophysiological influences.

Purpose: To co-create a website to improve health literacy and self-management for people with shoulder pain in Aotearoa New Zealand.

Methods: We used participatory action research (PAR) with five cycles. A culturally-diverse group of participants were recruited from the community, organisations and professional email lists. Six physiotherapists and 7 people with shoulder pain participated. Break-out groups were formed for people with shoulder pain, physiotherapists and a mixed group for Māori and Pasifika. Meetings 2 to 4 were recorded, transcribed and thematically analysed. Themes were used to plan and construct the website. The University's Office of Māori Development provided te reo (sub)headings. We used the Flesch Kincaid Reading Ease Scale to ensure acceptable readability level, following requirements for HONCode certification.

Results: Themes were grouped as Content (Understanding terminology for the shoulder girdle; Why we feel pain; Whole body health; Common conditions; and Treatment options), Presentation (images reflecting Aotearoa people) and Further Support. PAR members assessed two iterations of the website, providing feedback that enabled culturally important concepts to be interwoven with research-based evidence. This enhanced inclusivity and participants were satisfied with the process and the product.

Conclusion(s): PAR was effectively used to obtain input for content considered important by people with shoulder pain and by physiotherapists. This guided co-creation of the website.

Implications: Co-constructing patient resources with health providers and people living with musculoskeletal conditions is likely to enhance external validity, encourage use and collaborative decision making. Continuous feedback and updates for the website will make improvements and maintain relevance.

A HYBRID MODEL OF REHABILITATION IN MILD TRAUMATIC BRAIN INJURY: A CO-DESIGN PROCESS

Taylor, D[1]., Clay, L[1]., Shaikh, N[1]., Binks, S[2]., Wellacott, E[1]., Bloy, C[4]., Signal, N[1]., Wilkinson M[3]., & Howard-Brown, C[3].

[1]Auckland University of Technology; [2]SHI Global; [3]ABI Rehabilitation, [4]University of Auckland

Background: Telerehabilitation, or the delivery of rehabilitation interventions remotely, has been slowly developing over the last decade. The COVID experience has dramatically impacted on the desire for telerehabilitation approaches both by health professionals and patients.

Purpose: To develop a localised prototype telerehabilitation package for people with mild traumatic brain injury (mTBI) through engagement with end-users at ABI Rehabilitation (Auckland).

Methods: A modified experience-based co-design approach was used. A focus group with clinicians (n = 9) and semi structured interviews with 8 participants (5 people with mTBI and 3 clinicians) generated knowledge about the experience of rehabilitation after mTBI. Member checking followed by a co-design workshop with clinicians and a patient representative was used to develop a prototype hybrid telerehabilitation programme using an existing web-based platform.

Results: Building and maintaining a positive therapeutic relationship was highlighted as the most important component when designing a telerehabilitation intervention. The first face-to-face appointment was the crux to establishing trust and rapport. Factors to consider included the content (general to specific), format (written, videoconferencing, video, podcast, phone) and timing of information delivery (pre-assessment, assessment, programme, discharge) that was individualised and culturally appropriate. Participants found the web-based platform flexible and discussed the importance of operational simplicity. Issues with connectivity, digital literacy and privacy needed consideration along with alternative methods to optimise vestibular rehabilitation in the virtual space. A hybrid option combining in-person and telerehabilitation as appropriate was deemed ideal.

Conclusion: A prototype hybrid telerehabilitation package has been developed using co-design principles. A future implementation study will assess the clinical utility of this package.

Implications: User experience is important when designing new interventions. Telerehabilitation is an option that can overcome such barriers as distance from a specialist centre, availability of health care staff, culture and language and provide a mechanism by which patients 'remain connected to' the service.

CLINICAL EXERCISE PHYSIOLOGY AS PART OF A MULTI-DISCIPLINARY APPROACH TO MANAGING CHRONIC CONDITIONS

Wood, M., & Stratton, M.

Auckland University of Technology

Clinical exercise physiologists (CEPS) are allied health professionals that provide advanced exercise physiology services to clinical populations with chronic diseases. CEPS are well placed to help address the individual needs of chronic disease patients and the burden it places on New Zealand's health system. CEPS utilise evidence-based best practice to develop individualised exercise prescription directly derived from assessments to meet the unique needs of various clinical populations. This is largely achieved through cardiopulmonary exercise testing which encompasses respiratory gas analysis to provide a full physiological profile and biomechanical analysis to quantify physical function. Most CEPS work with a wide range of patients to improve their physical capacity, mitigate disease progression, and prevent and/or delay secondary complications. Within the NZ setting, CEPS work in collaboration with health professionals as part of a wider rehabilitation team. Developing a multidisciplinary approach to chronic disease management builds on the strengths of both Physiotherapists and CEPS. Future health reform should include innovative service delivery models that offer a seamless continuum of care.

RAPID 5 Abstracts

DOES TREATMENT RECEIVED FOR HIP OR KNEE PAIN AND OSTEOARTHRITIS CONFORM TO GUIDELINE RECOMMENDATIONS?

Abbott, J., Drake, K., Chapple, C., & Sharma, S.

University of Otago

Background: International evidence suggests that people with hip or knee pain or osteoarthritis (OA) do not receive the most-recommended treatments that have been established in contemporary evidence-based guidelines. There is no recent Aotearoa New Zealand evidence regarding the uptake of interventions in this population.

Purpose: The aim of this cross-sectional survey was to describe the uptake of treatments recommended in the evidence-based guidelines among people with hip or knee pain or OA in Aotearoa New Zealand.

Methods: We conducted a population-based survey, mailed to randomly selected adults aged ≥ 18 years registered to vote in four lower North Island electorates. Respondents were asked if they have, in the preceding 12 months, experienced hip pain or knee pain, and also if they have been told, by a doctor, that they have OA. Respondents who reported the presence of joint pain were asked to tick boxes representing the types of treatment they have accessed and received.

Results: Of 494 people mailed the survey, 108 (22%; 45.9% female) responded. 37 participants (34.3%; 95% CI 25–43%) reported hip pain [of which 18 (48.6%) reported diagnosis with hip OA], 43 (39.8%; 31–49%) reported knee pain [of which 16 (37.2%) reported diagnosis with knee OA]; 19 (17.6%; 9–27%) reported both hip and knee pain. Of people with hip pain, 9–12 (24–32%) reported receiving guideline-recommended core (first-line) treatments; 19–23 (51–62%) reported receiving second-line treatments; 5 (13.5%) reported receiving physiotherapy. Of people with knee pain, 10–20 (23–47%) reported receiving first-line treatments; 12–22 (28–52%) reported receiving second-line treatments; 7 (16.3%) reported receiving physiotherapy.

Conclusion(s): The majority of people with hip or knee pain or OA in Aotearoa New Zealand do not receive the most-recommended treatments that have been established in contemporary evidence-based guidelines.

Implications: Improved access and delivery of recommended treatments for OA is urgently needed in Aotearoa New Zealand.

URINARY INCONTINENCE MANAGEMENT AFTER STROKE: AN EXPLORATORY QUALITATIVE STUDY OF PHYSIOTHERAPY PRACTICES IN AOTEAROA

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Background: Urinary incontinence (UI) post-stroke is associated with poor rehabilitation outcomes. Stroke guidelines recommend a “structured assessment” for those with incontinence; the role of physiotherapists (PTs) in assessment or management is not described.

Purpose: This study aimed to explore New Zealand PTs’ perceptions of their role in UI assessment and management post-stroke.

Methods: Eight PTs from across New Zealand, who worked with patients following stroke, were interviewed. Data were analysed using the General Inductive Approach.

Results: PTs involved in continence care post-stroke varied across hospital (less involvement) and community settings (more). Four main themes were derived: 1) “PTs’ view of their scope of practice”: Physiotherapy practice focused on activity limitations and participation restrictions to achieve patient goals. Therefore, physiotherapy management indirectly addressed functional UI. 2) “Resources and training of PTs”: PTs considered that a lack of time and formal training, as well as uncertainty about who holds the responsibility for managing UI, limited their involvement with UI assessment and management. 3) “Collaboration between professions”: PTs viewed nurses as the lead professionals for UI following stroke. They believed that more collaboration within the healthcare team would improve UI care. 4) “PTs views of UI assessment and management”: PTs believed that UI management post-stroke is often focused on containment rather than recovery and that harmed patients’ choice and dignity.

Conclusion: PTs felt they did not have primary responsibility for UI assessment and management, and lacked confidence to contribute – except indirectly – to continence care. PTs thought more collaborative discussions around continence decision-making and goals would improve patient care.

Implications: UI management post-stroke is complex and requires skilled health care professionals and excellent interprofessional collaboration. Further education and training for UI management following stroke is needed to improve PTs confidence to include this within their scope of practice.

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THE IMPACT OF DESIRE-TO-VOID AND URINARY INCONTINENCE ON DUAL-TASK PERFORMANCE DURING GAIT ON OLDER WOMEN

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Background: Aged women with urinary incontinence (UI) have a higher risk of falling than aged women without UI. People who fall and present with UI have increased frailty and significant associated hospitalisations, mortality, and morbidity. UI may interfere with cortical gait control, as UI symptoms are associated with abnormal gait patterns in adult women. UI may provide distraction leading to a cognitive cost during walking.

Purpose: This laboratory-based study aimed to assess: (1) the dual-task effect of the desire-to-void on gait performance during motor and cognitive dual-tasking and (2) the correlation between UI, desire-to-void and gait performance during motor and cognitive dual-tasking.

Methods: We invited women aged ≤65 through public advertisements in the community. Participants performed the time up and go test (TUG) in five different conditions: (1) no-desire-to-void baseline; (2) no-desire-to-void with motor dual-task; (3) no-desire-to-void with cognitive dual-task, (4) desire-to-void with motor dual-task and (5) desire-to-void with cognitive dual-task. Outcome measures: Time to perform TUG and the dual-task effect DTE. Severity of UI (ICIQ), cognition status (MOCA), history of falls and balance confidence (ABC) were also assessed via questionnaires.

Results: A total of 20 women (74 ± 6.10 years) participated. The ICIQ scores show no incontinence ($n = 4$), slight ($n = 7$), mild ($n = 7$) and severe ($n = 1$) incontinence. DTE results show that experiencing a full bladder while walking had a detrimental effect on motor ($p < 0.001$) and cognitive ($p < 0.001$) dual-task conditions. There was a weak correlation between the ICIQ and TUG baseline ($r = 0.48$, $p=0.03$) and a moderate correlation between ICIQ and TUG motor ($r = 0.52$, $p = 0.01$) and cognitive ($r = 0.52$, $p = 0.01$).

Conclusion(s): The desire to void negatively impacts dual-task walking performance in older women, even more so when they have UI.

Implications: Cognitive dual-task walking performance with a full bladder increases the risk of falling.

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WHAT HELPS OR HINDERS FALLS PREVENTION IN RESIDENTIAL AGED CARE

Binns, E., **Bright, F., Parsons, J., Peri, K., Taylor, L., Kerse, N., & Taylor, D.**

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Background: The fall rate for older adults living in residential age care (RAC) is higher than that of older adults living in the community. Research on exercise interventions to prevent falls in RAC has had mixed results. A randomised controlled trial (RCT) tested the effectiveness of a progressive strength and balance group exercise programme (Staying UpRight) delivered to RAC residents by physiotherapists, including people living with dementia.

Purpose: To explore what might help or hinder embedding Staying UpRight in usual practice in RAC and provide context for the findings of the RCT.

Methods: An effectiveness-implementation hybrid type 1 model, with a qualitative study undertaken secondary to the RCT. An Interpretive Descriptive methodology was utilised, with data collected from semi-structured interviews, focus groups and emails with RAC staff who had been involved in the RCT. Data was analysed using conventional content analysis.

Results: Embedding Staying UpRight as designed was constrained by organisational decisions on the use of funding and resources. Physiotherapists effectively adapted Staying UpRight to suit their environment or incorporated elements from the programme into their existing exercise groups.

Conclusion(s): Our findings highlighted that in the tight financial environment of RAC there is a lack of resource available to increase current levels of physiotherapy input to embed the Staying UpRight programme.

Implications: Different models of delivery or ways of working need to be explored if the current funding model for RAC does not change.

COGNITIVE AND FALLS PREVENTION EXERCISE COMBINED FOR PEOPLE LIVING IN RESIDENTIAL AGED CARE

Binns, E., Kerse, N., Peri, K., Cheung, G., & Taylor, D.

Auckland University of Technology

Background: People living with dementia (PLwD) have a higher falls risk, as cognitive impairment compromises control of gait and balance. Effective falls prevention exercises for healthy older adults may not work for PLwD. Cognitive Stimulation Therapy (CST) is a programme that can improve global cognition in PLwD. A programme combining cognitive (CST) and physical exercises may reduce falls in PLwD.

Purpose: To assess the feasibility of undertaking a full scale randomised controlled trial to test the effectiveness of a combined (CogEx) programme in decreasing falls in PLwD.

Methods: A mixed methods feasibility randomised controlled trial. Participants lived in residential aged care, were > 65 years old, had a Montreal Cognitive Assessment score of 10 to 26, and were able to participate in a group. Functional balance exercises were combined into the CST group structure (CogEx). Participants were randomised to CST or CogEx. Both groups were for an hour twice a week for 7 weeks. Participants completed pre- and post-intervention measures of cognition, balance and mobility. Attendance and exercise completion were recorded. Participant focus groups and facilitator interviews captured experiences of the programme.

Results: Thirty-six residents were screened with 23 participants randomised to intervention (CogEx, n = 10) or control (CST, n = 13). Ten facilitators completed intervention training. Exercises were combined into the hour-long CST session; however, balance training was limited as participants exercised predominantly in sitting. The facilitators felt the participants engaged more and were safer in sitting.

Conclusion(s): Falls prevention exercises can be combined into the CST structure however, the fidelity of CogEx was poor.

Implications: Other components of the study design need further consideration before evaluation using a randomised controlled trial is feasible.

DIAGNOSIS AND MANAGEMENT OF SHOULDER PAIN BY NEW ZEALAND PHYSIOTHERAPISTS: A NATIONAL SURVEY

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Background: Surveys conducted overseas suggest that physiotherapists follow best-practice evidence-based recommendations when managing patients with shoulder pain. There are no comparable studies in New Zealand.

Purpose: To: (1) determine current assessment and management of patients with shoulder disorders by physiotherapists in New Zealand and compare it to best evidence; (2) assess their confidence in making a diagnosis; and (3) determine whether caseload was associated with correct diagnoses of clinical vignettes.

Methods: Cross-sectional online survey of New Zealand registered physiotherapists (n = 5702). Physiotherapists were surveyed about their assessment, management, and prognosis of four common shoulder disorders presented as vignettes. Best evidence was determined using findings from Cochrane reviews, systematic reviews, and clinical guidelines.

Results: 234 participants (response rate 4%) completed the survey. 63% participants were female, 78% worked in private practice and 73% had a shoulder caseload of ≥ 5 patients per week. Participants commonly included physical examination of cervical in addition to the shoulder joint. Responses on further investigations and referral to other healthcare professionals varied between vignettes. Advice, exercise, and education about exercise were the most prevalent interventions used for all four vignettes. Most participants were moderately or extremely confident in their diagnosis across all vignettes. We only found differences in correct diagnosis between participants with low and high shoulder caseload for Vignette 2 – acute rotator cuff tear (90% vs 80%, χ^2= 3.55, Fisher's p = 0.047).

Conclusion(s): Most physiotherapists self-report managing patients with shoulder disorders in accordance to best practice and clinical guidelines. Overall, participants were confident with their diagnosis. Clinicians with higher shoulder caseload were more likely to correctly diagnose patients with acute rotator cuff tear when compared to clinicians with a low shoulder caseload.

Implications: Findings from this study can inform continued the development courses, undergraduate and postgraduate studies, and special interest groups in New Zealand.

FAMILY CENTRED CARE – WHAT DOES IT MEAN AND WHY PHYSIOTHERAPISTS SHOULD CARE

Carrington, L.

University of Otago

Background: Family-centred care is considered best practice paediatric physiotherapy care, however the specific processes of putting family centred care into action for children with biological, psychological, or social needs are not well explored in the literature, making it difficult for clinicians to apply the principles confidently and consistently.

Purpose: This scoping review aimed to synthesise the literature illustrating ways in which family-centred care is implemented for children with biopsychosocial needs and identify outcome measures used in the studies.

Methods: A scoping search across seven databases for publications published between 2005 and October 2020 was conducted. A total of 42 studies met the inclusion criteria.

Results: Interventions of family-centred care were implemented in diverse ways, evident by the heterogeneity in study populations, methodology and reporting. Health condition or impairment focused outcome measures were standard with few outcomes measuring participation or activity. Practical elements of family centred care were identified included, intervention content, parental support methods, and theoretical concepts such as collaborative decision making, goal setting and individualised programming, from which a framework of key processes was created.

Conclusion(s): Key attributes of family-centred care are used inconsistently making standardised implementation difficult. It is unclear whom researchers consistently consider as integral to the 'family unit', and goal setting processes do not always include the child themselves. Outcome measures are strongly focused on health condition, body structure or functional limitations, with a paucity of measures focused on activity, participation, or psychosocial factors.

Implications: Paediatric physiotherapists may use this study to identify key attributes of family centred care and the framework to guide their processes of putting family centred care interventions into action for this population of children and their families. Consideration of outcomes meaningful to the child and whānau may lead to exploration of a wider range of holistic measures.

MĀORI THERAPISTS' PERSPECTIVES OF DEVICE AND PROGRAMME REQUIREMENTS FOR EFFECTIVE UPPER LIMB ROBOTIC REHABILITATION FOLLOWING STROKE

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Background: For people who have had a stroke, upper limb impairment is common and frequently limits the ability to perform everyday life activities. There is growing interest in the development and implementation of robotic devices to augment rehabilitation for the upper limb following stroke. However, there is limited knowledge about what a robotic device needs to entail to deliver efficacious rehabilitation outcomes, or the delivery methods which might support or hinder their implementation in clinical practice. Given the high prevalence and continued disparities experienced by Māori in access to, and outcomes from, stroke rehabilitation, it is essential that rehabilitation services meet the needs of tangata whenua. Drawing on mātauranga Māori to inform the development and implementation of rehabilitation technologies like robotic devices, may improve stroke rehabilitation outcomes for Māori.

Purpose: This research aims to explore Māori clinicians' perspectives of device and programme requirements for effective upper-limb robotic rehabilitation with Māori whānau following stroke.

Methods: This research utilised a Māori-centred approach alongside user-centred design principles. The research method was informed by the Meihana Model of Health and the hui process for clinical engagement. Physiotherapists, occupational therapists, and rehabilitation assistants who work in stroke rehabilitation and who identify as Māori were invited to take part in focus groups or interviews to discuss their perspectives. Interviews were audio recorded, transcribed verbatim and inductively analysed using qualitative thematic analysis.

Results: In this late breaking presentation the researchers will present preliminary results from six interviews.

Conclusion: The findings will shape the development of user requirements to inform the future design and implementation of robotic devices for upper limb stroke rehabilitation which are culturally responsive to the needs of Māori.

Implications: Robotic devices are rehabilitation tools which can be utilised to improve function following a stroke. Currently, uptake of robotic devices is low. This research will highlight device design and implementation parameters which are more conducive to supporting engagement in rehabilitation and improving rehabilitation outcomes for Māori.

MUSCULOSKELETAL CHEST PAIN PREVALENCE IN EMERGENCY DEPARTMENT PRESENTATIONS: A RETROSPECTIVE CASE NOTES REVIEW

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[1]University of Otago; [2]Bodystance Inc, Dunedin

Background: Musculoskeletal causes are described as a common cause of chest pain, yet prevalence data is limited. To improve outcomes for people with musculoskeletal chest pain a greater understanding of this condition is required.

Purpose: To estimate the prevalence of suspected musculoskeletal chest pain presenting to Southern District Health Board emergency departments (EDs) through a retrospective case notes review.

Methods: Electronic records for people > 16 years presenting to Dunedin, Southland and Lakes EDs with chest pain were extracted for the three-month period 1 March to 31 May 2021. All records with the words 'chest pain' in the triage or diagnosis description were included. Following a procedure manual developed by consensus and refined through piloting on 10% of the sample, records were categorised for chest pain type based on the diagnostic code, departure destination and documented clinical impression.

Results: A total of 1420 records were extracted: Dunedin Hospital 674, Lakes District Hospital 113; Southland Hospital 633; Sex male 736 (52%), female 684 (48%). During analysis 122 records were excluded due to the person leaving prior to evaluation, age less than 16, nil chest pain in notes, or no note available. Mean age was 55.0 (SD 19.9) years. Categories for 1298 records were: 115 (9%) acute coronary syndrome; 149 (11%) other cardiac; 23 (2%) psychological; 83 (6%) gastrointestinal; 98 (8%) respiratory; 197 (15%) musculoskeletal; 615 (47%) undifferentiated; 18 (1%) other.

Conclusion(s): The findings provide a conservative estimate of the prevalence of suspected musculoskeletal chest pain presenting to New Zealand EDs, consistent with other reported estimates. The high prevalence of undifferentiated chest pain reflects the emergency context where the priority is to exclude potentially serious causes of chest pain.

Implications: Chest pain with suspected musculoskeletal causes is common, relative to other causes, and worthy of greater attention beyond excluding serious causes.

USING REAL-WORLD DATA TO DEVELOP A RESEARCH PROJECT: CASE STUDY FROM ACROSS THE DITCH

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[1]University of Newcastle; [2]Population Health Hunter New England Local Health District; [3]University of Sydney; [4]Nepean Blue Mountains Local Health District; [5]John Hunter Hospital, Australia

Background: Many clinicians are interested in undertaking research but struggle to identify and collect usable data. What clinicians often don't realise is that there is readily available data that can be used to answer important questions and assist with developing innovative solutions.

Purpose: To describe how readily available data sources can be used by clinicians to develop real world research projects.

Methods: A case study based on a research project looking at improving the management of patients with low back pain (LBP) in the emergency department (ED) will be used to highlight the opportunities available to clinicians. The project used five years of quantitative data from a clinical records audit to describe LBP ED presentations across a health district in New South Wales, Australia. We then collected qualitative data using semi-structured interviews and guided group discussions with ED clinicians (medical officers, nurses and physiotherapists) exploring clinician barriers, enablers and suggestions for how to improve management of patients with LBP.

Results: We began with an initial consultation meeting with the ED management team who identified challenges with managing patients with back pain. We analysed quantitative data which showed the significant drain presentations for LBP place on EDs (26,828 presentations, median time in ED 163 min, and 4,911 hospital admissions). This information was then used to secure buy-in from the ED management team to further examine the issue. We interviewed 21 clinicians who identified a range of barriers and enablers to optimal patient care. Based on this information we then worked with clinicians to design potential improvement strategies.

Conclusion(s)/Implications: This presentation will highlight the potential data that can be used to inform research within the clinical setting. To do this it will use a real-world example of improving the care of LBP in the ED of a large Australian public hospital.

STRATEGIES TO IMPROVE SERVICE LEVEL OUTCOMES FOR LOW BACK PAIN IN THE EMERGENCY DEPARTMENT

Davidson, S[1,2]., Williams, C[2,3]., Kamper, S[3,4]., Haskins, R[5]., Petkovic, D[5]., Feenan, N[5]., Smith, D[5]., O'Flynn, M[5]., & Pallas, J[5].

[1]University of Newcastle; [2]Population Health Hunter New England Local Health District; [3]University of Sydney; [4]Nepean Blue Mountains Local Health District; [5]John Hunter Hospital, Australia

Background: Low back pain (LBP) causes high distress and disability worldwide. LBP is fifth most common reason for presentation to Australian emergency departments (EDs) and managing these patients is a significant challenge for EDs.

Purpose: To assess the effect of a suite of co-designed strategies on the flow of patients with LBP through the ED.

Methods: An interrupted time series design to assess change in ED service level outcomes. The co-designed strategies were based on pre-identified enablers and barriers to managing LBP presentations in ED. The strategies included: i) a rapid-access follow-up Physiotherapy clinic; ii) an evidence-based, culturally safe patient education resource; iii) an evidence-based education program for ED clinicians (medical officers, nurses, physiotherapists); and iv) a department-specific ED pathway for LBP.

Results: Final results will be presented at the conference. Based on a planned interim analysis there were 4,982, 780 and 291 ED presentations before, during and after implementation. The mean age of patients was 50.0 years (SD, 20.1), 53% were female, and 6.3% identified as Aboriginal. 7.1% of patients were referred by their general practitioner, and 73% were triaged as semi- or non-urgent. We observed an increase in the median (Interquartile range) time in ED from 231mins (138–325 min) pre-implementation to 262 (169–356) min after. However, the proportion of patients admitted to the hospital wards decreased from 30% (pre-phase) to 25% (post-phase). The number of patients returning to ED within five days increased from the pre-phase (5.7%) to the post-phase (6.5%).

Conclusion(s)/Implications: Based on interim analysis, the strategies trialed may have led to an increase in the time spent in ED and a reduction to inpatient hospital admission rates. Analysis of complete follow up data is underway and will be presented at the conference.

MOVING THE WOUNDED HAND: THE ROLE OF SILICONE IN WOUND CARE

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Purpose: Worldwide use of silicone wound products by physiotherapist's ranges from immersion of hand wounds in silicone oil to clinical trials evaluating the impact of silicone dressings on movement following knee joint replacement. However, the integumentary system and wound care is not taught in the NZ curriculum. Physiotherapists rely on other sources to accumulate evidence-based information. This review aims to summarise the use of silicone products used for upper limb wound care through a therapy lens

Methods: The study design used a PRISMA protocol and Boolean search strategy to combine keywords "wound healing" and "silicone" on seven electronic databases. Primary human studies of any design investigating wound care in the upper limb between 1940 till 2021 were included. Studies on intact skin, scar care, and "silicone-plus additive" were excluded.

Results: The initial search identified 3,723 publications, with the final review containing 52 studies. An increasing numbers of silicone studies have identified six different forms of silicone frequently used on burn, trauma, surgical, skin graft and skin tear wounds. Nearly 50% of wounds were located on fingers and hands. Three overarching indications for use spanned all silicone wound products, namely facilitating movement, reduction in pain, particularly during dressing changes, and the promotion of wound healing

Conclusions: Patients requiring rehabilitation frequently have a wound. Use of silicone products helps align wound care goals with therapy goals which are primarily reduction in pain to regain function and mobility. However, there is currently no recognised funding for physiotherapists to provide wound care.

USE OF PHYSIOTHERAPY CLINICAL OUTCOME MEASUREMENT IN TELEREHABILITATION IN NEW ZEALAND: A QUALITATIVE STUDY

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Background: Access to traditional in-person consultation and treatment have been significantly impacted during the COVID-19 pandemic. While research indicates that telerehabilitation is as effective as in-person rehabilitation, there is limited evidence describing "best practice" for physiotherapy clinical assessment during telerehabilitation.

Purpose: To explore the experiences and perceptions of New Zealand registered physiotherapists on the use of outcome measures in telerehabilitation.

Methods: A qualitative descriptive methodology was used. Semi-structured video interviews were conducted with 21 physiotherapists (Practice area n = 12, Musculoskeletal; n = 9, Neurorehabilitation) and transcribed verbatim. Data was inductively analysed using a conventional content approach.

Results: Planning and preparation for telerehabilitation sessions were deemed crucial. Physiotherapists selected outcome measures for use in telerehabilitation dependent on patient safety, environment, timings of measurement, digital infrastructure, patient literacy, and availability of a support person. Outcome measures were adapted ad-hoc for use in telerehabilitation e.g., oculomotor testing was adapted by getting the client to follow their own finger so eye movements could be observed by the therapist over the screen. Telerehabilitation provided greater understanding of the patients living situation, aiding the development of individualised management plans. However, issues around connectivity, privacy, challenges in establishing new therapeutic relationships and the validity of the modified outcome measures were raised. While the value of therapeutic touch and hand-on practice was emphasised during clinical assessment, alternative methods such as patient reported outcome measures and subjective assessment were preferred to inform clinical reasoning in telerehabilitation.

Conclusion(s): This study provides information on modified workflows, use of information and communication technologies, and strategies used to translate physiotherapy assessment skills to telerehabilitation.

Implications: An enhanced understanding of telerehabilitation practice provides the groundwork for the adaptation and validation of commonly used outcome measures for telerehabilitation. Development of feasible workflow practices and enhancement of digital health-infrastructure would support effective delivery of telerehabilitation as an adjunct to face-to-face practice.

DYSFUNCTION OF THE STRESS RESPONSE IN INDIVIDUALS WITH PERSISTENT POST-CONCUSSION SYMPTOMS: A SCOPING REVIEW

Farrell, G[1]., Wang, S[1]., Chapple, C[1]., Kennedy, E[1]., Gisselman, A[2]., Sampath, K[3]., Cook, C[4]., & Tumilty, S[1].

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Background: Ten to fifteen percent of individuals who sustain a concussion develop persistent post-concussion symptoms (PPCS). Preliminary evidence suggests that individuals with PPCS have a dysfunctional stress response, consisting of the autonomic nervous system (ANS) and hypothalamic pituitary adrenal-axis (HPA-axis). In the presence of a stressor, the ANS and HPA-axis work interchangeably to return the body back to homeostasis. It is plausible, with concussion as the initial stressor, that the development and maintenance of PPCS may be due to a dysfunctional stress response.

Purpose: Individually map the literature surrounding quantifiable changes of the ANS and HPA-axis to explore the extent of evidence for dysfunction of the stress response in individuals with PPCS.

Methods: Information sources were searched in June and October 2021. Studies were included if their population was classified with PPCS, and their study stated at least one quantifiable marker of the ANS or HPA-axis using non-invasive and clinical tools. Relevant studies were screened, and data was extracted.

Results: Thirty-seven articles were included in this scoping review. Most studies assessed quantifiable markers of the ANS (n = 34) in comparison to the HPA-axis (n = 2) and stress response (n = 1) (ANS and HPA-axis). The most common quantifiable markers of the ANS included heart rate (n = 20), blood pressure (n = 16), and heart rate variability (n = 10). Cortisol was the only included quantifiable marker of the HPA-axis (n = 2).

Conclusion(s): Evidence presented in this review supports quantifiable dysfunction of the ANS in individuals with PPCS. Further research is required investigating quantifiable dysfunction of the HPA-axis, and peripheral stress response (ANS and HPA-axis), in individuals with PPCS.

Implications: Understanding the role, and how to measure objectively and pragmatically, a dysfunctional stress response will help clinicians tailor more effective treatment pathways for individuals with PPCS.

A SUB-MAXIMAL EXERCISE TEST TO PREDICT AEROBIC FITNESS USING RATINGS OF PERCEIVED EXERTION IN CANCER SUFFERERS TAKING BETA-BLOCKERS

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Background: Aerobic fitness (peak oxygen consumption (VO2) and anaerobic threshold (AT)) is an important measure for risk stratification and exercise prescription in cancer patients undergoing major abdominal surgery. To date there is no submaximal test that can be used by physiotherapists to accurately predict aerobic fitness these patients who take beta-blocker medication.

Purpose: To determine whether ratings of perceived exertion (RPE) during a graded exercise test could provide an estimate of aerobic fitness in patients with abdominal cancer taking beta-blocker medication.

Methods: Fourteen participants (mean age = 75 years) with abdominal cancer taking beta-blocker medication were age-matched to a similar group of cancer patients not taking any heart altering medication. Participants performed a cardiopulmonary exercise test where AT and VO2 peak were identified. RPE was recorded every minute throughout the test. Regression analysis was performed between workload at an RPE of 13 and actual VO2 peak, and intraclass correlation coefficients (ICCs) were then calculated for the predicted versus actual VO2 peak.

Results: The beta-blocker group displayed significantly lower heart rates at AT and VO2 peak than the control group ($p < 0.05$). However, VO2 and workload at AT and peak exercise did not differ between groups. Workload per kilogram of body weight at an RPE of 13 (somewhat hard) was a good predictor ($R^2 = 0.67$) of VO2 peak, with the ICC between actual and predicted VO2 peak being 0.82.

Conclusion(s): Workload attained at a RPE of 13 provided an accurate measure of aerobic fitness in patients with abdominal cancer taking beta-blocker medication.

Implications: A clinical exercise test using RPE provides a good estimate of aerobic fitness in abdominal cancer patients taking beta-blockers and has the potential to be used for risk stratification and exercise prescription in this population.

PERSPECTIVES OF NEW ZEALAND PHYSIOTHERAPISTS ON REHABILITATION AND RETURN TO SPORT FOLLOWING ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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Background: Previous research has highlighted variability in the beliefs and practices of physiotherapists regarding rehabilitation following anterior cruciate ligament reconstruction (ACLR). Post-operative rehabilitation following ACLR in New Zealand (NZ) is typically managed by physiotherapists. However, the beliefs and practices of NZ physiotherapists regarding ACLR rehabilitation are currently unknown.

Purpose: To investigate the beliefs and practices of New Zealand physiotherapists regarding pre- and post-surgical rehabilitation and return to sport (RTS) criteria following ACLR.

Methods: A survey was adapted from a previously published survey and disseminated online to NZ physiotherapists who were considered more likely to be involved in ACLR rehabilitation.

Results: The number of completed surveys was 318. Most physiotherapists (85%) preferred to first consult patients within 14 days of ACLR. In the first six weeks following ACLR, 89% of physiotherapists would see patients at least once per week. Between 3- and 6-months post-ACLR, 76% of physiotherapists would see patients at least once a fortnight. Pre-operative rehabilitation and post-operative rehabilitation exceeding six months are considered essential or important to patient outcomes by over 95% of physiotherapists. While 63% of physiotherapists support a RTS 9-12 months after ACLR, 11% permit a RTS within 6-9 months of surgery. Common RTS considerations include functional capacity, movement quality during functional tasks, time from ACLR, and knee strength.

Conclusion(s): The need for pre-and post-ACLR rehabilitation is well recognised amongst NZ physiotherapists. Although the majority of respondents report practice beliefs consistent with current recommendations, those beliefs are not always consistent with clinical practice.

Implications: To maximise the likelihood of an optimal outcome, physiotherapists should ensure ACLR patients receive an appropriate dosage of pre- and post-surgical rehabilitation. ACLR rehabilitation that does not follow best practice recommendations could negatively influence patient outcomes.

PREDICTIVE FACTORS ASSOCIATED WITH OUTCOMES FOR LOW BACK PAIN PATIENTS MANAGED WITHIN AN ESCALATED CARE PATHWAY

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TBI Health Group

Background: The social and economic cost of chronic low back pain (CLBP) is substantial and represent a significant component of the overall burden of musculoskeletal disability within our society. More recently, there has been increased attention on identifying patients at a higher risk of developing long term chronicity and intervening early with a more intensive multidisciplinary approach.

Here in New Zealand, ACC has been working with rehabilitation groups to co-design and trial this new approach with the implementation of escalated care pathways (ECP). This study reviews the outcomes achieved for LBP patients managed within an ECP environment and identifies potential predictive factors associated with the outcomes achieved.

Purpose: To determine the association between potential predictive variables and clinically relevant outcomes for a cohort of LBP patient that completed an ECP.

Methods: This was an observational study of patients with persistent LBP referred to an ECP over a 24–month period. A range of demographic, symptomatic and psychosocial variables were recorded at assessment. In addition, measures were recorded for pain (Numeric Pain Score [NPS]), Disability (Oswestry Disability Index [ODI]) and work status (working/not working) at assessment, discharge and 12–month follow ups. Multivariate logistic regression analysis was used to model the relationship between the potential predictive variables and the independent variables measured.

Results: The ECP cohort consisted of 256 patients with an average age of 43.4 years. The group reported a 3.1/10-point improvement in mean NPS and 26/100 improvement in mean ODI score. 81.4% of patients returned to their full pre-injury hours at the end of the pathway and 12.9% returned to work on partial hours or modified duties.

Conclusion: The predictive variables most strongly associated with a positive outcome were symptom duration and the assessment Orebro score. Patients seen early after their injury and those with relatively lower levels of psychosocial distress achieved better overall results within an ECP pathway.

Implications: ECP are in important development in the management of musculoskeletal injury in New Zealand. This initial pilot for patients with LBP has shown positive results, but further research is required to determine the most appropriate client profile to benefit from this approach.

STRENGTH TRAINING AS TREATMENT FOR LOW BACK PAIN: A SCOPING REVIEW

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Background: Low back pain (LBP) is the leading cause of disability worldwide. International LBP treatment guidelines are evolving to place more emphasis on active rehabilitation such as strength training rather than passive therapies, pharmaceuticals, and invasive procedures. With this shift, clarity around active rehabilitation parameters is necessary to support health professionals and patients alike to integrate this change.

Purpose: To summarise the existing evidence relating to strength training as a treatment for low back pain.

Methods: We conducted a scoping review to identify the existing evidence for strength training for LBP. We searched five online databases (MEDLINE (Ovid), EMBASE (Ovid), PsychINFO (Ovid), CINAHL (EbscoHost) and Cochrane Library (Wiley)) from inception to September 2020. We included randomised controlled trials that used strength training in their intervention to treat non-specific low back pain of any duration.

Results: Forty studies were eligible for inclusion. There was a large variety in characteristics. Strength training principles (e.g. overload, type, specificity and duration) were mentioned in the majority of studies but not explored in depth. Exercise descriptions and dosage were poorly reported (mean Consensus on Exercise Reporting Template score: 53.6%). The majority of studies did not specify how dosage was determined (35%), with almost a quarter (22%) being generic for all participants. The majority of strength training was delivered using machines (51.9%)

Conclusion(s): We found the literature investigating strength training as a treatment for LBP to be poorly reported and lacking program specifics. Future research needs to better explain mechanisms, principles, dosage and better report their interventions.

Implications: The lack of clarity around strength training treatment protocols may result in an inability for clinicians to reproduce treatment protocols clinically. With the growing evidence to support strength treatment for LBP, this may have a negative impact on patient outcomes.

FACILITATING STUDENT LEARNING OF SUPPORTED SELF-MANAGEMENT IN HEALTHCARE PRACTICE

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Background: Individuals self-manage lifelong conditions daily with episodic support provided by healthcare professionals. Supported self-management (SSM) facilitates the skills required by an individual to self-manage their condition and live well. Learning about SSM should be in healthcare professional programme curricular. Little is known about how SSM is currently taught or perceptions and attitudes students hold about SSM.

Purpose: Our study aimed to (1) explore healthcare professional students' perceptions and attitudes to SSM and (2) co-design with physiotherapy students how best to teach SSM to enable engagement and optimise learning.

Methods: Survey, qualitative and co-design methodologies were used. Healthcare professional students' perceptions and attitudes were explored via e-survey and semi-structured interviews. Then, physiotherapy students participated in a Nominal Group Session and a multi-stage E-Delphi survey.

Results: E-survey (*n* = 96; 11 programmes) and interview (*n* = 10; 8 programmes) data suggested students hold positive attitudes about SSM, had perceived confidence to provide SSM, but limited opportunities to implement in clinical environments. Corroborating key themes were “Self-management support is puzzling” indicating uncertainty about specific roles and actions required within patient interactions and “Self-management support is valuable”. Consensus from physiotherapy students was that learning SMS should be frequent, interesting, explicit, and incorporated across all years of training. Practical opportunities were favoured over theoretical learning, such as providing SSM to individuals living with lifelong conditions during clinical placements. Learning SSM was considered as on-going, important to providing person-centred care and in improving health outcomes.

Conclusion(s): Healthcare professional students realise that SSM is important in healthcare and that while knowledge is important, learning how to provide SSM in clinical situations is crucial.

Implications: More explicit and frequent learning opportunities need to be provided in real-life settings for physiotherapy students to learn “how to” support patient self-management. Good role modelling of SSM by qualified physiotherapists is equally important.

WE DO IT BEST: MANAGING LOW BACK PAIN PATIENTS IN AN EMERGENCY DEPARTMENT SETTING

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Background: In 2020 physiotherapists began working in the emergency department (ED) of Tauranga Hospital as first contact practitioners. This was a targeted initiative in response to the high number of hospital admissions of patients with low back pain (LBP)

Purpose: The purpose of this study is to examine if musculoskeletal (MSK) physiotherapy intervention in the assessment, diagnosis and overall management of patients with LBP presenting to ED is a viable, effective and successful way of reducing hospital admissions of this patient population.

Methods: A real time data dashboard was developed and used to capture measures of LBP patient outcomes and physiotherapy interventions.

Results: At the time of writing, definitive data is unavailable (due to COVID-19 staff redeployment) however interim data shows that the primary goal of reduced hospital admissions for LBP patients via ED has been achieved. Other outcomes of note included: decreased patient wait and overall time spent in ED, a change in management strategies away from diagnostic imaging and specialist intervention towards a focus on patient education, enablement and engagement with onward referral to physiotherapy colleagues in the community on discharge.

Conclusion: Implementation of a MSK physiotherapy service within Tauranga Hospital’s ED was successful in decreasing hospital admissions for LBP patients. This demonstrates that physiotherapists have highly relevant knowledge and expert skills in the assessment, diagnosis and management of LBP and are the most appropriate profession to be the primary contact practitioner in patients presenting with LBP in a hospital ED setting.

Implications: Physiotherapy should be utilised more in an ED setting in order to reduce hospital admissions and facilitate optimal management of patients presenting with LBP. In a bigger picture scenario, MSK physiotherapists working in an ED setting are promoting and advancing the profession within DHBs and the communities they service

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IMPLEMENTATION OF A LIFESTYLE PROGRAMME FOR PEOPLE LIVING WITH TYPE 2 DIABETES: LESSONS LEARNT

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Background: We developed and investigated the Diabetes Community Exercise and Education Programme (DCEP); a physiotherapy and nurse led lifestyle programme for adults with type 2 diabetes inclusive for Māori and Pacifika people and those living in low socioeconomic circumstances.

Purpose: We report the achievements and challenges of implementing DCEP into a community-based setting.

Methods: This qualitative study was embedded in a randomised controlled trial. Informed by the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) Framework, we collected data via semi-structured interviews with DCEP attendees (n = 17) and involved healthcare professionals (HCPs) (n = 18) and thematically analysed it.

Results: We achieved our *Reach* target (sample size, ethnic representation) but could have extended further with use of community champions and promoting self-referral. The randomisation process was discouraging to Māori and Pasifika participation. DCEP was perceived *Effective* as the social relaxed environment and relationships forged between both attendees and HCPs facilitated attendance and all spoke of derived benefits. The person-centred approach of the HCPs was appreciated. Although time-consuming, development of trusting relationships with local health providers and the wider community enabled *Implementation* and *Adoption*. To perpetuate *Maintenance* participants considered that generic, not health condition specific, programmes delivered closer to home were preferable.

Conclusion(s): Implementation of lifestyle programmes require inclusive involvement of target populations and their wider communities. Thus, preparation is required focussing on building trusting relationships within the community and understanding local context and needs. Involved HCPs need training in person-centred approaches to enable a supportive, empowering setting.

Implications: Physiotherapy has a crucial role in enabling health and wellness of people with long-term health conditions and provision of lifestyle programmes such as DCEP encouraged. In doing so, physiotherapists must be mindful of relationship development and working in a supportive collaborative way both with class attendees and their community. Such an approach takes time to develop.

IMPACT OF PERSON-CENTRED CARE ON DELIVERY OF THE DIABETES COMMUNITY EXERCISE PROGRAMME (DCEP)

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Background: Exercise is a core foundation of successful self-management of type 2 diabetes (T2D). DCEP is an exercise and education rehabilitation programme aimed at supporting adults living with T2D to take control of their health and to live well. It was developed to enhance the self-efficacy of people to engage in exercise for a long term and is underpinned by the spirit of motivational interviewing.

Purpose: This study explored what DCEP attendees and health care professionals (HCPs) who delivered the programme perceived DCEP to be and what motivated attendance. This furthers the understanding of what rehabilitation programme ingredients are important to support people with T2D to engage in regular exercise.

Methods: This qualitative study interviewed 17 DCEP attendees and 12 HCPs, who delivered DCEP. These interviews occurred at the completion of the twice-weekly, 12–week education and exercise programme prior to attendees commencing an ongoing twice-weekly maintenance exercise class. Interviews were audio-recorded, transcribed verbatim and analysed with the General Inductive Approach.

Results: *Person-centred care* was a key theme constructed from the analysis. *Person-centred care* comprised of four subthemes: monitoring, individualised exercise within a sociable group setting, flexible education and discussion, and HCP training.

Conclusion(s): DCEP motivated people with T2D to engage in exercise. An emphasis on a person-centred care approach that supported health monitoring and educational and social aspects of the programme was important to this engagement. HCPs who were comfortable to guide attendees through the programme in this person-centred way were imperative to successful delivery.

Implications: (1) Physiotherapists' and other HCPs' ability to communicate with and support their clients in a person-centred way impacts their commitment to engage with rehabilitation programmes; (2) Person-centred care within group rehabilitation programmes required both structured health monitoring and an openness to deliver exercise and education in flexible and social ways.

A SCOPING REVIEW OF GUIDELINES AND PATHWAYS FOR MANAGING LOW BACK PAIN IN NEW ZEALAND

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Background: Low back pain (LBP) is commonly treated by physiotherapists in New Zealand (NZ) affecting people across their lifespan from childhood through to old age. Health practitioners use a broad spectrum of approaches to manage people with acute LBP, possibly referring to guidelines and pathways. One such approach is stepped-care based on duration of symptoms, response to treatment, and psychosocial factors. It is unclear which guidelines and pathways are used in NZ to direct management of people with acute LBP.

Purpose: Identify which guidelines and pathways are used in New Zealand for the management of acute LBP.

Methods: A scoping review of peer-reviewed and grey literature was undertaken in August 2021. Eligibility criteria included pathways, guidelines, and webpages for managing people with acute LBP directed at NZ health practitioners in primary care. Data extracted were management recommendations, and implementation strategies.

Results: Twenty-eight publications were included; 15 peer-reviewed publications identified 25 guidelines/pathways and 13 grey-literature publications identified 9 pathways available in NZ. Professions utilising these included physiotherapists, GPs, and nurses. Most guidelines provided similar recommendations for management of acute LBP: stay active, graduated activity/exercise program, manage pain and manual therapy. Few considered implementation strategies.

Conclusion: Multiple care pathways and guidelines are available in New Zealand. Implementation of these is rarely addressed.

Implications: Multiple pathways for management of acute LBP are confusing for health practitioners and patients and could lead to sub-optimal care not conforming to best practice. Further work is necessary to streamline acute LBP care in NZ.

WHERE DO NEW ZEALANDERS WITH LOW BACK PAIN SEEK HEALTHCARE?

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Background: In 2019, almost 500,000 New Zealanders were affected by low back pain (LBP). Accident Compensation Corporation (ACC) fund a significant proportion of those claims, but which services are they funding?

Purpose: To determine the healthcare services funded by ACC for people with LBP and determine the costs, trends over time and differences by ethnicity and sex.

Methods: A retrospective audit and descriptive analysis (2009–2020) was undertaken, of ACC-funded LBP healthcare service. An *a priori* decision was made to analyse the five most used healthcare services. Four additional healthcare services were included in a secondary exploratory analysis.

Results: The five most accessed services were physiotherapy, acupuncture, osteopathy, general practitioner (GP) and chiropractic. Four additional services selected were surgery, radiology, return to work and pain management. There were 3.3 million ACC-funded LBP claims with overall costs of NZ$4 billion. Cost of services was 72% higher for males than females (2020). Europeans made 69% of the claims, (72% of the cost) while Māori made 10% of the claims (13% of cost). European claimants used physiotherapy most frequently, Māori and Pasifika their GP, and Asian claimants, acupuncture.

Conclusions: This NZ data differed from international trends, showing relatively more claims for physiotherapy than GP possibly because New Zealand legislation allows patients direct access to physiotherapy.

Implications: Physiotherapists remain the primary providers of care for LBP, so we need to make sure we are providing evidenced based treatment. We need to ensure we are following guidelines for referral to radiology. This high-cost service is overused, frequently inappropriately. We need to look at why Māori and Pasifika are not accessing physiotherapy services directly.

OUTCOMES OF IN-HOME STRENGTH AND BALANCE FALLS PREVENTION PROGRAMME

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TBI Health Group

Background: Falls are very common in the elderly population and can frequently result in hospitalisation and/or fractures. Falls negatively impact the health, wellbeing, and independence of an individual and there are significant health costs for our communities in supporting people who incur a fall related injury.

The Otago Exercise Programme (OEP) is an evidence based, semi-structured, in-home based exercise program, consisting of a series of home visits extended over six months. It is led by a physiotherapist or trained health professional and has been adapted and introduced by a select number of DHBs across New Zealand as a preventative initiative to reduce the rate and risk of falls within our society.

Method: A retrospective, observational audit of 994 programme participants. Inclusion criteria: Māori and Pacific people aged 65 years and over, and all other adults aged 75 years and over living in the WDHB and ADHB community who are identified to be 'at risk' of a fall and are referred to TBI Health for the In-Home Strength and Balance prevention programme. Study period: All clients referred to TBI Health from July 2018 to 30 June 2019.

Results:

Outcome measure	Initial	Discharge
Timed Up and Go (seconds)	25.35	24.73
Chair Stand Test (completed tasks)	3.82	5.52
Four Test Balance – tandem level	18.2%	26.5%
Modified Functional Efficacy Score	6.90	7.67
Number of falls in previous 3 months	1.25	0.35

Conclusions: The In-Home Strength and Balance Falls prevention programme has been effective in improving average confidence and functional levels, perceived disability and reducing the number of falls for Waitematā and Auckland DHB participants. A 72% reduction in falls suggests that the In-Home Strength and Balance Falls Prevention Programme has had a positive impact on reducing potential harm of at-risk participants.

Implications: The continued body of evidence for a DHB wide Falls Prevention programme demonstrates the need and effectiveness of a low cost, high benefit prevention programme to our most vulnerable population group. Further studies would benefit from reviewing the longitudinal data and impact this has on this cohort.

PRACTICAL APPLICATION OF INJURY SURVEILLANCE IN AN ELITE DOMESTIC WOMEN'S CRICKET SQUAD

Longhurst, R.

High Performance Sport New Zealand

Background: Working in sports physiotherapy it is imperative that we utilise research to inform and shape our practice. Alongside academia, well planned data collection within sports team and/or organisations helps to ensure learnings are relevant and fit for purpose for target cohorts.

Purpose: To ascertain injury epidemiology for an elite Domestic Women's cricket team.

Methods: A retrospective observational cohort study was undertaken on 19 members of the Auckland Hearts Elite Women's cricket team, aged 16–34. Dependent variables collected; injury, training availability and time loss. An injury was defined as: Any impairment (physical or neuromuscular) that results in the inability to complete a training session or competition event at an expected or predetermined level. Significant injuries incurred time loss from selection. Each injury was coded with an OSICS-10 classification. Data was collected between September 2020 and February 2021.

Results: 26 injuries were sustained. 10 injuries were significant with 532 days lost. Injury profile differed from that reported in previous literature. Time loss was greatest for shoulder injuries (294 days [59% of time lost]) and neurological conditions were the injury type that resulted in the most time lost (28%).

Conclusion(s): The epidemiological data collected differed from published research on male and female cricketers. This targeted the injury mitigation strategies ensuring they were fit for purpose for the cohort.

Implications: Practitioners have a role to play in growing the body of research in sports medicine. Simple methods of data collection from practitioners can help target injury mitigation strategies.

THREE SHADES OF GREEN. UNDERSTANDING INJURY PREVALENCE AND BURDEN IN ELITE NEW ZEALAND ATHLETES

Longhurst, R., & **Scott, J.**

High Performance Sport New Zealand

Background: Athletes that train unrestricted for more than 80% of the time are more likely to reach their performance goals. The first step in managing injury risk, is to understand injury prevalence and the burden (time lost to full training) that this has on a sport/athlete.

Purpose: Health is a performance advantage. By having more athletes training fully more of the time the HPSNZ Performance Health Team can help athletes perform on the world stage.

Aim: Understanding the injury burden to sport is the essential first step in mitigating and reducing injury risk. The High Performance Sport NZ Performance Physiotherapy team developed a system to capture athletes' training and competition availability due to injury.

Methods: A two-fold approach was instigated. Firstly, the incumbent red-amber-green traffic light system to capture athlete capacity, was updated to include three shades of green to better capture restriction to training in the return from injury. Secondly, any injury resulting in an athlete not being available for selection and the time lost to injury was recorded. Performance physiotherapists worked collaboratively to develop systems that allowed comparisons across and between athletes from various sports.

Results: The performance physiotherapy team collected athlete capacity over three years for eleven sports. Athletes identified as being unavailable to train were discussed each week in an inter-disciplinary nation-wide meeting to ensure outcomes were being optimised. This data was used by performance physiotherapists to promote health as a performance advantage and to shape injury risk mitigation programmes within sports.

Conclusion(s): To truly understand the impact that injuries have on sport and athletic performance, injury surveillance needs to include data on days lost to unrestricted training and days lost for availability for selection. This data helps guide interventions and resource allocation to ensure that performance physiotherapy is effective and efficient and, ultimately, optimises athletic performance.

CAM WE DO IT? – USE OF COUGH ASSIST MACHINES IN AN ACUTE SETTING

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Capital and Coast District Health Board

Background: Inadequate ventilation, retained secretions and an ineffective cough are significant concerns in patients with respiratory compromise. Lung volume recruitment and cough augmentation are utilised by physiotherapists that include the use of cough assist machines (CAM) providing intermittent positive pressure breathing or mechanical insufflation-exsufflation (MI:E). Capital and Coast District Health Board physiotherapy have a competency assurance programme providing training and upskilling in CAM use; however, anecdotal evidence suggested variation in physiotherapy practise.

Purpose: An audit was carried out to review current physiotherapy practice on CAM use in an inpatient setting at Wellington Regional Hospital.

Methods: CAMs use was recorded when a physiotherapist initiated CAM therapy. Patients' clinical information were reviewed for relevant indications, contraindications/precautions and CAM application settings against clinical criteria. A questionnaire was also completed by the prescribing physiotherapists to determine confidence in their prescription of CAM and clinical experience.

Results: On 25 occasions that CAM was selected, 20 occasions showed clear clinical indications. Of those, only 17 occasions achieved clinically therapeutic settings. When CAM were indicated and prescribed appropriately, 13 occasions achieved favourable outcomes. This meant when a CAM was selected for acute respiratory therapy, 52% of the time (13 out of 25 occasions) the physiotherapist achieved their intended outcome. When outcomes were evaluated against the experience of the physiotherapist, there were correlations of favourable outcomes with clinicians with more experience (> 3 years) compared to less experience (< 3 years). This was similar with the confidence of the physiotherapists.

Conclusions: Patient outcomes as a result of CAM use are underwhelming with roughly half of patients who are prescribed IPPB or MI:E achieving therapeutic value; however, the more experienced and confident physiotherapist lead to more favourable outcomes.

Implications: Improved guidance for physiotherapist on appropriate selection of IPPB and MI:E in acute settings with emphasis on therapeutic CAM settings. This can be incorporated into current training as well as having a referring guideline aimed at improving patient outcomes.

LEARNINGS ON THE USE OF TELEHEALTH TO DELIVER A MULTIDISCIPLINARY OSTEOARTHRITIS OPTIMISATION PATHWAY DURING COVID LOCKDOWN

Matteucci, L., Naik, L., & Edward, R.

Waitematā District Health Board

Background: The intermittent surges in COVID variants and resultant lockdowns have altered how health practitioners deliver services. The telehealth platform has been advocated as an option to become COVID responsive. The practical aspects of delivering and receiving telehealth service needs to be explored.

Purpose: To evaluate whether telehealth was effective in delivering patient education and treatment during a six-month pilot for an osteoarthritis (OA) optimisation programme at Waitematā District Health Board.

Methods: A retrospective review of the telehealth delivery to patients who engaged in the OA optimisation pathway was conducted. Patients were booked with a physiotherapist and/or dietitian via zoom or telephone consults. Patients were assessed and treated through these modalities either individually or in groups to provide education and self-management strategies. Patient reported outcomes (Knee injury and Osteoarthritis Outcomes Survey – KOOS; Knee Osteoarthritis Knowledge survey – KOAK; and dietetics survey) were uploaded electronically. Data from satisfaction surveys was analysed to identify whether telehealth delivery met patient's healthcare needs.

Results: All participants of the pathway showed an improvement in their knowledge of OA with a larger improvement in those that used zoom compared to telephone. 59% of patients engaged with telephone compared to 41% via zoom and these clients showed larger improvements in KOOS scores. There was a 100% positive response from the 19 patients who completed the satisfaction survey question exploring if telehealth met patient needs during lockdown.

Conclusion: Telehealth met the patient's needs and expectations during lockdown and improvements in all outcome measures were demonstrated.

Implications: Clients are more willing to accept a telehealth mode of delivery as their primary treatment/contact during COVID lockdown and our results reflect that it can be an effective method of delivering education and exercise. An extension of this mode of delivery should be considered for the appropriate cohort of patients in the absence of COVID limitations.

NAVIGATING THE VIRTUAL WORLD: RELIABILITY OF THE TRIANGLE COMPLETION TEST IN THE REAL-WORLD AND IN VIRTUAL REALITY

Mclaren, R., Chaudhary S., Rashid U., Ravindran S., & Taylor, D.

Auckland University of Technology

Background: Autonomous spatial navigation is a complex cognitive skill fundamental to independence. The triangle completion test has been used to assess egocentric spatial navigation for decades, yet there is little information on its reliability. We developed a virtual reality (VR) based test and investigated whether either test of spatial navigation was reliable.

Purpose: To examine test-retest reliability of the real-world and VR triangle completion tests. A secondary objective was to examine the usability of the VR based test.

Methods: 30 healthy adults aged 18–45 years were recruited to this block randomised study. Participants completed two sessions of triangle completion tests in the real-world and VR on the same day with a break between sessions.

Results: In both test versions distance from the end-point and angle of deviation showed poor test-retest reliability ($r < 0.5$). Distance traveled had moderate reliability in both the real-world and VR tests ($r = 0.55$ 95% CI [0.23, 0.76]; $r = 0.66$ 95% CI [0.4, 0.83 respectively]). The VR triangle test showed poor correlation with the real-world test.

Conclusions: The triangle completion test has poor test-retest reliability and demonstrates poor concurrent validity between the real-world and VR. Nevertheless, it was feasible to translate a real-world test of spatial navigation into VR.

Implications: VR provides opportunities for development of clinically relevant spatial navigation tests in the future.

THE EXPERIENCES OF PHYSIOTHERAPISTS WORKING THROUGH COVID-19 LOCKDOWNS IN AOTEAROA NEW ZEALAND

Mepham, J[1]., Eastwood, B[1,3]., Goh, P[2]., & Skinner, M[1,2].

[1]PNZ Cardiorespiratory Special Interest Group; [2]University of Otago; [3]Bay of Plenty District Health Board

Background: COVID-19 needs no introduction. A national lockdown was first in March 2020. Initially protective personal equipment (PPE) was in short supply. National guidance and local practice failed to consider physiotherapists' role in COVID-19 management. Physiotherapists in private practice were not considered to be essential workers so face-to-face contact largely transitioned to telehealth services. The PNZ Cardiorespiratory Special Interest Group has been actively involved in advocacy, education, consultation and importantly considering the effect the pandemic and lockdowns have had on physiotherapists.

Purpose: To investigate the experiences of physiotherapists working through the initial COVID-19 lockdowns in Aotearoa New Zealand.

Methods: A cross-sectional study design using a self-completed online questionnaire was distributed to physiotherapist members via PNZ in March 2021.

Results: Access to PPE and mask-fit testing was inconsistent during the first lockdown but improved during the Auckland-based August lockdown. There was a lack of understanding of physiotherapists' skill set and role in COVID-19 management. Physiotherapists reported having to justify their need for PPE to other staff. Some physiotherapists needed to justify their PPE choice to leadership within physiotherapy/allied health teams. Physiotherapists in both private and public sectors reported symptoms associated with stress and anxiety. Stressors ranged from inadequate PPE while treating patients at-risk/positive for COVID-19 to loss of income.

Conclusion(s): More can be done to highlight the value of physiotherapy in COVID-19 management; utilise the skills of physiotherapists across the patient journey and in pandemic planning. Access to PPE and appropriate mask-fit testing is essential for workplace health and safety. The pandemic and lockdowns in 2020 impacted on the wellbeing of physiotherapists across all sectors.

Implications: Physiotherapists' role needs to be better understood across tertiary to community sectors both to improve collaboration with the wider health workforce for future pandemic management and to enhance workplace safety for those with face-to-face contact.

SERVICE AUDIT OF OPTIMISATION OF NON-SURGICAL INTERVENTION FOR OSTEOARTHRITIC KNEE PATIENTS AT WAITEMATĀ DHB

Naik, L., Matteucci, L., & Edward, R.

Waitematā District Health Board

Background: Osteoarthritis (OA) is a highly prevalent disabling condition expected to rise in the future. Arthritis New Zealand estimates that the cost of managing OA in 2018 was $12.2 billion. Surgical and pharmacological interventions appear to supersede evidence-based guidelines advocating conservative options.

Purpose: To optimise conservative treatment options for OA knee patients, referred to the Waitematā District Health Board (DHB) orthopaedic service.

Methods: An initial six-month pilot was implemented to optimise conservative treatment for moderate to severe OA knee patients referred to the orthopaedic service. Patients received an assessment, education, and exercise sessions with a physiotherapist and/or dietitian delivered via telehealth due to COVID restrictions. Process reported outcome measures assessed referral patterns and outcomes from the pathway. Patient-reported outcome measures (NPRS, KOOS, KOAK, Dietitian questionnaire) were also used to qualify pain, quality of life, impact on function, and dietary habits pre and post pathway.

Results: During the six months from June-December 2021, 83 patients have participated in the OA knee pathway. Three were discharged from orthopaedics, and two were offered SOS on the orthopaedic list. Out of the patients who completed KOAK post-pathway 100% demonstrated an improvement in the knowledge of OA. 52% of participants who completed the KOOS showed an improvement across the sub-scales, and 59% showed improvement in pain rating. Small amounts of weight loss were noted by a few patients with variations from 1 kg to 10kg.

Conclusion: The findings from our OA optimisation pathway are encouraging despite the short time duration of the pathway, a small cohort of patients, and an alteration of the traditional model of health care delivery to telehealth to be COVID responsive.

Implications: These results show that optimising conservative management even in moderate to severe OA can improve function and symptoms and should be instituted as a first-line treatment prior to considering surgical options.

THE GAIT&BALANCE APP: A MOBILE SOLUTION FOR ASSESSING BALANCE

Olsen, S[1]., Rashid, U[1]., Alder, G[1]., Barbado, D[2]., Allerby, C[1]., Brown, E[1]., Leyser, M[1]., McDonnell, G[1]., López Elvira, J[2]., Lord, S[1]., Niazi, I[3]., & Taylor, D[1].

[1]Auckland University of Technology; [2]Miguel Hernandez University of Elche, Spain; [3]New Zealand College of Chiropractic

Background: Physiotherapists commonly use balance tests that rely on visual observation and a stopwatch. Such tests can be limited in their accuracy, repeatability, and sensitivity, and can be subject to ceiling effects. Force-plate technology, 3D motion capture, or instrumented walkways are accurate, yet most physiotherapists do not have access to such expensive technology. Here we present the 'Gait&Balance App', a new tool which has potential to provide physiotherapists with a fast, accurate, and affordable method for measuring balance. It works on a standard smartphone using the accelerometers embedded within the smartphone to objectively evaluate balance and gait parameters.

Purpose: To report the results of initial research investigating the validity of the Gait&Balance App against gold-standard measures and clinical balance measures in healthy young and older adults.

Methods: Healthy participants (both younger and older, 25–94 years) performed a series of static and dynamic balance tasks while data was recorded from both the Gait&Balance App and a 3D motion system. Clinical balance measures were also recorded in older adults. The validity of the App measures was evaluated with the 95% confidence interval of Pearson's product moment correlation coefficient.

Results: The App provided valid measures of postural stability ($r > 0.68$), step length ($r > 0.61$), step time ($r > 0.96$), walking speed ($r > 0.7$) and periodicity ($r > 0.55$). Step length, walking speed and periodicity correlated with the Functional Gait Assessment ($r > 0.35$). Step length correlated with the Mini-BESTest ($r > 0.32$).

Conclusion: The Gait&Balance App can provide valid measures of balance in healthy young and older adults. Future research should investigate its validity and reliability in people with balance impairments.

Implications: This technology offers physiotherapists a potential tool to improve the objectivity and sensitivity of their balance assessments. In addition, this tool could be developed for telehealth and patient self-monitoring.

WAKA HOURUA: A BICULTURAL KAITIAKITANGA MODEL FOR PHYSIOTHERAPY PRACTICE AND PROFESSIONAL SUPERVISION

Otene, D.

Do Physio

Background: In 2021 I enrolled in Te Wānanga o Aotearoa to do the Kaitiakitanga Programme, Postgraduate Diploma in Bicultural Professional supervision after being inspired by Graham Bidois Cameron speaking on 'Te Toi Ahorangi, Equity and Te Tiriti' some months before.

Purpose: The purpose of the rangahau/research in the programme was to develop my own model of kaitiakitanga/bicultural professional supervision and integrate it into my professional practice of physiotherapy.

Methods: Rangahau/Research into Māori and non-Māori bodies of knowledge which included Mātauranga Māori approaches contextualising themes drawn from tikanga, te reo, pūrākau, te toi, national and international professional supervision research and integrating with experience as a physiotherapist.

Results: My kaitiakitanga model for physiotherapy supervision and practice has been inspired by Te Tiriti o Waitangi, the beauty of te reo Māori, and my mother's bicultural journey in learning to weave a korowai.

It is based on a waka hourua, with harakeke tīkanga symbolising the kōrero which forms the interlocking fibres for the platform supporting the tiaki (supervisee/patient). The actions are symbolised by rotarota or hand signs, these are the mahi of the kaitiaki / supervisor alongside the tiaki on their journey. A karakia and rotarota sequence also feature as tools for self-care. In practise I also used the Poutama inspired model Ngā Mauri e Toru successfully in a small group.

Conclusions: My rangahau highlighted the need for manaakitanga/care in professional supervision especially in these unprecedented times. A bicultural model can inspire innovation and creativity in physiotherapy. More rangahau/research is required to test the model and practice of it in a bicultural physiotherapy supervision context. My goal is to do this next year in a Kaitiakitanga Master's Program, and it will require participation from physiotherapists willing to try a bicultural approach to supervision.

HIGH INTENSITY INTERVAL TRAINING IMPROVES AEROBIC FITNESS AND SURGICAL RISK STRATIFICATION IN ABDOMINAL CANCER SUFFERERS

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[1]Auckland University of Technology; [2]Wellington District Health Board

Background: Cancer patients undergoing major abdominal surgery with low aerobic fitness are at increased risk of perioperative complications and mortality. These patients often have a 4–10 week window, prior to surgery, where prehabilitation exercise interventions can be used to improve aerobic capacity. Recently, it has been suggested that high intensity interval training (HIIT) has the potential to improve aerobic fitness over such a short period.

Purpose: To determine whether a prehabilitation programme involving HIIT and home-based walking can improve aerobic fitness and length of stay in hospital in patients undergoing major abdominal surgery.

Methods: 25 participants awaiting upper gastrointestinal (GI) surgery with low aerobic fitness participated in a 4–10 week prehabilitation exercise intervention that included 1–2 supervised HIIT sessions per week and home-based walking for the remainder of the week. Cardiopulmonary exercise testing (CPET) was performed prior to and after the exercise intervention. Comparisons in CPET measures and length of hospital stay were made with six patients awaiting upper GI surgery but not involved in a formal exercise programme.

Results: The exercise intervention group significantly improved aerobic fitness (anaerobic threshold (AT) and peak oxygen consumption (VO2 peak) ($p < 0.05$). This improvement resulted in patients moving from a high to a lower level of perioperative risk. Individuals undergoing prehabilitation also tended to have a shorter length of stay in hospital when compared to that standard care group.

Conclusion(s): A 4–10 week prehabilitation program involving supervised weekly HIIT training and home-based walking improved aerobic capacity and may have the potentially reduce perioperative risk and length of stay in hospital in patients undergoing upper GI surgery.

Implications: Physiotherapists should consider integrating HIIT into prehabilitation interventions for abdominal cancer suffers awaiting major surgery.

AUTONOMIC DYSFUNCTION ALTERS HEART RATE RESPONSES DURING NON-CONTACT BOXING IN PARKINSON'S DISEASE

Panassollo, T., Mawston, G., Taylor, D., & Lord, S.

Auckland University of Technology

Background: Non-contact boxing training (boxing) is a popular intervention used by physiotherapists to improve health in people with Parkinson's disease (PD). However, little is known about the effect of boxing on heart rate (HR) response which is relevant to training protocols and outcome. HR response is likely to vary in people with PD, particularly for those with chronotropic incompetence (CI), a feature of autonomic dysfunction.

Purpose: This study examined HR response during boxing in people with PD with (PD-CI) and without CI (PD non-CI), and in age-matched controls (control).

Methods: Participants underwent a cardiopulmonary exercise test (CPET) to determine CI, maximum HR (HRmax) and training zones. Two sessions of boxing were then performed on different days. During the sessions HR response was measure via Polar H10, and further expressed as %HRmax predicted (220-age) and as %HRmax obtained during CPET.

Results: At each boxing round HRmax and mean HR were significantly lower in the PD-CI group compared with PD non-CI and controls ($p \leq 0.001$). PD-CI exercised at 82% of estimated HRmax which was significantly lower than PD non-CI (97%) and control (100%). However, all participants exercised at approximately 100% of HRmax attained during CPET.

Conclusion: PD-CI present with lower HRmax and mean HR during boxing compared with PD-nonCI and controls. However, when expressed as %HRmax from CPET, these individuals exercise at similar exercise intensity (high-intensity training zone) during boxing, which is underestimated using traditional predictive equations.

Implications: People with PD (with and without CI) attain high intensity training zone during boxing. HRmax derived from CPET more accurately reflects exercise intensity than estimated HRmax, which is important to recognise given the latter is commonly used in clinical practice.

UTILISING CULTURAL HUMILITY IN THE DEVELOPMENT OF A CULTURALLY SAFE WORKFORCE

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Background: Cultural competence in New Zealand's health workforce is a well-known concept that serves as the foundation towards growing a culturally safe health landscape. When navigating from cultural competency to cultural safety, the utilisation of Cultural Humility can provide healthcare staff a framework to develop their own knowledge on the intersections of culture and healthcare. In the Southern DHB, two clinical staff members (Witana Petley and Amy Mouru) created the "cultural humility hui" which provided a space to collectively share, critique, evaluate and learn about cultural nuances that occur within the healthcare system. The hui was developed with the intention to bring together diverse views, under the umbrella of cultural humility, to develop ongoing korero and collective growth to improved the cultural safety of the DHB staff. Through monthly hui of learning about culture and collectively engaging in activities to provoke korerō on sensitive subjects, attendees reported improved confidence with engaging with different cultures and reported a new appreciation of the diversity present within the hospital settings.

This novel venture helps to build onto the foundation of cultural competency, for the improvement of cultural safety within the Southern DHB. Cultural humility can be easily applicable to a variety of teams and fields due to its strength coming from the diversity of people who attend rather than the diversity of skills in the room. This can be utilised in any space and may be beneficial to health services who are looking to direct their growth from cultural competency to cultural safety.

“SOMEONE LIKE ANYONE ELSE”: A QUALITATIVE EXPLORATION OF NEW ZEALAND HEALTH PROFESSIONAL STUDENTS’ UNDERSTANDING OF DISABILITY

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[1]Canterbury District Health Board; [2]University of Otago; [3]University of Otago, Wellington; [4]Foundation for Equity and Research New Zealand

Background: One in four New Zealanders identify as disabled. Disabled people, including Māori (the indigenous people of New Zealand (NZ)), experience health disparities. Systemic and individual health professional (HP) biases are factors that may affect health outcomes. Disability education is a means for improving attitudes and behaviours towards disabled people.

Purpose: To explore NZ HP students’ understanding of disability and health-related concepts.

Methods: HP students from one tertiary institution in NZ were interviewed through Zoom video call about their understanding of disability and health. A relativism paradigm and contextualism epistemology (underpinned by the socio-ecological model) shaped the reflexive thematic analysis. Transcripts were analysed at a deductive and latent level.

Results: Nine HP participants, from different professional courses and cultural backgrounds, were interviewed. Three main themes influenced participants’ understanding of disability: life experiences, professional education, and societal exposure. Participants who had more experience with disabled people had a deeper and more nuanced appreciation of the challenges disabled people face in accessing health services and obtaining equitable health outcomes. Cultural background also influenced the participants’ understanding of disability. Participants preferred more experiential learning methods to improve their knowledge of disability concepts. Lastly, expectations of inclusion are determined by observing social norms.

Conclusion(s): Participants reported learning just a few models of disability. The HP students predominantly came from a perspective of ensuring equality rather than equity. There was limited recognition of the systemic biases that exist within multiple social determinants and how these perpetuate health inequities for disabled people.

Implications: A socio-ecological consideration of disability throughout the curricula, self-reflection, acknowledging systemic bias, and proactively including disabled people as HP students and teachers are potential means for addressing health inequities

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TAILORED VERSUS STANDARDISED REHABILITATION FOR PATIENTS WITH SHOULDER PAIN: A FEASIBILITY RANDOMISED CONTROLLED TRIAL

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University of Otago

Background: Shoulder pain is the third most common musculoskeletal complaint. It is currently unclear which forms of exercise interventions are more effective for patients with shoulder pain.

Purpose: The aim of this study was to assess whether it was feasible to conduct a full trial comparing a tailored versus a standardised rehabilitation for patients with shoulder pain.

Methods: Two-arm, patient- and assessor-blinded, randomised controlled feasibility trial. Participants with subacromial disorders of the shoulder were randomly allocated into tailored or standardised rehabilitation. The primary outcome measures were (1) the participant recruitment rate; (2) the proportion of participants enrolled from the total number screened; (3) drop-out rates; and (4) adherence to the rehabilitation programme. We used linear mixed-effect models to obtain preliminary estimates of treatment effects using pain and function scores as clinical outcomes.

Results: Twenty-eight participants were randomly allocated to a tailored rehabilitation programme ($n = 13$) or a standardised rehabilitation programme ($n = 15$). The recruitment rate was 3 participants per month, the proportion of participants enrolled was 23%, the drop-out rate was 14%, and the overall adherence to the rehabilitation programme was 85%. No between-group differences were found for most secondary outcome measures. Adverse events ($n = 22$; 9 in standardised group, 13 in tailored group) were minor in nature and included delayed onset muscle soreness, skin injury or pain following taping.

Conclusion(s): Our feasibility trial showed that additional strategies are required for improving recruitment, enrolment and minimising drop-out of participants into the trial and making it feasible to conduct a full trial.

Implications: The information from the current study and the nested process evaluation will be used for improving the design of the full trial.

CLINICIANS' PERSPECTIVES ON INTERVENTIONS OF A FEASIBILITY TRIAL: AN IMPLEMENTATION-BASED PROCESS EVALUATION STUDY

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Background: Process evaluation studies examine how an intervention was implemented during the trial, by assessing the contextual factors within which the intervention was delivered. This study reports a process evaluation of the "MAnagement of Subacromial disorders of The shouldER (MASTER)" feasibility trial, which recruited patients with shoulder pain and allocated them into one of the following interventions: tailored or standardised rehabilitation programme.

Purpose: To investigate clinicians' perceptions on and assess the treatment fidelity of interventions tested in the Otago MASTER feasibility trial.

Methods: This is a mixed method, process evaluation study. Five experienced clinicians were involved with the delivery of interventions within the feasibility trial and took part in the focus group. To assess treatment fidelity, we audited and categorised the clinicians' records and compared those with the planned protocol. We calculated the overall treatment fidelity score and its standard deviation (SD) for both interventions combined, and for each intervention separately. A qualitative descriptive approach was used to explore clinicians' perspectives about the planned intervention.

Results: The fidelity scores were acceptable for both interventions combined (81.6%, SD: 6.9%), as well as when analysing each intervention arm separately (tailored programme: 80.3%, SD: 7.7%; standardised programme: 82.9%, SD: 5.9%). Clinicians' perspectives about the trial and planned intervention were summarized by one main theme "conflict experienced between individual clinical practice and the intervention protocol", which was supported by three sub-themes: (1) programme weaknesses and strengths; (2) design and administrative barriers; and (3) training barriers.

Conclusion(s): Overall, treatment fidelity of interventions was acceptable, with certain aspects of interventions presenting low treatment fidelity. Clinicians' perspectives about the trial can be summarized by one theme, i.e., "conflict experienced between individual clinical practice and the intervention protocol".

Implications: Findings from this study will inform the design of the definite trial.

INTERNATIONAL CLASSIFICATION OF FUNCTION SUPPORTING A MINDSET CHANGE WHEN WORKING WITH LONG TERM DISABILITY

Robinson, L.

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Background: Working with children with disability in an educational setting is a unique opportunity to develop long term relationships with the child, their whānau and their educators. The longevity can both cement relationships and cloud our view and therefore our intervention.

Purpose: To support a change in mindset within a multidisciplinary team with long term relationships by exploration of an evidence based holistic assessment such as the International Classification (ICF).

Methods: The ICF core sets for cerebral palsy and ASD were 'mapped' against a current long standing narrative multidisciplinary assessment to review what aspects of our assessments were missing and support a narrative assessment to be evidenced based.

The use of the environmental and personal barriers and facilitators became part of our combined multidisciplinary assessment process to which all team members contributed.

Results: Using the ICF core sets supported the current narrative combined therapy assessment to become evidence based. In addition, the use of the barriers and facilitators supported the team to look at their intervention from a different angle, rather than always focusing on intervention with the child some of the barriers and/or facilitators to achievement lie with the adults around the child or the environment.

Conclusions: The ICF core sets are an abbreviated version of the full ICF which can be 'mapped' to holistic multidisciplinary assessments turning a narrative assessment meeting the needs of a diverse staff to an evidence based holistic assessment. Utilising the ICF barriers and facilitators can change the mindset of how we approach assessments.

Implications: The novel use of the ICF for those with long term disability can support not only a holistic approach but an evidence-based approach to support a change in mindset to what you are assessing and how.

A CONCEPTUAL MODEL TO ENHANCE COLLABORATIVE GOAL SETTING FOR CHILDREN WITH DISABILITY IN EDUCATION

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Background: Independent educational plans (IEPs) are the fundamental process for goal setting within an educational setting for children with disabilities. Authentic parent collaboration is the key to setting meaningful goals however, there is a paucity of research reviewing concepts or approaches to collaborative goal setting.

Purpose: This review study aimed to synthesise research focused on supporting collaborative goal setting for families of children with disability, specifically to identify: 1) frameworks used for parent collaboration in goal setting; and 2) family centred processes utilised in goal setting.

Methods: The databases of: Medline, CINAHL, Web of Science, Scopus and Cochrane, Education research complete, Education database (ProQuest), Eric (ProQuest), NZCER Journals online and Psych INFO were searched using key words and synonyms of collaboration, goal setting, children and disability. Extra ted date were grouped into similar concepts or frameworks and synthesised to create themes.

Results: Twenty-four studies were included for review and four key elements were identified as supporting collaborative family centred practice: 1) A child centred approach – enhancing the child's strengths and dreams, 2) Goal setting tools – identifying the child's current ability, 3) Processes to achieve collaborative family centred practice, and 4) External support during the IEP process.

Conclusion: Synthesis of the key findings led to a working model describing the child at the centre of the goal setting process, surrounded by collaborative constructs and practical strategies. Examples: Enhancing strengths and dreams through a person centred approach with portfolios or long term goal setting models.

Implications: Exploration and use of our model may support school therapists and leadership to enhance collaborative family centred practice for goal setting. Many of the constructs and strategies will also be of value for those therapists working across the disability sector.

PHYSIOTHERAPISTS' EXPERIENCES OF MANAGING RUGBY-RELATED CONCUSSION IN THE COMMUNITY

Sole, G[1]., Badenhorst, M[2]., Whatman, C[2]., Walters, S[2]., Kerr, Z[3]., Register-Mihalik, J[3]., Sullivan, J[4]., & Salmon, D[4].

[1]University of Otago; [2]Auckland University of Technology; [3]University of North Carolina; [4]New Zealand Rugby

Background: In 2018 New Zealand Rugby (NZR) implemented a concussion management pathway (CMP) to improve concussion management in community rugby. The CMP uses technology to support the management of a player through their concussion. Physiotherapists are often the only health provider involved with the community teams, and play a critical role in the management of concussions.

Purpose: This study explored physiotherapists' experiences of rugby-related concussion management as part of the CMP.

Methods: A pragmatic, qualitative descriptive approach to explore the perceptions of physiotherapists *(n* = 24) involved in the CMP. Thematic analysis was used to analyse data.

Results: Four themes were identified: i) 'Walking the tight rope between player welfare and performance': physiotherapists played a balancing act amongst the different attitudes and priorities of the various rugby stakeholders, namely the players, coaches, parents and general practitioners (GP). The CMP appeared to have a stabilising influence supporting the physiotherapists' role. ii) 'The influence of physiotherapists' authority' within the team and concussion management responsibilities; iii) 'Multi-directional communication' with all stakeholders; and iv) 'The influence of context', which included the complexity of concussion injuries, knowledge of the physiotherapist and team, work-load and resources to support the physiotherapist and access to a GP.

Conclusion(s): Physiotherapists had positive attitudes towards the CMP and appear to be well-positioned for their active role in the pathway. Priorities of other stakeholders; the authority of the physiotherapist and the flow of communication may either help or hinder physiotherapists' ability to optimally manage and support players with concussion.

Implications: (1) Early career physiotherapists should have mentoring to enhance their self-confidence and authority within the team environment; (2) Placing these findings in the context of the developing Physiotherapy Advanced Practitioner, there may be opportunity that such physiotherapists could support some of the GPs responsibilities in terms of concussion and/or clearance for return-to-learn and -play.

GIVING PATIENTS AGENCY OVER THEIR REHABILITATION: THE EFFECTIVENESS OF SELF-GUIDED WEB-BASED INTERVENTIONS TO IMPROVE PHYSICAL ACTIVITY FOR PEOPLE WITH CHRONIC HEALTH CONDITIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Stavric V., Kayes, N., Rashid U., & Saywell, N.

Auckland University of Technology

Background: The benefits of physical activity (PA) in people with chronic health conditions are well documented. This research looked at whether digital health interventions could give patients agency to guide the direction and progression of their rehabilitation.

Objective: The aim of this systematic review was to determine the effectiveness of self-guided web-based PA interventions to improve physical activity outcomes for people with chronic health conditions.

Methods: A comprehensive and systematic search for randomised controlled trials was conducted through university library databases, up to December 2021. Included trials evaluated the effect of self-guided web- or internet-based PA interventions on any PA related outcomes. Only studies whose interventions had minimal human contact and whose interaction was automatically generated were included. Standardised mean differences and 95% confidence intervals were calculated. PA data were pooled, and forest plots were generated.

Results: Of the 10,404 papers identified, 18 met the eligibility criteria and included 2466 participants. There was wide variety of health conditions and intervention parameters. Self-reported PA in the intervention group was greater than controls at the end of the intervention (standardized mean difference (SMD) 0.18 95% CI = 0.07, 0.28) and at follow up (SMD 0.31, 95% CI 0.16 to 0.46). The difference in objectively measured PA at the end of the intervention was moderate and non-significant (SMD 0.33 95% CI -0.22 to 0.87).

Conclusions: Self-guided web-based PA and exercise interventions provided a positive effect on PA immediately after the intervention. An unexpected and positive finding was a sustained increase in PA at follow-up. Physiotherapists are ideally placed to be examining different models of rehabilitation delivery and this review demonstrates that improvement in physical activity can be achieved with minimal contact. This concept might be confronting, but we believe it is important for our profession to lead the discussion.

Protocol Registration: PROSPERO CRD42019132464

VISUAL FIXATIONS AND VISUALLY INDUCED DIZZINESS: AN EXPLORATORY STUDY

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Background: Visually induced dizziness can develop as a sequela of a vestibular disorder and is characterized by symptoms of nausea, dizziness, and imbalance in rich visual environments such as supermarkets and shopping malls. To date, the mechanisms underlying visually induced dizziness are poorly understood. The aim of this exploratory study was to investigate the characteristics of visual fixations and postural sway in adults with visually induced dizziness compared to healthy adults when exposed to increasingly complex visual environments.

Methods: We recruited 20 adults with visually induced dizziness and 20 healthy adults to this cross-sectional exploratory study. Participants were instructed to maintain gaze on letters projected on a large screen with backgrounds of differing visual complexity. The number of visual refixations, movement of the centre of pressure, and movement of the head and body centres of mass were recorded.

Results: Adults with visually induced dizziness showed a significantly higher number of visual refixations ($F = 10.592$, $p < 0.01$), and increased mean velocity of head and body centres of mass movement ($F = 14.034$, $p < 0.01$ and $F = 6.553$, $p < 0.05$ respectively) compared to healthy adults.

Significance: Adults with visually induced dizziness exhibited visual fixational instability and increased postural and head sway compared to healthy adults. This was mainly observed in conditions with complex and moving backgrounds. This may account for reports from adults with visually induced dizziness of worsening symptoms in busy environments. The results from the study may assist in guiding intervention development to reduce symptoms of visually induced dizziness.

LESSONS MĀORI LED EARLY CHILDHOOD CENTRES CAN SHARE TO IMPROVE PAEDIATRIC HEALTH SERVICE – PERCEPTIONS OF CAREGIVERS OF MĀORI CHILDREN ATTENDING MĀORI CENTRED CHILDCARE

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Background: Lack of culturally responsive healthcare is one factor that contributes to the persistent health inequities that Māori experience in Aotearoa New Zealand. Health professionals are required to improve their cultural responsiveness by meeting cultural competence standards. There is limited evidence exploring what whānau with tamariki Māori value within their Māori-centred childcare services. Exploring the values and concepts considered meaningful at successful Māori designed and led childcare services, such as early childhood education centres, may provide insight into ways of developing and delivering child (or paediatric) physiotherapy services.

Purpose: The aim of this study was to identify the values and concepts considered culturally important to whānau with tamariki Māori at one Māori led, bilingual, early childhood education centre in New Zealand and consider their applicability to paediatric health services.

Methods: In-depth interviews were conducted with caregivers/whānau of tamariki Māori attending Te Pārekereke o Te Kī. Five semi-structured interviews were performed with eight parents of tamariki Māori currently attending the centre. A general inductive, latent and constructionist approach, informed by Māori models of health including Te Whare Tapa Whā, Te Wheke, and the Meihana model underpinned the interpretative and iterative analysis. In addition, the research team was guided by Kaupapa Māori Research (KMR) principles for data collection and analysis.

Results: Two major themes were identified, 'Whānau Values and Aspirations' and 'Engagement'. The subthemes of 'Whānau Values and Aspirations' were 'Whanaungatanga', 'Kaupapa Māori', and 'Freedom to Explore'. The subthemes of 'Engagement' were 'Accessibility' and 'Wishes of Whānau respected'.

Conclusion(s): Strong connections and relationship were established where the environment was perceived to feel like an extension of home. Tuakana/teina relationships, that is teacher (tuakana) and learner (teina) were acknowledged as reciprocal relationships between parents and kaiako (teachers), parents and grandparents, as well as between the tamariki themselves demonstrating the fulfilment of Tino rangatiratanga.

Implications: This research provides insight into the values that paediatric healthcare workers can incorporate into their services to better engage with whānau who have tamariki Māori. Communication and co-design with successfully established Māori led early childhood groups can improve the cultural responsiveness of our paediatric healthcare services.

BARRIERS AND FACILITATORS ENCOUNTERED BY PHYSIOTHERAPISTS WHEN MANAGING PATIENTS WITH ROTATOR CUFF TEARS

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Background: Previous literature suggests physiotherapists may encounter challenges when assessing and managing patients with rotator cuff tears. New Zealand has a unique health system and those challenges have not been explored qualitatively within the New Zealand context.

Purpose: To explore the challenges and facilitators faced by physiotherapists in New Zealand when assessing and managing patients with rotator cuff tears.

Methods: This is a qualitative study, using semi-structure interviews. We recruited participants who have treated at least 3 patients with rotator cuff tears in the last year and held a current annual practice certificate with the Physiotherapy Board of New Zealand. One researcher transcribed interviews and read transcripts to increase familiarity with the data. One researcher coded the data by identifying relevant sections and quotes to form groups of similar codes. These codes were then analysed to identify emergent themes that could answer the research question. Three researchers discussed and refined themes until agreement was reached. Individual interviews were audio-recorded, transcribed in verbatim and analysed using an interpretive description framework.

Results: Four themes were identified: (1) reliance on biomedical approach: clinicians relied on a biomedical approach to base their clinical reasoning when assessing and planning the treatment; (2) challenges to incorporate psychosocial factors; (3) the role of experience; (4) macro and meso level barriers.

Conclusion(s): Identified barriers Clinicians faced challenges ranging from individual- to macro-level barriers. Our findings provide invaluable insight into the challenges and facilitators physiotherapists encounter in New Zealand when managing patients with rotator cuff tears.

Implications: These findings can be used by future researchers, healthcare services and policy makers to reduce barriers and improve care for those patients.

COMMUNITY ORTHOPAEDIC TRIAGE: EARLIER ASSESSMENT AND INTERVENTION THROUGH PHYSIOTHERAPY-LED ORTHOPAEDIC CLINICS

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Bay of Plenty District Health Board

Background: Musculoskeletal (MSK) conditions are the leading cause of disability in New Zealand. Demand on Orthopaedic services increasingly outweighs capacity. Advanced practice physiotherapy roles are well established internationally demonstrating safety, cost effectiveness, diagnostic agreement and positively impacting wait times for speciality care. To our knowledge, this is the first example of an innovative service model providing publicly funded physiotherapy-led community-based orthopaedic clinics.

Purpose: To provide a physiotherapy-led community-based orthopaedic triage service with earlier access to assessment and alternatives to surgery for people with musculoskeletal orthopaedic conditions.

Methods: The BOPDHB Orthopaedics and Allied Health services partnered to develop and implement a community orthopaedic triage service (COTS). Referrals from primary care are triaged within 72 hours and a comprehensive assessment performed by a highly skilled physiotherapist within 6–weeks. The Physiotherapist identifies an appropriate wellbeing management pathway, including surgical and non-surgical management options. There are 6 clinics located throughout BOP communities with a particular focus on rural and high Māori population areas.

Results: In 2021, 1669 patients were seen in COTS clinics. The average wait time for an appointment was 42 days. DNA rates were less than 2%. Outcome statistics reveal 30% of people were referred to Orthopaedic First Specialist Assessment (FSA) for a range of reasons including but not limited to high tech imaging, interventional injection and/or surgical opinion. 50% of those referred were for high-tech diagnostic imaging which has led to the development of a Spinal MRI pathway which is currently being piloted. 45% are referred for physiotherapy intervention, 13% to a community-based education and activity programme and 10% discharged with appropriate education and advice.

Conclusions: Service evaluation shows preliminary evidence that up to 70% of GP referred patients can be triaged, assessed and managed independent of Orthopaedic FSA

Implications: The COTS model demonstrates the role for physiotherapists, with appropriate training and competence, in enabling people with MSK conditions to have access to timely orthopaedic triage, assessment and alternatives to surgery closer to their homes and communities. The next step is to explore access to timely non-surgical interventions and empower people to live well with musculoskeletal disease.

IMPLEMENTATION OF TIKANGA MĀORI INTO CLINICAL PHYSIOTHERAPY TREATMENT – EXPERIENCES AND RECOMMENDATIONS

Wilson-Munday, T., Petley, W., & Bryant, K.

University of Otago

Background: Tikanga is a Māori “way of doing things” in Te Ao Māori in the broadest sense: the customary system of practices and values that are manifested in every social environment. Using tikanga Māori practices within healthcare delivery is an identified method which is engaging for many Māori patients. HRC funded 4th year UoO physiotherapy student, Tali Wilson-Munday (supervised by Katrina Bryant and Witana Petley), conducted a summer studentship to investigate perspectives of tikanga practices in physiotherapy.

Purpose: The goal of this study was to provide insight on challenges and accomplishments for physiotherapists on incorporating tikanga Māori techniques, and recommendations for future advances in tikanga Māori application in physiotherapy clinical practice.

Methods: This study was conducted using qualitative methodology underpinned by Kaupapa Māori theory (KMT). Data was collected via semi structured interviews with six Māori physiotherapists.

Results: Results from interviews revealed many interlinking themes within experiences and recommendations including: acknowledged diversity of lived experiences of tikanga for Māori; need for allowing more resources to create spaces to whakamana Māori communities; normalising te reo and tikanga Māori by supporting increased tikanga in undergraduate training and workplace practices; challenging barriers to institutions and workplaces that limit implementation of tikanga in physiotherapy clinical practice.

Conclusion(s): Participants provided clear insights on their experiences with tikanga Māori as well as recommendations on how to effectively implement Tikanga Māori into clinical practice. There is room for improvement in resources and organisational policy within physiotherapy training and clinical practice supporting tikanga Māori and need for further research on this topic.

Implications: Guided by results of this research, normalisation of application of tikanga Māori within physiotherapy in Aotearoa will lead to positively impact how physiotherapists provide accessible treatment for Māori patients and whānau, helping move towards equitable health outcomes.

Focused Symposium Abstracts

PAIN SENSITIVITY ASSESSMENT AND CLINICAL MANAGEMENT IN MUSCULOSKELETAL DISORDERS

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Learning objectives

1. Understand the evidence for pain sensitivity to (1) modify patient presentations; (2) affect common treatments utilised by musculoskeletal clinicians; and (3) influence the prognosis/course of a disorder.
2. Utilise screening tools and subjective features to identify when physical assessment of pain sensitivity should be prioritised in the physical examination and develop knowledge of assessment strategies for pain sensitivity.
3. Develop knowledge and skills to integrate assessment findings into clinical reasoning to formulate management plans for patients with heightened pain sensitivity.

Description

Research on musculoskeletal disorders indicates that pain sensitivity can be an important consideration for musculoskeletal clinicians in the holistic view of a patient presentation. Sub-groups of people with musculoskeletal disorders have been shown to display signs of heightened pain sensitivity and people with low back pain and heightened pain sensitivity demonstrate greater levels of pain and disability and poorer mood. Further, the presence of heightened pain sensitivity has been shown to influence outcomes for example, responses to lumbar surgery, knee surgery, and guideline-based physiotherapy management for knee osteoarthritis and chronic whiplash.

Quantitative sensory testing has been used widely in research studies; however, there is growing interest in using these assessments in clinical practice, called clinical sensory testing. The diversity and inconsistencies in research findings in this field can make this a difficult concept for clinicians to navigate, particularly when individuals show variable patterns. This workshop will present clinical sensory testing for pain sensitivity and how the relationship of pain sensitivity with pain and disability is not linear. Rather the real importance of pain sensitivity in a clinical presentation may be: (1) the potential for pain sensitivity to modify the effect of common treatments utilised by musculoskeletal clinicians, and/or (2) the effect of pain sensitivity on the prognosis/course of a disorder. Further, pain sensitivity assessment may form an important part of identifying the recently defined third mechanistic category of pain called nociplastic pain.

This symposium will comprise three main parts:

1. The evidence for the presence of pain sensitivity in musculoskeletal disorders and how pain sensitivity can impact treatment responsiveness. Evidence relating to the spectrum of subgroup and individual presentations will be highlighted and discussed with respect to its clinical relevance.
2. A pragmatic approach to clinical assessment will be provided. The use of screening tools and in the physical examination will be described. A pragmatic blueprint for specific assessment related to pain sensitivity will be outlined including static and dynamic measures (e.g., exercise-induced hypoalgesia). Issues relating to the reliability and diagnostic validity of using pain sensitivity tests in clinical settings will be discussed.
3. Using clinical examples, a framework for integrating assessment findings into clinical reasoning to guide assessment and formulate management plans for the pain sensitive patient will be provided. Examples relevant to primary care and more specialised pain services will be discussed.

SUPPORTED SELF- MANAGEMENT: WHY IT'S HOT AND WHAT IT'S NOT

Hale, L., Perry, M., & Gray, E.

University of Otago

Learning objectives

1. On completion of this focused symposium, attendees will:
2. Know the principles underpinning supported self-management.
3. Understand the distinct role of physiotherapy in supported self-management compared to self-management.
4. Experience the application of these principles from a simulated activity.
5. Reflect on how the principles of supported self-management can be applied in their practice.

Description

Self-management is arguably the healthcare buzzword of the early twenty first century. Self-management is described as "a dynamic process in which the individual manages the symptoms, treatment, physical, and psychosocial consequences and lifestyle changes inherent to living with a chronic condition," yet most of these decisions are made away from the healthcare professional.

Recognising people's own expertise in self-managing their own lives, and thereby extension their own health condition, health professional involvement in *supported* self-management is increasing. Supported self-management is more than "self-management"; it is a partnership between healthcare professionals, patients and their whānau/family, with healthcare professionals working collaboratively to support and empower patients and their whānau/families to manage their health. In supported self-management, healthcare teams and systems collaborate with an individual and their whānau to support their self-management endeavours and enhance well-being through informed decision making and action taking, to care for and sustain their or their loved one's health. Literature suggests not all healthcare professionals take on this partnership role, with healthcare professionals acting rather as educators, dictators and monitors. Health professionals act in these expert roles because they feel responsible for patient outcomes and have a hard time relinquishing control to patients.

Barriers to participation in the process of supported self-management include multi-step referrals and uptake processes, environment and financial barriers, and a mismatch between individual health beliefs and programme content, focusing on symptom management and patient activation, and not on what matters to the person. The term "self" implies individual responsibility and personal agency, a perception criticised for diminishing need for social responsibility and collective action to support people with varying needs. Further, self-management is considered a Western construct necessitating adaptation for indigenous and ethnic minority groups. Evidence now supports a capabilities perspective approach to supported self-management to develop a collaborative, supportive and enabling relationship between the person with the health condition/s and their healthcare professionals. Additionally, whilst health literacy plays an important role in self-management, the focus on an individual's health literacy attributes (i.e., that individuals have poor health literacy) is now questioned, contending that the onus should be on organisations to be responsive to the health literacy of people accessing their services.

In this focussed symposium we will elaborate on what *supported* self-management is, its underlying principles and values, and how it differs to self-management. We will then, from our research, illustrate these concepts with clinical examples from a variety of practice contexts and with interactive activities to provide guidance for how they might be applied in a range of physiotherapy practice. We will encourage attendees to reflect on how they can embed supported self-management principles into their own clinical practice no matter their work setting.

Fishbowl Abstract

CHILDREN ARE NOT SMALL ADULTS – BUT DOES EVERYONE KNOW THAT?

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Childhood is a unique period of extensive development and learning, requiring practitioners' acknowledgement and understanding of the cognitive, physical, psychological and social changes in the children and whānau they work with. Musculoskeletal disorders in paediatric patients account are the sixth most common reason for presentation at primary care. With the Accident Compensation Corporation model in Aotearoa, children can and do present in the first instant to a physiotherapy private practitioner, which predominantly has an adult-focussed environment and approach. Currently there is limited specific paediatric content in the undergraduate physiotherapy degrees offered in Aotearoa.

Within primary care, a lack of specific training and understanding of child-specific conditions have been noted as reasons for poor management of childhood chronic pain and other conditions. Additionally, a lack of clinical guidelines is highlighted as a reason for delays in diagnosis and numbers of tertiary referrals for children. With paediatric patients it is pertinent to recognise not only red flags but yellow flags and also be aware of not pathologising normal variants throughout the ages. Internationally there are musculoskeletal paediatric physiotherapy competence frameworks which provide physiotherapists with a guide to the range of knowledge, and skills and abilities they need to work at a safe, effective, professional standard. The question is should we be using them here in Aotearoa?