2025 | VOLUME 53 | ISSUE 1 (SUPPLEMENT): S1-S51
ISSN 2230-4886 (ONLINE)

WHAKATERE
Physiotherapy Conference 2024

CONFERENCE ABSTRACTS

PHYSIOTHERAPY
NEW ZEALAND
Kōmiri Aotearoa

NZJP

Abstracts from Whakatere/Physiotherapy Conference 2024, held in Christchurch, New Zealand, 6–8 September 2024 [https://doi.org/10.15619/ncjp.v53i1.478]

Abstracts are listed in order by first-named author under the following categories: keynote speakers, invited speakers, focused symposia, workshops, and podium and poster presentations. Where relevant, the presenting author's name(s) is bolded and underlined.

Keynote Speaker Abstracts

RE–IMAGINING THE REHABILITATION SYSTEM: WORKING TO CREATE A SUSTAINABLE FUTURE

Main, M.

Accident Compensation Corporation, New Zealand

Over the last 50 years, the health and rehabilitation sector in New Zealand has experienced many changes and challenges. What has stayed consistent is the vital role physiotherapy plays in ACC's kiritaki (clients') recovery journeys. Today, ACC continue to face challenges around sustainability of the Accident Compensation Scheme, including declining rehabilitation performance and workforce availability. With these challenges in mind, ACC are focused on understanding what they need to do to ensure the Scheme's future is sustainable for generations to come and that all kiritaki receive the treatment and support they need to recover.

In this presentation, ACC's Chief Executive Megan Main will explore:

- an overview of the ACC system in context and our current operating landscape
- changes ACC are making to the way we commission services and our shift towards commissioning models that place kiritaki at the centre of their recovery through a focus on value-based healthcare
- integrating injury prevention into everything we do
- our strategic priorities for the next 3 years and the opportunities to work together.

LINKED THROUGH PRESSURE: BREATHING, TALKING, POSTURE, AND A WHOLE LOT MORE!

Massery, M.

Owner, MasseryPT LLC, Chicago, USA

Course description: This lecture proposes a new definition of "core stability"; redefining it as the dynamic control of trunk pressures in order to optimise postural stability (balance). Dr Massery will present novel research demonstrating the role of vocal folds as a critical component of these normal balance strategies and she will present five major roles of the diaphragm: 1) breathing (of course), 2) maintaining postural stability, 3) minimising reflux forces, 4) enhancing bowel motility, and 5) aiding venous return. You'll never look at the diaphragm as "just a respiratory muscle" again!

Learning objectives:

1. Describe how trunk pressures link breathing and postural control using the Soda Pop Can Model.
2. Demonstrate the role of the vocal folds in normal postural stability responses (balance) and make the case for using speaking valves for patients with tracheostomies.
3. Describe the multiple, simultaneous roles of the diaphragm as related to breathing, postural control, gastroesophageal reflux, constipation, and venous return, thus making the case for including diaphragm strengthening as a common practice in rehabilitation programmes.

THE FIT FOR PURPOSE/PLAY/PERFORMANCE MODEL – THE SCIENCE, THE EVIDENCE AND THE FUTURE

Moseley, L.

University of South Australia, Kaurna Country, Adelaide, Australia

Until recently, treatment approaches to chronic pain were predominantly repurposed approaches that had been tested, with variable success, in other conditions. However, discoveries around "how pain works", how complex bodily systems learn and adapt, and how sensorimotor processing is disrupted in chronic pain, led to new treatments built "from the ground up" that directly targeted those disruptions. The Fit for Purpose model was developed to integrate the most effective of those treatments into complex care programmes, grounded in rethinking pain and its causes, refining neuroimmune networks (or "neurotags") and gradually reinstating functional and structural resilience. The model is centred around the concept of "bioplasticity" and clinical trials testing the model against a range of comparators are in process, planned, or completed. In this talk I will cover the scientific underpinnings of the model, the current evidence around its effectiveness in a range of conditions, its failures and limitations, the powerful role that consumer feedback has played in adaptation, and the resources that have been developed to standardise and optimise implementation.

COGNITIVE FUNCTIONAL THERAPY FOR PEOPLE WITH DISABLING LOW BACK PAIN

O'Sullivan, P.

Curtin University, Perth, Australia

The presentation will present the latest findings from the RESTORE back pain trial of Cognitive Functional Therapy published in the *Lancet.* Cognitive Functional Therapy is a person-centred care led by physiotherapists, once serious causes of back pain have been ruled out. It is aligned to best practice guidelines.

Cognitive Functional Therapy helps the patient make sense of their pain by understanding the various and unique contributing factors related to their condition and develop a positive mindset about their pain. It guides people to re-learn how to move and build trust their back without protection. Re-engaging with the body in this way promotes a return to valued living based on the person's goals, while decreasing pain and restriction. It also promotes a healthy lifestyle, such as engaging in physical activity, sleep, stress management, work, and social activities. Cognitive Functional Therapy provides a broad framework for person-centred care and behaviour change, applicable for people with other chronic pain and health conditions.

THE ROLE OF WHAKATERE IN THE MEIHANA MODEL – HAS IT A PLACE IN PHYSIOTHERAPY?

Pitama, S.

University of Otago, Christchurch

The Meihana Model whakapapa starts within psychology, further found a home in medical education, and has since been adapted in many health professional education programmes including nursing, speech language therapy, social work, and other disciplines. This presentation will provide a brief overview of the Meihana Model as a tool for decolonising clinical practice, the role of whakatere within the Meihana model, and provides space to discuss whether there is a place for the Meihana Model in the discipline of physiotherapy.

FUNCTIONAL NEUROLOGICAL DISORDER – PAST, PRESENT, FUTURE

Stone, J.

University of Edinburgh, United Kingdom

In this talk, I will discuss where we've been, where we are, and where we are going with clinical and research aspects of functional neurological disorder (FND). I will do so with particular relevance to physiotherapy.

How things were. FND was previously Conversion Disorder in DSM-IV. It was a diagnosis of exclusion that couldn't be made unless there was a recent stressful event. Neurologists who generally made the diagnosis were typically disinterested or ambivalent about whether FND was similar to feigned illness. The treatment was considered purely psychological.

How things are. FND is now firmly a diagnosis of inclusion with positive signs like Hoover's sign, the tremor entrainment test, and typical features of seizures. Entities like Persistent Postural Perceptual Dizziness and Functional Cognitive Disorder have pushed the boundaries of how we define FND. Positive diagnosis also allows us to approach communication with the patient in the same way as any other condition and has helped us recognise a high frequency of FND comorbidity in patients with other neurological conditions. FND is a disorder that challenges dualistic ideas about the brain and mind. Studies of the neural underpinnings of the disorder don't negate the importance of a psychological perspective, but do help rebalance it as a multidisciplinary condition, and not just the domain of psychiatry. Predictive processing models are especially promising. I will describe how the evidence base for physiotherapy, occupational therapy, psychological, and other therapies has emerged from this new way of thinking about the disorder.

Where things are going. The FND Society (fndsociety.org) is a new international society with around 1000 members and a meeting in Verona 2024 that highlights new vigour in the field. We are discovering new things about comorbidity, especially with Autism/ADHD and joint hypermobility as well as developing novel approaches to treatment, especially for patients where treatment has failed. Data from the largest trial of physio, Physio4FND, should be available for presentation. The FND field has been particularly successful at working with patient-led organisations such as fndhope.org and fndaction.org.uk and I think future success lies in strengthening these collaborations.

REFRAMING PHYSIOTHERAPY EDUCATION: JOYFUL COMPLEXITY AND COMFORTABLE UNCERTAINTY

van Wijchen, J.

Western Norway University of Applied Sciences, Norway; HAN University of Applied Sciences, The Netherlands

In this workshop, "Reframing Physiotherapy Education: Joyful Complexity and Comfortable Uncertainty", we explore innovative approaches to physiotherapy education that embrace the inherent complexities and uncertainties of healthcare practice. The focus is on educating physiotherapists and physiotherapists as educators, linking physiotherapy practice contexts.

By placing becoming at the core of education, we emphasise growth, development, and transformation through dynamic interactions with content, context, and situations. Participants will delve into the integration of existentialism, critical pedagogy, and the capability approach to create a framework that prepares physiotherapists for contemporary challenges. We will discuss how mindlines – collectively developed, tacit guidelines – foster adaptive, context-sensitive practitioners capable of critical thinking and self-management.

The workshop will highlight the value of embracing strangeness and absurdity to promote critical inquiry and reflective practice. We will explore strategies for developing resilient, capable physiotherapists through holistic and contextually rich learning environments and examine the plural roles of physiotherapists as practitioners, educators, and innovators, emphasising continuous professional development and mentorship.

Key themes include promoting educational justice, navigating different learning zones (comfort, learning, and panic zones), and implementing sustainable practices to ensure future relevance. Participants will engage in interactive discussions, reflective exercises, and collaborative activities to inspire and empower educators and practitioners.

By the end of this workshop, participants will have experienced insights and practical tools to foster more effective, inclusive, and dynamic learning environments in physiotherapy education. Participants are invited to embrace the joyful complexity and comfortable uncertainty at the heart of transformative learning, ensuring their practices are both current and forward-thinking.

Focused Symposia Abstracts

KAUPAPA MĀORI IN PHYSIOTHERAPY PRACTICE

[1,2]Petley, W., [1,2,3]Buhler, M., [1,4]Wilson-Scully, D., [1,2,5]Tikao-Harkess, S., & [1,6]Taylor, B.

[1]Tae Ora Tinana, Physiotherapy New Zealand; [2]University of Otago, Dunedin; [3]Te Whatu Ora – Health New Zealand; [4]Wai Mauri Health, Hamilton; [5]Taurite Tū Inc.; [6]TBI Health, New Zealand

Due to a disastrous history of colonisation, Māori are yet to enjoy the same level of health care access and outcomes as most other populations in Aotearoa. Major ongoing factors include service costs, racism, and practice environments and customs that are not familiar or welcoming. Physiotherapy is no exception. For example, despite higher rates of injury for Māori, utilisation of ACC-funded rehabilitation services including physiotherapy is much lower.

Kaupapa Māori health services are designed by Māori, for Māori, and use mātauranga Māori. They are designed with the knowledge of the way in which Māori will flourish best. Resource redistribution is also a goal of the wider social transformation sought by these initiatives. Kaupapa Māori health services are becoming more familiar in Aotearoa. However, Western biomedical knowledge and systems are still privileged, making it difficult to have mātauranga-evidenced interventions recognised by funders and decision makers. Both biomedical outcomes and those that align with Māori health world views have been demonstrated by Kaupapa Māori interventions. Evidence is also in the experiences of Kaupapa Māori health service designers, providers, and recipients.

In this focused symposium we gather experiences of Kaupapa Māori in physiotherapy practice to share learnings, celebrate successes, and help us look to the future. We introduce some of the theoretical underpinnings of Kaupapa Māori in practice to better understand what it is that is being done. This then prepares a space for exploring perspectives, navigating obstacles, and beginning to define our foundations for growing and enabling Kaupapa Māori physiotherapy practice.

"Ko te manu e kai ana i te miro, nōna te ngahere. Ko te manu e kai ana i te mātauranga, nōna te ao."
(The bird who feeds on the berries, the forest is his. The bird who feeds on knowledge, the world is his.)

THE PRIMARY AND COMMUNITY CARE WAKA – HOW CAN PHYSIOTHERAPY HOEHOE TOGETHER WITHIN TEAMS?

[1]Higgs, C., [2]Gallagher, R., [1]Silcock, C., [3]Walker, S., & [4]Walker, K.

[1]Centre for Health, Activity and Rehabilitation Research, School of Physiotherapy, University of Otago; [2]Whanganui Regional Health Network; [3]Central Otago Health Services Ltd; [4]Health New Zealand, Te Manawa Taki, New Zealand

In an increasingly pressured primary and community care landscape, strategic focus is shifting toward interprofessional care models that can provide patient-centred care, strengthen collaborative working relationships within local communities and work toward Pae Ora (healthy futures). The scope of practice of physiotherapists mean they have potential to provide broad and timely quality care, and examples can already be seen of physiotherapists providing care in novel primary and community care spaces supporting high needs populations. There are further growth opportunities, the Comprehensive Primary Community and Rural Role Descriptions for Physiotherapists being a recent example, so how prepared are we as a profession to respond? The new government continues to indicate support to reform the health system and funding models in primary care continue to be in the spotlight alongside equitable health outcomes. To address this potential, this symposium focuses on two critical challenges: One, how can physiotherapists best engage with health funders and the public to clearly explain what services we could and should be offering to help tackle our current inequitable health service delivery and create robust proposals and business cases to support the argument? Two, physiotherapists working in these spaces require support to sustain and maintain their roles, skills and experience. How is this best achieved to grow the skills and capacity of these important primary care physiotherapy roles to provide best practice care for the communities that need it the most?

BEYOND THE BASICS: DUAL TASKING FOR PHYSIOTHERAPISTS

[1]Taylor, D., [1]Saywell, N., [2]Adams, T., [1]Shaikh, N., [1]McLaren, R., [1]Chaudhary, S., & [1]Olsen, S.

[1]Rehabilitation Innovation Centre, Health and Rehabilitation Research Institute, School of Clinical Science, Auckland University of Technology, Auckland; [2]Active Living and Rehabilitation: Aotearoa New Zealand, School of Clinical Sciences, Auckland University of Technology, Auckland, New Zealand

Dual-task paradigms, which involve concurrently engaging in challenging motor and cognitive tasks, are an approach to functional assessment and training that aligns with real-world task requirements. This approach has relevance to many areas of physiotherapy including sports injuries, orthopaedic and neurological rehabilitation, and healthy aging. Dual-task paradigms recognise the interconnected nature of neurological, musculoskeletal, and cardiovascular systems, allowing practitioners to simultaneously challenge motor and cognitive domains. Literature has highlighted the potential role of dual-task paradigms in anterior cruciate ligament (ACL) injured populations, lower limb injury prevention strategies, and for assessing concussion-related gait deficits and falls risk in older adults. To successfully apply this approach in physiotherapy practice, it is important to understand which tasks should be incorporated into dual-tasking scenarios, and the appropriate challenge level. This decision-making process involves a comprehensive evaluation of how selected tasks will influence the patient's overall performance and motor learning capabilities as well as considering their impact at a functional level. This symposium will explore essential aspects of integrating dual-task paradigms into physiotherapy practice. By delving into the complexities of dual tasking, this symposium aims to contribute valuable insights to the field, guiding the formulation of more effective and tailored training regimens for diverse populations.

COUGH ASSIST DEVICES IN 2024

[1]O'Sullivan, R., [2,3]Seller, D., [4,5,6]Mooney, S., [7]Scoones, R., & [8]Wetherston, E.

[1]Christchurch Hospital, Te Whatu Ora – Health New Zealand; [2]Wellington Hospital, Te Whatu Ora – Health New Zealand; [3]School of Physiotherapy, University of Otago, Wellington; [4]Health New Zealand – Te Whatu Ora Counties Manukau; [5]Auckland University of Technology, Auckland; [6]New Zealand Respiratory and Sleep Institute; [7]Health New Zealand – Te Whatu Ora Te Toka Tumai Auckland; [8]Dunedin Hospital, Te Whatu Ora – Health New Zealand, New Zealand

Cough assist devices have been a key part of physiotherapy practice for over 15 years in New Zealand. Since then, demand for use from physiotherapists and consumers has significantly increased. Maintaining pace with this change in New Zealand has proven challenging in terms of technology, application, equity, training, and accessibility. More recently, this challenge accelerated in 2023 with the withdrawal of the primary E70 Cough assist device and the introduction of 3–4 alternative devices with varied functions and settings.

This symposium aims to explore the breath of eligibility, access, and application of the cough assist devices across community and acute settings, and across the lifespan, i.e., infants to the older adult. Furthermore, recent research relating to clinical guidelines, recommended algorithms, and device functionality will be presented and discussed. Cough assist eligibility and application will be explored across the clinical continuum including community, acute, and intensive care perspectives, contextualised by relevant clinical guidelines. Standard algorithms as useful reference points in paediatric and adult groups will be discussed as key "starting points", especially for the less experienced. Community application considers the challenges around device access, user experience, and monitoring outside the hospital environment. Device application in intensive care will consider the device's role beyond neuromuscular diseases.

Though focused on different patient/client groups and health environments, key learnings from each of these areas will be discussed and include "tips and tricks" for optimising device application. The panel represents adult and paediatric services, intensive care, acute, and community care and diverse geographical locations.

OVERCOMING SYSTEMS FAILURE IN CONCUSSION MANAGEMENT: LOOKING FORWARD TO FUTURE INNOVATIONS

[1]Galea, O. A., [2]Reid, D., [2,3]Forch, K., & [1]Sole, G.

[1]Centre for Health, Activity and Rehabilitation Research, School of Physiotherapy, University of Otago, Dunedin; [2]Active Living and Rehabilitation Aotearoa, Clinical Sciences, Auckland University of Technology, Auckland, [3]Axis Sports Medicine, Auckland, New Zealand

Concussion or mild traumatic brain injury is an increasingly prevalent health concern across age groups, activity levels, and ethnicities in Aotearoa New Zealand. Clinical recovery is delayed for 50% of concussions, and increased time to initial medical consultation is a significant risk factor for such delay. Post-injury barriers to medical access, siloed and generic treatment approaches, and premature return to school can confound recovery. Despite substantial evidence in support of acute multi-system triage to direct management, these methods are not always employed or are unavailable. Health system failures and challenges within school and some sport code injury management pathways mean vulnerable populations are at risk of being overlooked entirely. Combined, these issues have significant implications for recovery rates, determination of recovery, and safe return to daily activities, learning, work, and sport. Change is needed urgently; it is coming, and physiotherapists are potentially at its core.

INVITED SPEAKER ABSTRACTS

INCIDENCE OF COMPLICATIONS AFTER EMERGENCY ABDOMINAL SURGERY – GET EXERCISING (ICEAGE): A MULTI-CENTRE RANDOMISED CONTROLLED TRIAL

[1,2]Boden, I., [2,3]Hackett, C., & [1,4]Sullivan, K.

[1]Physiotherapy Department, Launceston General Hospital, Launceston, Tasmania, Australia; [2]University of Melbourne, Melbourne, Australia; [3]Princess Alexandra Hospital, Brisbane, Australia; [4]Monash University, Melbourne, Australia

Aim: We hypothesised that an enhanced physiotherapy care package of education, breathing exercises, and early rehabilitation would prevent respiratory complications and improve physical recovery after emergency laparotomy compared to standard care alone.

Design: ICEAGE was a prospective multicentre, parallel-group, double-blinded, active-placebo, randomised controlled trial powered for superiority.

Methods: From 2016 to 2018, 288 consenting patients admitted for emergency laparotomy at three hospitals in Australia were randomised via concealed allocation to either "standard-care physiotherapy" (15 min daily ambulation and a single session of coached breathing exercises) or "enhanced-care physiotherapy" (30 min daily rehabilitation and twice daily coached breathing exercises). The primary outcome was a respiratory complication within 14 postoperative days.

Results: Compared to standard-care, enhanced-care physiotherapy halved respiratory complications: 27% v 13% (ARR 15% (95% CI [5, 24%]), NNT 7 (95% CI [4, 19], $p = 0.002$)) and referrals for sub-acute rehabilitation (20% v 8%, $p = 0.02$). Participants receiving enhanced postoperative physiotherapy had a shorter hospital stay (13.4 days v 10.8 days, $p = 0.05$) and reported better quality of life and physical function (WHODAS 30 (9) v .33 (10)) on hospital discharge and at 3 months post-surgery.

Key practice points: ICEAGE is the world's first multicentre trial testing physiotherapy to improve outcomes following emergency laparotomy. Twice daily chest physiotherapy and 30 min of daily exercise therapy delivered in the first seven postoperative days following emergency laparotomy prevented respiratory complications and improved physical function and quality of life up to three months after surgery. Further research is required to determine the dosage threshold for benefit and the cost–benefit of service implementation.

TRAUMA PHYSIOTHERAPY – A STEP IN THE RIGHT DIRECTION

Webb, M.

Allied Health, The Alfred Hospital, Melbourne, Victoria, Australia

Trauma is the leading cause of lost years of life and productivity in young adults and numerous studies including meta-analysis have confirmed a significant reduction in mortality when care is provided at a Level 1 Trauma Centre. It is estimated that for every trauma fatality, there are between three and four survivors who are permanently impaired and so interventions, therapies, and models of care that selectively improve the quality of life in survivors could be as valuable as those that decrease mortality.

The profile and care of the trauma patient is evolving. An increase in elderly trauma, changes in patient assessment, imaging capabilities, pre-hospital processes, management systems, human resources, and infrastructure are all leading to improved care for the injured patient. However, alongside this is increasing pressure from organisations to maintain capacity by reducing length of stay, while still maintaining standards and consistency of care and improving patient outcomes.

From acute inpatient phases through to community reintegration, physiotherapists work to improve physical function and quality of life post injury. They possess a diverse range of skills and knowledge across all physiologic systems, perfectly placed to address the multi-faceted sequalae of traumatic injuries. With complex injuries, increases in elderly presentations, multi system morbidity, and recovery needs, trauma provides the perfect environment for physiotherapists to demonstrate their expertise, skill, and utility. This presentation will explore how the changes in trauma care have driven the development of a clinical sub specialty for physiotherapy expertise and how we are uniquely positioned to address the diverse needs and challenges of the injured patient.

RECOGNISING NEURODIVERSITY

Breen, T.

Consultant Clinical Psychologist, Hamilton, New Zealand

Have you ever had the feeling that you just haven't "clicked" with a client? That despite your best efforts, you didn't understand each other? Or that regardless of the care you took, their experience of physiotherapy was painful and unpleasant? If you've answered yes to any of these questions, you've probably worked with a neurodiverse person. In this presentation, Dr Tanya Breen will define neurodiversity, describe two common neurodiversities (autism and ADHD), and show how recognising and accommodating neurodiversity will help you become a more effective practitioner.

SHOULDERING THE BURDEN: 10 YEARS OF ORTHOPAEDIC SHOULDER TRIAGE IN CANTERBURY

Cadogan, A., & Malone, A.

Orthopaedic Outpatient Department, Burwood Hospital, Christchurch, New Zealand

Musculoskeletal conditions present a significant and growing burden worldwide, often resulting in prolonged waiting times for orthopaedic assessment and care. To address this challenge, physiotherapists with advanced training are playing an increasing role in orthopaedic triage and management, both in New Zealand and abroad. This presentation will overview the varied roles for physiotherapists in the orthopaedic setting, and present in more detail the innovative approach taken in Christchurch to establish a physiotherapy-led shoulder triage role in 2014, which has now been running for 10 years.

The structure of the physio-led triage service within the orthopaedic service will be explored, highlighting its role in managing referrals, guiding patients towards appropriate treatment pathways and freeing up surgeon clinic time. Insights into the Non-Surgical Shoulder Service will be provided, including access, clinical governance, outcomes, and succession planning considerations.

Central to the success of these initiatives has been the development of clear role descriptions and competency frameworks for physiotherapists in orthopaedic triage roles. This presentation will overview these and other existing frameworks, including the Entrustable Professional Activities framework developed in collaboration with other physiotherapists working in orthopaedic departments in triage roles.

Through a combination of collaboration with orthopaedic specialists, innovative service structures, and evolving competency frameworks, advanced physiotherapists are driving positive change in musculoskeletal care delivery. This presentation will provide insights into the transformative potential of physiotherapist-led initiatives in improving access to non-surgical treatment for people with non-ACC musculoskeletal conditions, thereby contributing to enhanced orthopaedic access and care delivery models in New Zealand.

EXPLORING A PACIFIC WORLDVIEW THROUGH "TIME"

Areli, E.

Centre for Health, Activity and Rehabilitation Research, School of Physiotherapy, University of Otago, Dunedin, New Zealand

Embedded within the Physiotherapy Standards Framework are standards and principles directed at ensuring physiotherapists are culturally safe/competent. The importance of recognising and respecting culture, to treat accordingly, guarantee that the principles of the physiotherapy code of ethics and professional conduct are not undermined.

As a person with Pacific origins, and a physiotherapist, there are commonalities and similarities that are shared between traditional Pacific values and the principles of our profession. However, does that then mean that an in-depth understanding of Pacific values for me correlates directly with an in-depth understanding of the principles of the code of ethics? Is the relationship then between value and principle reciprocal for every Pacific person?

Culture in clinical spaces is something that we work towards identifying, so that we can find some commonality, some similarity between us and patients. Akin to the point of Pacific value and physiotherapy principle, we may share comparable traits, beliefs, and values with our patients but fundamentally very different "truths" and "propositions". As physiotherapists working with an increasingly diverse population, the onus is put on us to be more culturally respectful, more culturally safe, and more accountable. We can see the significance of this when it is expected that we "practise with due care and respect for a patient's culture, needs, values, worldviews and beliefs, including Te Ao Māori" (Code of Ethics and Professional Conduct).

How do you "practise with due care and respect" for a patient's worldview that is inherently different from your own? Through a better understanding of one's worldview. So, join me on a journey as we navigate through an Indigenous space and explore the concept of time from an Indigenous lens. From a Pacific perspective, we will see contrasting ideologies with Westernised views regarding time and why it is important for clinical practice.

WHY SHOULD I GIVE A HELL ABOUT PELVIC HEALTH?

Davidson, M.

Pelvic Health Training, Kinloch, Waikato, New Zealand

No one talks about pelvic health – they feel it's not relevant to them, it shouldn't be talked about in public, and it's only women who have had babies and now hitting menopause that have issues. Physiotherapists think "none of my patients want me to talk about it, it's not going to affect my treatment of them, so I don't need to worry about it". YOU COULDN'T BE MORE WRONG.

Pelvic health effects your manly rugby players (hello groin injuries), your middle aged blokes who can't get it up as often as they would like to (hello initial sign of cardiovascular issues), your young, fit, high-impact sports player (hello bladder and bowel leakage), your diabetic or mental health folks who you want to get moving (hello not doing exercise because things are falling out the bottom holes), and those people of all ages who would like to have some rumpy pumpy fun the bedroom but can't (hello pain).

Instead of ignoring this part of being a human, how about you take your head out of the sand, take a concrete pill, and step up to the next level of care. It won't be boring, you might learn something, and you might even have some fun. It's time for change – let's remove the taboo together and navigate physiotherapy into the 21st century.

HE KAWA WHAKARURUHAU Ā MATATAU MĀORI: MĀORI CULTURAL SAFETY AND COMPETENCE STANDARD

Davis, M.

Te Poari Tiaki Tinana o Aotearoa – Physiotherapy Board of New Zealand, Wellington, New Zealand

He kawa whakaruruhau ā matatau Māori: Māori cultural safety and competence standard places particular emphasis on tangata whenua (Māori) and our unique Treaty relationship. Māori culturally competent physiotherapists contribute to improved and equitable outcomes for ngā kiritaki hauora and all those working in the health sector.

This will be an interactive session, acknowledging that there may be challenges, and exploring how we can reflect and learn from these challenges. The intention is to have a safe space for open dialogue and to build confidence when working with ngā kiritaki haurora.

NAVIGATING NEURO PLASTIC PRINCIPLES

Davy, G.

MS Get a Head Start, Sydney, Australia

The power of "exercise as medicine" is well known by physiotherapists. There is increasing evidence that suggests that exercise enhances neuroplasticity. However, in neurological rehabilitation ensuring that the principles of neuroplasticity are being met alongside the delivery of a client-centred programme can be overwhelming. This presentation is aimed at providing clinicians with practical strategies to drive neuroplastic change and enhance patient outcomes. It encourages clinicians to reflect on their current neurorehabilitation delivery and where there may be opportunities to implement new strategies straight away.

This talk will use Multiple Sclerosis as an example to highlight the need for increasing rehabilitation access at diagnosis. It discusses the latest evidence-based exercise guidelines and what therapists need to know to be promoting a gold standard level in New Zealand, as well as illustrating strategies to optimise neurorehabilitation.

INSIGHTS AND SUPPORT FOR PUBLISHING WITH THE NZJP

[1,2]Ellis, R., [1,3]Perry M, & [1,2]Shaikh, N.

[1]Editorial Committee, New Zealand Journal of Physiotherapy; [1]Clinical Sciences, Auckland University of Technology, Auckland; [3]Centre for Health, Activity and Rehabilitation Research, School of Physiotherapy, University of Otago, Wellington, New Zealand

The *New Zealand Journal of Physiotherapy* (NZJP) is the official academic journal of Physiotherapy New Zealand. Its Honorary Editorial Committee is formed by a group of experienced physiotherapists who work clinically and/or in research and education. These committee members ensure the journal meets high publishing standards in line with other international academic journals, with the journal currently listed on SCOPUS. Published papers present contemporary research related to the science and practice of physiotherapy relevant to physiotherapists working within and outside of New Zealand.

This presentation aims to connect with clinicians, and emerging or experienced researchers who are considering submitting a manuscript to the journal for publication. We will showcase our new online platform (https://nzjp.org.nz/nzjp), discuss how dissemination of knowledge can contribute to advancing physiotherapy careers (e.g., advanced and specialist scope of practice), and provide an overview of key considerations (and tips) regarding content the editorial committee look for when evaluating an article. We welcome anyone with an interest in advancing physiotherapy knowledge and research in Aotearoa New Zealand, including those who would like to get involved as a reviewer.

THE EXHAUSTING, THE BREATHTAKING, AND THE DIZZYING

George, C.

The Lung Mechanic, Christchurch, New Zealand

The last 4 years have led me on a journey of discovery and understanding as well as some good old scrambling to try and keep up with research in the space of ongoing symptoms post-COVID-19. COVID-19 may now be considered “not an issue” and fading into the background but for many, the ongoing effects are devastating and still very much current. Individuals are still being gaslit despite good evidence to prove causes for ongoing post-viral fatigue. This fatigue is still being approached inappropriately by many and potentially causing further harm to them. Quick fixes are being peddled to the desperate. Breathlessness is mainly due to breathing pattern dysfunction but as to why this is so high post-COVID we still don’t know. However, it can be helped, and this is transformative for many. Dysautonomia is more common than ever, and physiotherapy can really help! It is part of the first line of management, before medications.

Thirty minutes cannot do justice to this topic but there are key points from research and my experience I would love to share to ensure you can help your patients, no matter the setting. Learn to be curious, ask the right questions, and set these people up for a journey of empowerment and management of their symptoms, enabling them to get back on track to live their lives as best they can. I would like to acknowledge the amazing work the cardiorespiratory SIG has done in the long COVID space.

A SPACE TO TALANOA AND SHARE A PACIFIC PERSPECTIVE ON PHYSIOTHERAPY MATTERS

Gibson, R. J.

Chair, Pasifika Physiotherapy Association, New Zealand

An interactive session to build our confidence in working in a culturally responsive way with Pacific people. Gain and share knowledge on how connections can be made and lost. Active engagement required!

MAKING YOUR PHYSIO PRACTICE ACCESSIBLE FOR GENDER DIVERSITY

Shields, J.

Professional Association for Transgender Health Aotearoa; Qtopia, Christchurch, New Zealand

Aotearoa's trans and non-binary communities face additional barriers to accessing healthcare, and have additional physical and mental health needs that often aren't equitably met by the healthcare system. In this workshop, learn about these barriers to accessing care, what they might mean for physiotherapy, and ways we can reduce those barriers to care and contribute to trans and non-binary people in Aotearoa living excellent lives. This session will briefly cover background and context, touch on language and terminology, and look at practical tools and tips we can put into practice to improve the quality of the lives our clients live.

SPORTS AND CONCUSSIONS: THE ACC APPROACH TO CONCUSSION AND HOW PHYSIOTHERAPY CAN GET INVOLVED

Westhead, S.

Accident Compensation Corporation, New Zealand

Concussion is a serious injury. Each year in Aotearoa New Zealand, over 7000 concussions occur while participating in sport. Due to the lack of a consistent, readily available resource for treatment providers, whānau, and patients, the National Concussion Guidelines have been formed to address the gap in treatment provision and active management of concussion. Through this work, we know that if concussion is missed or not managed, people can experience long-term negative effects, including prolonged time away from school, work and sport, poor mental health, decreased quality of life, ongoing symptoms, and loss of independence.

In this presentation we will discuss:

- how the guideline was developed and why
- the 21-day stand down and medical clearance
- small but significant changes since the guidelines' launch
- practical examples of how the guidelines can be applied in a clinical setting.

We will finish off by looking at what ACC is currently testing in the primary care space and the outcomes from our Concussion Services' proof of concept.

WORKSHOP ABSTRACTS

TARGETING PAEDIATRIC MUSCULOSKELETAL PHYSIOTHERAPY: GETTING IT RIGHT FOR EVERY CHILD

[1]O'Hara, A., [2]Radford, E., & [3]Meys, A.

[1]Active Plus, New Plymouth; [2]Reach Rehabilitation, Tauranga; [3]Nuture Physiotherapy, Tauranga, New Zealand

As musculoskeletal physiotherapists, our approach to assessing and treating children differs significantly from that of adults. Approximately 19% of New Zealand's population falls within the 0–14 years age group, emphasising the need for physiotherapists to understand children's cognitive, physical, psychological, and social changes. Supporting physiotherapists in assessing and managing musculoskeletal conditions in children is crucial for achieving optimal outcomes, client and whānau satisfaction, identifying red flags, limiting chronicity trajectories, and avoiding pathologising normal development.

A comprehensive paediatric musculoskeletal workshop is proposed for the Physiotherapy New Zealand Conference 2024 to address these challenges. This workshop, supported by a musculoskeletal paediatric working group, aims to equip physiotherapists with the necessary skills and knowledge for working effectively with children, including:

- outlining key differences in musculoskeletal examination in children
- normal and abnormal musculoskeletal development
- paediatric musculoskeletal anatomy 101
- youth sports injuries: what are we missing?
- common musculoskeletal conditions in children
- creating a child-friendly clinical environment
- identifying red flags and referral requirements
- whānau-centred care, care and working with intermediaries
- incorporating play into rehabilitation
- consent processes
- PGALs musculoskeletal screening and assessment confidence.

The workshop aims to enhance physiotherapists' skills and promote practical assessment and management of musculoskeletal paediatric conditions. Understanding children's anatomical considerations and growth patterns is crucial for effective diagnosis, treatment, and rehabilitation. Incorporating play and ensuring a child-friendly clinic environment is not just a bonus but an essential part of effective assessment and treatment.

This workshop will provide physiotherapists with diverse skills and knowledge and offer ongoing support, access to resources, and educational opportunities when working with children. By attending, they can ensure they can provide the best possible care to their young patients.

NEURODIVERSITY AFFIRMING PHYSIOTHERAPY

Breen, T.

Consultant Clinical Psychologist, Hamilton, New Zealand

Although they try to do their best, many health professionals are challenged when working with neurodiverse clients. They struggle to establish rapport, understand their clients, be understood, and achieve therapeutic goals. In this workshop, Dr Tanya Breen will identify neurodiversity-affirming strategies that will help overcome these problems. By combining Tanya’s psychological knowledge with your physiotherapy expertise, you’ll leave the session with practical strategies and easy-to-implement accommodations that will prepare you for more positive outcomes when you next encounter a neurodiverse client.

PEER MENTORING WORKSHOP

[1]Potter, M., & [2]Cadogan, A.

[1]TELL Centre, Nedlands, Western Australia; [2]Physio Academy, Christchurch, New Zealand

Dr Margaret Potter and Dr Angela Cadogan will run a dynamic and interactive workshop designed for physiotherapists who are looking to improve their mentoring skills. They will cover essential insights and practical tools to help you guide the next generation of physiotherapists. Angela and Margaret will also share the results of their recent mentoring research study, highlighting key findings and implications for workplace mentoring.

The key topics include:

- definition of mentoring
- the role of a mentor
- the difference between mentoring and clinical supervision
- key mentoring skills
- new graduate experiences of mentoring
- mentoring challenges
- question and answer session.

This workshop is an excellent opportunity for experienced physiotherapists to enhance their mentoring capabilities and make a meaningful impact on the future of the profession.

FUNCTIONAL NEUROLOGICAL DISORDER (FND) AND PHYSIOTHERAPY – SUCCESS, RELAPSES AND PITFALLS

Stone, J.

University of Edinburgh, United Kingdom

In this talk, I will discuss where we’ve been, where we are, and where we are going with clinical and research aspects of functional neurological disorder (FND). I will do so with particular relevance to physiotherapy.

How things were. FND was previously Conversion Disorder in DSM-IV. It was a diagnosis of exclusion that couldn’t be made unless there was a recent stressful event. Neurologists who generally made the diagnosis were typically disinterested or ambivalent about whether FND was similar to feigned illness. The treatment was considered purely psychological.

How things are. FND is now firmly a diagnosis of inclusion with positive signs like Hoover's sign, the tremor entrainment test, and typical features of seizures. Entities like Persistent Postural Perceptual Dizziness and Functional Cognitive Disorder have pushed the boundaries of how we define FND. Positive diagnosis also allows us to approach communication with the patient in the same way as any other condition and has helped us recognise a high frequency of FND comorbidity in patients with other neurological conditions. FND is a disorder that challenges dualistic ideas about the brain and mind. Studies of the neural underpinnings of the disorder don’t negate the importance of a psychological perspective, but do help rebalance it as a multidisciplinary condition, and not just the domain of psychiatry. Predictive processing models are especially promising. I will describe how the evidence base for physiotherapy, occupational therapy, psychological, and other therapies has emerged from this new way of thinking about the disorder.

Where things are going. The FND Society (fndsociety.org) is a new international society with around 1000 members and a meeting in Verona 2024 that highlights new vigour in the field. We are discovering new things about comorbidity, especially with Autism/ADHD and joint hypermobility as well as developing novel approaches to treatment, especially for patients where treatment has failed. Data from the largest trial of physio, Physio4FND, should be available for presentation. The FND field has been particularly successful at working with patient-led organisations such as fndhope.org and fndaction.org.uk and I think future success lies in strengthening these collaborations.

DATA PROVEN TRAUMA REHABILITATION

[1]Webb, M., & [2]Quick, C.

[1]Trauma Allied Health Team Leader, The Alfred Hospital, Melbourne, Victoria, Australia; [2]Clinical Lead Trauma Rehabilitation, Te Tāhū Hauora Health Quality and Safety Commission, New Zealand

Rehabilitation now forms a key component of trauma systems and pathways, yet its implementation remains fragmented and lacks the standardisation of other aspects of trauma care. Rehabilitation can be delivered in various frameworks and the data supporting rehabilitation interventions and services in trauma care remains scarce. In this workshop different approaches to building the evidence base and quality improvement opportunities for trauma rehabilitation will be presented. It includes data and outcomes from acute, post discharge, and broader system-wide phases of care.

PODIUM SPEAKER ABSTRACTS

THE PHYSIOTHERAPY CONUNDRUM FOR NON-AMBULANT CHILDREN WITH CEREBRAL PALSY AND INTELLECTUAL DISABILITY: AN INTEGRATIVE REVIEW

[1]Adams, K. L., [2]Blamires, J., & [3]Hill, J.

[1]Faculty of Health and Environment Sciences, Auckland University of Technology; [2]Child and Youth Health Research Centre, Auckland University of Technology; [3]Active Living and Rehabilitation: Aotearoa New Zealand, Auckland University of Technology, Auckland, New Zealand

Background: Physiotherapists in Aotearoa have a responsibility to base interventions on best available evidence. Despite many systematic reviews on cerebral palsy (CP) reporting "best evidence" for physiotherapy interventions, there is a paucity of evidence focused on non-ambulant children with CP combined with intellectual disability (NACCP-ID). This is mainly due to the heterogeneity of the population, making research challenging, and the hierarchy of evidence favours research suitable for ambulant children with the intellectual capacity to participate in tasks.

Purpose: To identify and provide a comprehensive synthesis of physiotherapy interventions for NACCP-ID using an integrative review of the literature.

Methods: An integrative review was conducted between March and April 2023 using CINAHL, Medline, Scopus, PEDRO, Google Scholar, and Tu Whera databases. Articles were appraised using the Mixed Methods Appraisal Tool. Conventional content analysis ensured results were acceptable for both the primarily positivist physiotherapy profession and the interpretive nature of disability in which these children are situated.

Results: Twenty-four studies on physiotherapy interventions for school-aged NACCP-ID were reviewed. Six intervention types were identified: functional exercise, gaming, power wheelchair training, sleep systems, static standing frames, and dynamic standing frames. The outcomes and considerations of interventions were discussed within the Te Whare Tapa Whā model.

Conclusion: The complexity of NACCP-ID is the dominant finding that affects researchers' ability to conduct studies with this population. This, in turn, limits the value placed on the available research and provides a limited scope of interventions for physiotherapists to evaluate within evidence-based practice (EBP).

Impact: For children with complex needs, such as NACCP-ID, the outcome of interventions is the sum of all the parts, not a series of predictable reactions with reliable outcomes, making EBP challenging for physiotherapists. Research must pivot to embrace the population's heterogeneity and practice requires a more holistic framework of EBP to encompass the complexity.

EFFECT OF MANUAL THERAPY ON GAIT BIOMECHANICS IN PEOPLE WITH KNEE OSTEOARTHRITIS – A PROTOCOL

[1]Alam, S., [1]Hargest, C., [2]Ribeiro, D.C., [1]Mani, R., & [1]Chapple, C.

[1]Centre for Health, Activity and Rehabilitation Research, School of Physiotherapy, University of Otago, Dunedin, New Zealand; [2]Curtin School of Allied Health, Curtin University, Perth, Australia

Background: Knee osteoarthritis (OA) is associated with changes in walking biomechanics such as altered excursion or change in joint load. Manual therapy (MT) may modulate pain via the enhancement of descending pain mechanisms that could influence neuromuscular activity and subsequently lead to changes in the mechanical behaviour of the joint such as modification of joint load. There is limited research, and an opportunity exists to further explore whether MT can influence biomechanics during walking.

Objective: The primary aim of this study is to explore whether MT intervention influences the biomechanical outcomes of gait in people with knee OA. The secondary aim is to explore the relationship between biomechanical outcomes of gait and clinical outcomes (pain and function), following MT intervention.

Methods: Prospective registration no. ACTRN12624000157572p. Study design: single-arm pre-test-post-test design. The participants will be included as per defined inclusion and exclusion criteria. Primary outcome: Peak knee adduction moment (KAM) measured by biomechanical gait analysis. Secondary outcomes: knee range of motion, pain while walking, fear and avoidance, recommended core set of patient-reported outcomes, and 2° biomechanical outcome measures of gait. Time-points: Baseline I, baseline II at 4-week, post-intervention at 8-week, and follow-up at 6-month. Knee-focused tailored MT will be provided with the frequency of 2 sessions/week x 45–60 mins x 3 consecutive weeks.

Results: We will report descriptive statistics of each outcome measure. To evaluate our 1° aim, we will use repeated measures ANOVA and a Tukey HSD post hoc test. We will perform repeated measure correlation tests to assess our 2° aim.

Conclusion: It is an exploratory study that will provide preliminary evidence on whether MT could influence biomechanical outcomes of gait.

Implications: This study will advance the knowledge of MT mechanisms. It may provide further support for the role of MT in the management of people with knee OA.

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OUTCOMES AFTER TOTAL KNEE JOINT REPLACEMENT WITH OR WITHOUT SUPERVISED GROUP PHYSIOTHERAPY

[1]Bastkjaer, S., [2]Paterson, G., [3,4]Rice, D., & [3]McNair, P.

[1]Physiotherapy Department, Health New Zealand – Te Whata Ora Waitematā; [2]Physiotherapy Department, Health New Zealand – Te Whata Ora Te Toka Tumai Auckland; [3]School of Clinical Sciences, Faculty of Health and Environmental Sciences, Auckland University of Technology, Auckland; [4]Waitemāta Pain Services, Department of Anaesthesia and Perioperative Medicine, Health New Zealand – Te Whata Ora Waitematā, New Zealand

Background: Typically, all patients who have a total knee joint replacement (TKJR) at Te Whatu Ora Waitematā are referred to physiotherapy for a period of in-person postoperative rehabilitation including group-based knee class. During the COVID-19 pandemic, this wasn't possible, and a cohort of patients did not receive any formal, supervised postoperative rehabilitation (no knee class).

Purpose: To assess pain, disability, and patient satisfaction ≥ 6 months after surgery in the no knee class cohort compared to a historical cohort of patients who had attended knee classes and had the same outcome measures available.

Methods: Propensity score matching was used to select patients from the historical TKJR cohort that were most similar to patients in the no knee class cohort in terms of age, sex, BMI, and number of additional pain sites. Non-parametric ANCOVAs were used to compare WOMAC pain (0–100), WOMAC disability (0–100), and patient satisfaction (1 = very dissatisfied to 5 = very satisfied), between cohorts, with time since surgery (in months) as a covariate.

Results: Thirty-six patients (no knee pain class) were matched 1-to-1 (n = 36) from a pool of 74 patients from the historical cohort who completed a minimum of two supervised group rehabilitation sessions (*Mdn* 6, range 2–10). All matching variables had standardised mean differences of < 0.1 and p-values > 0.05, suggesting successful balancing of potential confounding variables between groups. There were no significant differences in WOMAC pain, WOMAC disability, or patient satisfaction between the two groups ≥ 6 months after surgery (all $p \geq 0.851$).

Conclusion: These findings provide preliminary evidence that failing to attend supervised in-hospital group rehabilitation classes did not adversely affect long-term outcomes after TKJR.

Implications: Existing (p)rehabilitation resources may be better targeted to patients at high risk of poor outcome or who are not following expected recovery trajectories.

* * *

EXPLORING KAUMĀTUA PERSPECTIVES OF LIVING A HEALTHY LIFESTYLE FOR OPTIMISED BRAIN HEALTH

Beet, B., Dudley, M., Ashby, L., Pou, K., & Olsen, S.

Auckland University of Technology, Auckland, New Zealand

Background: Longstanding inequities in the Aotearoa New Zealand healthcare system have contributed to a higher prevalence of risk factors for mate wareware (dementia) among Māori. There is a need for improved health literacy for Māori around healthy lifestyle activities that can reduce this risk and optimise brain health. In addition, physiotherapists need to consider culturally appropriate ways of delivering education to inspire healthy lifestyle changes and ensure equitable practice.

Purpose: This research explored the perspectives of Māori kaumātua (Māori elders) regarding heathy lifestyle activities and how these could be encouraged within a digital health literacy application called the Mate Wareware app.

Methods: The study used a qualitative, Māori-centred approach, underpinned by kaupapa Māori principles. The participants were 11 Māori kaumātua (*M* age 70 years) living in rural and urban areas of Northland. The kaumātua attended a wānanga and shared their experiences and views during small focus-group discussions. The audio data collected were thematically analysed.

Results: Two overarching themes were identified: (1) "Actively connecting to wairua" emphasised wairua (spirit, soul) as the foundation of a healthy lifestyle and a key supporting feature of hauora (health and wellbeing); (2) "Mahi through the generations" highlighted the central and dynamic role of mahi (work) in the lives of Māori, particularly mahi through life roles, kai (food), and whānau (family) and community activities.

Conclusion: The findings emphasised the importance of returning to ancestral and cultural activities for Māori to live a healthy lifestyle. Kaumātua suggested a range of features to be implemented within the Mate Wareware app to support wairua and draw Māori back to mahi that encourages healthy lifestyle activities.

Implications: The findings provide a foundation for healthy lifestyle advice directed towards the needs of Māori and encourage physiotherapists to reflect on holistic and whānau-centred activities that could be encouraged with Māori patients and whānau.

UNDERSTANDING FEMALE FOOTBALL (SOCCER) PLAYERS' PERCEPTION OF HEADING THE BALL, CONCUSSION KNOWLEDGE, AND ATTITUDES

[1,2]Blyth, R., [1]Sole, G., [1]Galea, O., [3]Bussey, M., & [4,5,6]Ahmed, O.

[1]Centre for Health, Activity and Rehabilitation Research, School of Physiotherapy, University of Otago, Dunedin; [2]Axis Sports Medicine Specialists, Auckland; [3]School of Physical Education Sport and Exercise Sciences, University of Otago, Dunedin, New Zealand; [4]University Hospitals Dorset NHS Foundation Trust, Poole, United Kingdom; [5]School of Sport, Health and Exercise Science, University of Portsmouth, Portsmouth, United Kingdom; [6]The Football Association, Burton-upon-Trent, United Kingdom

Background: Football is the only sport where players intentionally use their head to shoot, redirect, or pass the ball. This has sparked debate in the literature regarding the safety and potential long-term effects on brain health from cumulative ball heading. Yet there is limited understanding of the players' perspectives on health and heading.

Purpose: To explore female football players' perceptions of heading the ball and their knowledge and attitudes towards concussion.

Methods: This qualitative study used semi-structured focus groups and individual interviews. Reflexive thematic analysis was used for analysis and theme development.

Results: Seventeen players (aged 18–40 years, minimum 5 years' playing experience) participated in six focus groups and one individual interview. Thirteen of these had incurred at least one concussion. Three themes were developed: (1) The battle of "risk vs reward": views around the importance of heading for the game but also the perceived injury risks; (2) "Spare the brain" vs "train the skill": players often avoided heading the ball in training rather than practising the skill; (3) Changes in perspectives following concussion: players reported being more apprehensive to head the ball post-concussion, preferring to use other body parts (e.g., the chest) and coaches/family influenced attitudes towards heading and concussion.

Conclusion: In contrast with other injury prevention strategies and skills, the task of heading is often avoided in training rather than practised as a skill, limiting the number of head impacts to "reduce injury risk". Various factors influence perspectives of heading, particularly following concussion, with some players constantly having to choose whether to avoid heading at the cost of decreased performance.

Implications: The outcome of this study highlights many players' apprehension to head the ball in training/repetitively and how concussion changes their views on heading. These player perspectives may help to inform return to play protocols and heading guidelines.

EQUITY OF NEW ZEALAND PHYSIOTHERAPY WORKFORCE DISTRIBUTION: A SPATIAL ANALYSIS OF ACCESSIBILITY

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Background: Disparities in care access and outcomes for health conditions where physiotherapy is poised to play a major role (such as musculoskeletal diseases, cardiovascular illnesses, and neurological disorders) excessively burden rural populations, Māori and Pacific peoples, and those with higher socioeconomic deprivation. However, the distribution of the physiotherapy workforce relative to these populations is not known.

Purpose: To evaluate the accessibility of the physiotherapy workforce in Aotearoa New Zealand relative to Māori, Pacific, rural, and high socioeconomic deprivation populations.

Methods: This cross-sectional population-based study geocoded physiotherapy workforce data for 5582 physiotherapists (92% of the 6038 registered physiotherapists at March 2022) and integrated these with 2018 NZ Census data to generate "accessibility scores" for each Statistical Area 2 (SA2) using the distance-based 3-step floating catchment area method. Demographic characteristics of rurality, Māori ethnicity, Pacific ethnicity, and socioeconomic deprivation were categorised, cross tabulated with accessibility scores, and thematically mapped using geospatial software.

Results: The mean practitioner: population ratio was 11.88 per 10,000. Wānaka/Queenstown, inland central Canterbury, and Tauranga were the areas of highest accessibility (up to 26/10,000). North Island areas in the Mid-central, west, and northern Northland, and the East Coast were the major areas of low accessibility (< 0.94 to 9.06 per 10,000) and higher proportion rural, Māori, Pacific, or high deprivation.

Conclusion: New Zealand has an above-average physiotherapy-to-population ratio compared with other OECD countries; however, this workforce is maldistributed. This study identified specific areas of physiotherapy workforce shortage, and potential over supply.

Implications: Available levers should be used to mobilise the physiotherapy workforce to meet population health needs more equitably. A minimum workforce data set, linked to location of care delivery is necessary to gain more than a snapshot and to include important aspatial variables such as type of care, and affordability.

EMPOWERING MĀORI SUCCESS IN PHYSIOTHERAPY EDUCATION: RECOMMENDATIONS TO STRENGTHEN PRAXIS FOR ASPIRATIONAL OUTCOMES

[1]Caldwell, J., [2]Came, H., [1]Smythe, L., [1]Reid, D., [1]Heke, D., [1]Wilson Uluinayau, T., [1]Ihaka, B., & [1]Wilson, B.

[1]Auckland University of Technology, Auckland; [2]Victoria University of Wellington, Wellington, New Zealand

Background: Health inequity for Māori is a longstanding issue in Aotearoa. The low numbers of Māori physiotherapists pose a challenge for achieving health equity.

Purpose: This research aimed to explore strategies to empower Māori student success in physiotherapy education. Improving Māori undergraduate physiotherapy students' retention and success rates may enhance the Māori physiotherapy workforce.

Methodology and methods: A Māori-centred approach utilising the principles of kaupapa Māori research and appreciative inquiry (a strength-based approach to organisational change) were adopted. One-to-one kōrero and hui were employed to understand the experiences of 15 Māori physiotherapy graduates (roopu rangahau). Through this process we sought to understand what supported Māori undergoing physiotherapy education to thrive, and co-design solutions to culturally transform physiotherapy education. A shared process of analysis was applied to the data.

Results: Five themes were generated that represent factors that empower Māori success in physiotherapy education. These were: the significance of whānau (extended family), connection to place, promoting cultural affirmation, incorporating cultural pedagogy, and the provision of aspirational opportunities.

Conclusion: Physiotherapy education requires significant cultural transformation to create an optimal environment that promotes Māori student retention and success. Relationality, grounded in the principle of whanaungatanga (a concept encompassing kinship and connectedness) is key to enhancing Māori students' sense of belonging in physiotherapy education and supporting their transition into the workforce. Incorporating Indigenous knowledges, perspectives, and values within physiotherapy education and creating educational and clinical spaces that foster Māori identity and encourage self-determination of Māori are critical to this outcome.

Implications: While specific to physiotherapy education, these research findings have broader implications for physiotherapy workplace environments, Physiotherapy New Zealand, and the Physiotherapy Board. During this presentation insights will be shared that may support the creation of culturally responsive educational and workplace spaces for Māori students and new graduates employed within the physiotherapy profession.

LEARNING FROM FAMILIES: DISABLED YOUTH AND THEIR FAMILIES' EXPERIENCES OF FAMILY-CENTRED CARE

[1]Carrington, L., [1]Hale, L., [2]Freeman, C., & [3]Perry, M.

[1]Centre of Health Activity and Rehabilitation Research (CHARR), School of Physiotherapy, University of Otago, Dunedin; [2]School of Architecture, Victoria University of Wellington Te Herenga Waka, Wellington; [3]CHARR, School of Physiotherapy, University of Otago, Wellington, New Zealand

Background: Young people living with a disability can experience barriers to societal participation and limited opportunities for play. Every child has the right to play, and play influences children's cognition, physical, mental, and social growth. To develop engaging interventions for young people with disabilities, physiotherapists require an understanding of what is meaningful and important to the young people and their families/whānau.

Purpose: To explore the experiences and perceptions of young people with disabilities and their families/whānau on family/whānau-centred care and play as a therapeutic intervention.

Methods: Qualitative semi-structured interviews with 23 caregivers and three children/adolescents with a disability aged ≤ 21 years, living across New Zealand. Data were interpreted using latent reflexive themes.

Results: Concepts of whānau identity, valued service/therapist attributes, and participatory outcomes were identified. Both challenges and positive experiences to family/whānau-centred care were dependent on family/whānau capacity and collaborative relationships. Experiences of play in therapy were connected to positive family/whānau perceptions of family/whānau-centred care and relationships.

Conclusion: The lives of young people with disabilities and their family/whānau are complex. To understand the family/whānau's capacity, therapists must form trusting relationships, share knowledge, and hold space to hear the families' voice. Capacity of both the family/whānau and the service influence the delivery and engagement with family/whānau-centred care. Families/whānau value the expertise of therapists to guide and scaffold fun interventions towards long-term participatory focused outcomes.

Implications: Physiotherapists can support young people with disabilities and their families/whānau through provision of scaffolded, play-focused therapies alongside delivery of timely information with consideration of family/whānau capacity. Incorporating optional play-based activities into everyday routines may provide an opportunity to support young people with disabilities in their home environment. Awareness of challenges to family/whānau-centred care may aid discussion between physiotherapists and families/whānau of young people with disabilities to facilitate the co-creation of meaningful play-based interventions.

REVIEWING PRE-EXTUBATION P0.1 VALUES IN A PAEDIATRIC ICU AND THEIR IMPACT ON POST-EXTUBATION RESPIRATORY OUTCOMES

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[1]Te Toka Tumai – Auckland City Hospital, Auckland, New Zealand; [2]Evelina Children's Hospital, London, UK

Background: Evidence surrounding extubation markers in a paediatric population is sparse. P0.1 is defined as the negative pressure measured 100 ms after the initiation of an inspiratory effort performed against a closed respiratory circuit and correlates with central respiratory drive and effort. A literature review surrounding its use in this population was completed, retrieving two papers, one of which was discarded due to age. The remaining paper, published in 2023 by Charernjiratragul et al., investigated indices to guide if respiratory support was required post-extubation (PE). The study found a P0.1 figure > 0.9 showed higher sensitivity for predicting respiratory support escalation PE.

Purpose: To determine if a relationship existed between pre-extubation P0.1 values and repository support post extubation, in the paediatric intensive care unit (PICU) population, at the Evelina Children's Hospital.

Methods: Data was collected over a 30-day period. Patients suitable for extubation were identified by the physiotherapy team. Three pre-extubation P0.1 measurements were collected before subsequent treatment, if required. At 48 hours post-extubation, notes were reviewed to identify the maximum respiratory support required.

Results: Twenty-seven patients met the inclusion criteria; however, one was unsuccessfully extubated, and their data was excluded. Eighteen patients in total required respiratory support within 48 hours PE; eight required high-flow oxygen. The median P0.1 value for these eight patients was 0.9. This was thus used as a threshold value, providing binary data to determine if a significant relationship existed. A chi-squared distribution test identified that a statistically significant relationship ($p = 0.0011$) existed between P0.1 > 0.9 and the subsequent need for high-flow oxygen PE.

Conclusion: These results reinforce the potential utility of P0.1 as a reliable marker for predicting respiratory support post-extubation in paediatric cases.

Implications: A proportion of our participants were extubated post cardiac surgery, which may differ from those in less specialised PICUs.

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NAVIGATING NEW TECHNOLOGIES IN PHYSICAL REHABILITATION: THE IMPACT OF VIRTUAL REALITY ON THE PATIENT–THERAPIST BOND

[1]Crowe, S., [1]Shahri, B., [1]Piumsomboon, T., [1]Hoermann, S., & [2]Waller, A.

[1]University of Canterbury, Christchurch, New Zealand; [2]University of Dundee, Dundee, United Kingdom

Background: Virtual reality (VR) holds promise in physical rehabilitation, yet concerns persist regarding its influence on the patient–therapist relationship, known as the therapeutic alliance. The therapeutic alliance, crucial for rehabilitative success, relies on patient–therapist agreement on tasks, goals, and interpersonal bonds.

Purpose: To understand the impact of immersive VR on patient–therapist dynamics in acquired brain injury rehabilitation, offering design insights for in-person rehabilitative VR systems. The key objectives were to uncover essential elements for rehabilitative VR systems in physiotherapy that foster therapeutic alliance, and to create applicable design guidelines.

Method: Observations were employed, coupled with semi-structured interviews. Patients were observed in a VR setting wearing a VR headset that obscured the therapist from their view, and in a traditional non-VR rehabilitation setting. Focus was placed on discerning shifts in patient–therapist interactions and alliance dynamics between settings. Discourse analysis techniques, including conversational analysis, were used to explore interaction patterns and challenges concerning the therapeutic alliance.

Results: Findings indicate shifts in patient–therapist interaction with VR introduction. Despite visual barriers, therapists maintained engagement through gestural and attempted eye contact. VR usage correlated with reduced informal conversation, increased shared laughter, and enhanced therapist verbal feedback. Findings highlighted the need for precisely controllable virtual environments to support the patient–therapist relationship in in-person rehabilitation, breaking down visual barriers impacting gestural cues and utilising the aspect of shared laughter.

Conclusion: This research underscores the importance of understanding VR's impact on patient–therapist relationships and interaction in acquired brain injury rehabilitation and physiotherapy more generally. Despite challenges, VR offers opportunities to strengthen patient–therapist bonds.

Implications: This research informs ways in which designers and physiotherapists can ensure seamless integration of VR, with a focus on leveraging VR design innovations that foster stronger patient relationships, ultimately facilitating improved rehabilitation outcomes in physiotherapy clinical practice.

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AOTEAROA PHYSIOTHERAPISTS' PERSPECTIVES OF POTENTIAL EXPANDED ROLES FOR SPORTS-RELATED CONCUSSION MANAGEMENT: A QUALITATIVE STUDY

[1]Dalton, M., [1]Galea, O., [1, 2]Blyth, R., [3]Quinn, D., [4]Reid, D., & [1]Sole, G.

[1]Centre for Health, Activity and Rehabilitation Research, School of Physiotherapy, University of Otago, Dunedin; [2]Axis Sports Medicine Specialists, Auckland; [3]Motus Back in Motion, Dunedin; [4]School of Physiotherapy, Auckland University of Technology, Auckland, New Zealand

Background: Early concussion diagnosis is critical for initiating rehabilitation, and delayed diagnosis can lead to delayed recovery. Physiotherapists are at the front-line of identifying potential concussions and ensuring that sportspeople are ready to return to training. Yet only medical doctors can diagnose and provide clearance for return-to-sports.

Purpose: To explore physiotherapists' perspectives of their scope of practice and current actual clinical practice within sports-related concussion diagnosis and return to sports.

Methods: We recruited 18 physiotherapists working in sports physiotherapy for this qualitative study, using semi-structured individual interviews and focus groups, and Interpretive Description.

Results: Three themes were derived: (i) Delayed access to concussion-trained medical doctors; (ii) Navigating concussion care in a strained healthcare system, and (iii) Proposed expanded role for physiotherapists. Delayed access to medical doctors often delayed formal concussion diagnosis, initiation of concussion care, or medical sports clearance. Yet participants were regularly identifying and managing concussions, feeling confident to do so. Participants working with high-performance athletes or in multidisciplinary teams suggested that concussion diagnosis and clearance for return-to-work or -play should remain the medical doctors' responsibilities. Yet participants working at community level suggested that, with relevant training and mentored experience, diagnosis, triaging, and clearance for sport could be within their scope of practice.

Conclusion: Participants suggested that current constraints about timely access to medical doctors impeded initiation of concussion care for many individuals. At high-performance sport level, medical doctor consultation appears to be considered critical. At community level, many participants were already providing interim diagnoses and clearance for return to sports, advising GPs thereof for formal coding or sign-off.

Implications: The scope of practice for physiotherapists for concussion diagnosis, triaging, and return to sports clearance should be reconsidered. Physiotherapists could decrease the burden of medical doctors yet improve efficient and effective initiation of concussion care in the community.

FROM PAPER TO E-REFERRALS: A REVIEW OF SYSTEM RE-DESIGN FOR THE PHYSIOTHERAPY SERVICE

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Background: All inpatient services as Christchurch Hospital traditionally faxed paper referrals when referring to Allied Health services, including to Physiotherapy. Due to Health New Zealand initiatives such as “axe the fax”, there was an opportunity to shift towards paper-lite methods, optimise data collection, and utilise existing systems.

Purpose: As a response to change, there was a need to coordinate a standardised method of referring to Allied Health services, taking into account service-specific needs, without compromising or changing other forms of referral processes.

Methods: The new system re-design integrated the use of electronic clinical notes for referrals and reflected a “closed-loop” system. Visibility of referrals to services were emphasised and a method of indicating the anticipated response time for assessment was subsequently developed.

Results: Data captured from the new system informs a PowerBI dashboard that provides operational insight to managers on the acute demands in the inpatient setting. Data over a 12-month period includes the time and inpatient location of referrals made, and the referral acknowledgement by the clinician. This includes the types of referrals made, the anticipated response time, and priority of referral.

Conclusion: This re-design system has enabled data capture and visibility – providing context of the current pressures and demands on the Physiotherapy and Allied Health services on the frontline. Patient care has been enhanced as referring services are more informed in clinical notes and decision makers have data to guide change.

Implications: The clinical implications lead to redefining what a referral is and decision making has been transferred back to clinicians to indicate how soon an assessment or intervention is needed, according to nationally agreed Care Capacity and Demand Management (CCDM) priority guidelines. This scope of work supports the current national initiatives Safe Staffing Healthy Workplace (SSHW), which is informed by the CCDM programme reporting processes.

UNDERSTANDING MUSCULOSKELETAL PHYSIOTHERAPY PRACTICE IN AOTEAROA: AN EXPLORATION OF MUSCULOSKELETAL PHYSIOTHERAPISTS' PERSPECTIVES OF PRACTICE

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Background: A contemporary musculoskeletal physiotherapy curriculum taught in Aotearoa must be responsive to the unique contexts of Aotearoa that shape healthcare and clinical practice. However, more needs to be formally known about what it means to be a musculoskeletal physiotherapist in Aotearoa, to influence physiotherapy education.

Purpose: Inquiry into contemporary perspectives and the physiotherapy landscape in Aotearoa is needed to inform the newest generations of physiotherapists and guide future curriculum development. We sought to understand what clinicians perceive as shaping musculoskeletal physiotherapy practice in Aotearoa.

Methods: Fifteen musculoskeletal physiotherapists practising across the country were purposely recruited and interviewed. We used a qualitative Interpretive Descriptive approach alongside a reflexive thematic analysis framework. TN and RE coded data, and the research team contributed to the theme structure

Results: Four themes were constructed. Theme 1, "Musculoskeletal physiotherapy is much more", described a narrow public view of musculoskeletal physiotherapy. In Theme 2, "Evidence versus (patient) expectations", participants shared tensions between patient expectations and best practice, alongside value being placed in the privilege of therapeutic touch. Theme 3, "Being conflicted", referred to professional conflicts shaped by bespoke Aotearoa conditions. Theme 4, "My navigator", explored the need for patient support to navigate the health system, alongside professional mentorship and career support.

Conclusion: The participants shared valuable insights that influenced their musculoskeletal physiotherapy practice alongside their views of contemporary education development in Aotearoa. Challenges identified by the participants centred around the perception of physiotherapy, balancing research evidence and professional expectation, maintaining professional identity, and the need for advocacy and mentoring.

Implications: Physiotherapy is a global profession, with similarities in practice internationally. However, Aotearoa is a unique country that shapes many aspects of our lives, including our professional identity. Future generations of musculoskeletal physiotherapists need to appreciate and embrace the unique cultural influences that shape their practice.

INTEGRATING PHYSIOTHERAPY INTO A PRIMARY CARE PRACTICE IMPROVES EQUITY

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Background: A 12-month pilot for physiotherapy in primary care ran at Te Nīkau Health Centre, Greymouth, in 2022/2023. The physiotherapist worked as an integrated member of the primary care team, as the first point of contact for patients with musculoskeletal conditions.

Purpose: The purpose of the pilot was to reduce wait times for musculoskeletal care and to free up other clinicians' time to enable better long-term condition management. These objectives were underpinned by an equity focus to improve access and outcomes for Māori.

Methods: Equity measures piloted included holding clinics at a Māori health provider and a rural satellite clinic. The primary care physiotherapist (PCP) worked to top of scope in an assessment, diagnosis, referral, and self-management role. Most patients who required rehabilitation were referred to another provider, but Māori and rural clinics could have rehabilitation with the PCP.

Results: Patients seen by the PCP had an average wait time of 5.1 days, compared to pre-pilot average wait of 9.8 days for musculoskeletal conditions. Staff reported they had more time for long-term condition management. The percentage of Māori seen with musculoskeletal conditions was 9% pre-pilot, with 14% of patients seen by the PCP identifying as Māori. A patient survey revealed that they were impressed with the prompt service and appreciated seeing a clinician with the best musculoskeletal knowledge and skills.

Conclusion: Integrating physiotherapy into primary care, in a first contact role for musculoskeletal conditions, can improve equity for Māori and rural patients and ensure that patients receive timely, high-quality care.

Implications: There is potential for this role to have a significant impact in primary care, and with flow-on effects to secondary care. The role can improve equity for Māori and rural patients; however, for the full impact to be realised, some legislation changes will be required.

EFFECT OF WEIGHT BEARING ON FUNCTIONAL OUTCOMES POST NON-SURGICALLY MANAGED ACHILLES TENDON RUPTURE

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Background: Achilles tendon rupture is a traumatic injury and ongoing deficits in plantar flexor endurance and strength are seen 12 months post injury. There is poor consensus regarding the optimal acute conservative management strategy to date.

Purpose: To assess the effects of immediate weight bearing vs delayed weight bearing standard care post Achilles tendon rupture on perceived function, Achilles tendon length, and plantar flexor muscle performance at 12 months post injury.

Methods: This study was a cross-sectional design assessing participants 12 months post conservatively managed Achilles tendon rupture in an immediate weight bearing (VACOped) group compared to a standard care group. Thirty-four participants were recruited (VACOped group, $n = 20$; Standard Care group, $n = 14$). Perceived function was measured using the Achilles Tendon Rupture Score (ATRS) and the Injury-Psychological Readiness to Return to Sport (I-PRRS). Functional outcomes were measured using the total heel raise work test, maximum voluntary contraction of the plantar flexors (MVC), single leg hop for distance and height, and a lateral continuous hop test. Achilles tendon length was measured using the resting angle method.

Results: There was no significant difference between groups for all outcome measures ($p > 0.05$). Across groups the mean score for the ATRS and I-PRRS was 76 and 42 respectively. A significant difference between limbs was seen in the total heel raise work test (33%), MVC (18%), hop for distance (12%), and hop for height (19%). Hanging angle was increased by a mean of 32% across groups.

Conclusion: The main findings of this study demonstrate that there are still ongoing deficits in self-perceived function, plantar flexor muscle performance, and tendon elongation across limbs post rupture, irrespective of initial weight bearing capacity.

Implications: These findings should provide patients and clinicians with confidence around loading the Achilles tendon early post rupture but raises questions regarding the expectations of recovery.

EXPLORING EXERTIONAL TESTING TO IMPROVE THE SENSITIVITY OF ASSESSMENT TOOLS FOR MTBI: A SYSTEMATIC REVIEW

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Background: Assessment of recovery from mild traumatic brain injury (mTBI, also known as concussion) is complex, and challenging. People returning to participate in sports after a mTBI have double the risk of a subsequent injury. This may suggest that they may have ongoing unidentified impairments. Exertional testing, where individuals are tested for mTBI impairments following physical exercise, has shown promise in the research setting through the identification of deficits that cannot be provoked under standard testing conditions performed at rest.

Purpose: To conduct a systematic literature review to determine if the effect of exertion on objective outcome measures differs in people with mTBI compared to healthy individuals.

Methods: A systematic search was carried out according to a pre-defined protocol (PROSPERO Registration CRD42023411681). Studies were eligible for inclusion if they: i) compared people aged 12–65 years with a recent history of mTBI with healthy controls, ii) investigated the effects of a single session of physical exertion, and iii) collected pre- and post-intervention measures of physiological or sensorimotor function.

Results: Descriptive analysis of 24 papers was completed. Meta-analysis was precluded due to the methodological variations and diverse outcome measures across the included papers. The literature demonstrated significant differences in the immediate effect of physical exertion on mTBI versus control participants in sensorimotor measures, including the King-Devick test, and physiological measures, including heart rate variability, autoregulation and haemodynamics, respiration, and perceived exertion.

Conclusion: The majority of the studies confirmed that post-exertion objective assessments can differ in mTBI compared with healthy, and these differences were less apparent at rest.

Implications: Exertional testing could therefore play a role in the assessment of recovery following mTBI. Physiotherapists have the skills and expertise to be an integral part of this process. The review findings will be used to inform the development of a return-to-play protocol that incorporates exertion.

STRENGTH, PERCEIVED FUNCTION AND PHYSICAL PERFORMANCE IN SURGICALLY STABILISED SHOULDERS FOLLOWING TRAUMATIC ANTERIOR SHOULDER DISLOCATIONS

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Background: Dynamic glenohumeral stability is influenced by muscle strength. Decreased dynamic stability at the shoulder may contribute to a decrease in sports performance post-surgery.

Purpose: To examine bilateral glenohumeral external and internal rotator muscle strength after anterior stabilisation surgery and investigate the relationships between strength deficits and function.

Methods: Twenty-five participants participated (aged 24 ± 6 years), 6–12 months post-surgery and cleared for return-to-sports. Bilateral maximal isometric internal and external rotator strength (iMVC) was examined using a Biodex dynamometer in sitting (arm in 90-degree abduction). Limb symmetry indices (LSI) were calculated for the iMVCs. The Shoulder Instability-Return-to-Sport Injury (SIRSI) was administered. Physical performance was assessed using the Shoulder Arm Return to Sports battery of tests (SARTS).

Results: Eighty percent of the participants had returned to sports. There were significant deficits ($p < 0.05$) for iMVC of external rotators between the affected ($M \pm SD = 16.3 \pm 5.5$ Nm) and unaffected shoulder ($M \pm SD = 21.3 \pm 7.0$ Nm, LSI = 78.5% ± 21.6). Similarly, a significant deficit was observed in internal rotators iMVC ($M \pm SD$ affected = 37.0 Nm v. unaffected: 43.0 Nm, LSI = 83.5% ± 15.3). Participants with higher internal rotator LSI had higher confidence in return to sports (SI-RSI; $r = 0.403$, $p < 0.05$, $r^2 = 0.162$). No significant associations were observed between iMVC and SARTS tests.

Conclusion: Participants had not met return-to-sports criteria for iMVC at a time of clearance for return to sports.

Implications: Isometric muscle strength recovery can take longer than 6 months after anterior stabilisation surgery. The SARTS tests assess different constructs (muscle power, endurance, control/coordination) and involve larger muscle groups, which may explain the lack of association between iMVC and the SARTS. The internal rotator LSI contributed a small proportion of change in self-confidence, accounting for 16% of the variance of the SIRSI.

UNDERSTANDING TASK “CHALLENGE” IN STROKE REHABILITATION: AN INTERDISCIPLINARY CONCEPT ANALYSIS

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Background: The significant and growing impact of stroke disability has prompted researchers and clinicians to re-think the core components of rehabilitation. While the concept of “task challenge” is often described as influencing individuals’ experiences and outcomes of stroke rehabilitation, it is poorly understood. Challenge holds various meanings, including overlap with descriptions of task difficulty, physiological intensity, cognitive load, and perceived effort, which can lead to suboptimal implementation of challenge in clinical practice.

Purpose: To explore how challenge is conceptualised in stroke rehabilitation from the perspectives of people with stroke, physiotherapists, occupational therapists, and speech-language therapists.

Methods: Principle-based concept analysis was used to explore challenge within the stroke rehabilitation literature. A systematic search and screening process was used to select literature with high informational value. Included papers were analysed to elicit understandings of the range of purposes, meanings, and uses of challenge, within and across rehabilitation perspectives.

Results: A total of 42 papers were included. Challenge appeared to be a multidimensional and dynamic concept, which was understood through three facets: nominal, functional, and perceived challenge. Nominal challenge was understood as the task difficulty based solely on characteristics of the task. Functional challenge was defined as an interaction between the task difficulty and the person’s ability. Perceived challenge emerged as the person’s subjective experience of challenge. In practice, functional and perceived challenge were predominantly used to create optimal challenge.

Conclusion: Challenge is an important concept that, when carefully optimised to the person’s ability and perception, may positively influence their engagement with and outcomes from stroke rehabilitation.

Implications: Challenge involves a multifaceted, multidimensional, and dynamic interaction between the task, the person’s ability, and their subjective experience. Therapists should consider both functional and perceived approaches to the operationalisation of optimal challenge with the person.

UNCOVERING CLINICAL COMPLEXITY: THE USE OF VIDEO-REFLEXIVE ETHNOGRAPHY AS A METHODOLOGY FOR EXPLORING PHYSIOTHERAPY PRACTICE

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Background: Physiotherapy involves a complex interplay of clinical and relational skills. The profession advocates for a person-centred approach, emphasising the importance of tailoring treatments to individual needs and circumstances, and actively involving patients in their own care. Traditional qualitative research methods provide insight into therapist and patient experiences of rehabilitation, but often lack a full and nuanced exploration of the complexities that underpin practice. Video-reflexive ethnography is a novel methodology that centres on participants’ “insider knowledge” to unpack the taken-for-granted assumptions, implicit interactions, and contextual dynamics that are integral to clinical practice.

Purpose: To explore the applicability and use of video-reflexive ethnography as a qualitative methodology for understanding physiotherapy practice from the perspective of physiotherapists and their patients.

Methods: We outline the purpose and principles of video-reflexive ethnography and discuss its relevance to physiotherapy. We describe three phases of data collection: a) observing a usual rehabilitation session between therapist and patient, b) videoing a usual rehabilitation session, and c) reflexive interviewing where the therapist and patient (individually or jointly) watch video clips of their session to support the exploration of their thoughts and experiences in that moment. We discuss how this methodology can be used through an iterative, collaborative, and robust qualitative process.

Results: Drawing on our own experiences, we present an example of video-reflexive ethnography that explored therapist and patient understandings, uses, and experiences of “task challenge” in stroke rehabilitation.

Conclusion: Video-reflexive ethnography offers a valuable approach to gaining insider knowledge of the complexities of physiotherapy practice, facilitating a deeper exploration of concepts and contexts that may otherwise be overlooked, but are integral to understanding and transforming physiotherapy education, research, and clinical practice.

Implications: The use of video-reflexive ethnography in the physiotherapy profession holds significant implications for professional development, research advancement, and meaningful change in clinical practice.

CLINICAL AND COST-EFFECTIVENESS OF AN ONLINE-DELIVERED GROUP-BASED PAIN MANAGEMENT PROGRAMME NON-INFERIORITY RCT – (ISELF-HELP)

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Background: Current best practice recommends group-based pain management programmes (PMPs) for long-term improvements in persistent pain-related disability.

Purpose: This non-inferiority trial aims to evaluate the clinical and cost-effectiveness of a group-based, online-delivered PMP (iSelf-help) compared to in-person PMP in reducing pain-related disability.

Methods: The iSelf-help non-inferiority randomised controlled trial is a pragmatic, assessor-blinded, two-arm RCT. Adults (age ≥ 18 years) with persistent non-cancer pain referred to a tertiary pain service deemed eligible for a PMP were recruited and block randomised to intervention (iSelf-help) and control groups (in-person PMP). The iSelf-help group participated in two 60-min video-conferencing sessions weekly for 12 weeks (first session led by a peer-support facilitator with lived experience of pain; second session led by clinicians) with access to resources via smartphone application and a password-protected website. Control participants received 12-week group-based, in-person PMP.

Results: We recruited 113 participants (56 iSelf-help and 57 in person) with a *M* (*SD*) age of 38.2 (13.7) years. The participants were 75% (*n* = 85) female, 8% (*n* = 9 gender diverse), 16% (*n* = 18) Māori. Based on an Intention to treat analysis on the primary outcome (Modified Roland Morris Disability Questionnaire) at six months (*n* = 73), iSelf-help was non-inferior to the in-person group with a point estimate of –0.4 (∞ = 1.5). It was also non-inferior for the secondary outcomes of Anxiety, Depression, Stress, Activity interference, Quality of life and Self-efficacy. Programme delivery cost per patient was lower for iSelf-help participants. No serious adverse events were reported.

Conclusion: This is the first online delivered group-based PMP with comparable clinical effectiveness in improving pain-related disability in people with persistent pain.

Implications: iSelf-help provides an economic and safe alternative group-based pain management option with increased geographical reach. Theoretically, it could enable choice between their preference for in-person or online health service delivery, providing a more person-centred approach to pain management.

A STRENGTHS-BASED RESILIENCE INTERVENTION FOR INFORMAL CARERS OF STROKE SURVIVORS: A FEASIBILITY STUDY

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Background: Informal carers play a significant role in stroke recovery, but care provision can be challenging, including emotional distress, anxiety, and social isolation. With the abruptness of stroke presentation and the psychological stress of suddenly supporting a person with stroke, interventions that enhance carers’ ability to cope with and build resilience are required.

Purpose: To report the feasibility and benefits of a strengths-based resilience intervention (SBRI) for carers of stroke survivors.

Methods: Based on systematic review and qualitative findings along with experts' advice, a recognised strengths-based resilience intervention was modified and evaluated using a randomised controlled trial comparing SBRI with usual care. SBRI was group delivered once a week for 8 weeks by a researcher with a psychology background and a trained Stroke Foundation advisor. SBRI focused on resilience skills, growth, flexible thinking, and identifying and cultivating character strengths. Qualitative interviews explored benefits and acceptability, and sought improvement suggestions. Data were analysed with the General Inductive Approach. Quantitative measures (Connor-Davidson Resilience Scale (CD-RISC)) and Psychological General Well-Being Index (PGWBI) scores were compared between groups using Cohen's *d*.

Results: Of 27 participants (New Zealand European = 23, Māori = 2, Asian = 2, male carer = 1; age *M* (*SD*) = 61(7), range 52–77 years), 13 were randomised to the SBRI group. SBRI was feasible to deliver, acceptable, and potentially beneficial, but more suitable to carers two years post-stroke. A significant between-group difference was found for CD-RISC ($p = 0.01$, $d = 1.01$) post-intervention.

Conclusion: SBRI was found potentially beneficial and acceptable, and worthy of further investigation. Additional input is required for new carers. Future trials must broaden recruitment diversity.

Implications: Interventions focusing on carers' resilience should be integrated into stroke rehabilitation to ensure sustainability of care provided to stroke survivors, thus enhancing stroke recovery. Physiotherapists can be trained to deliver SBRI to develop their role of supporting carers.

POSTURAL CONTROL IN CHILDREN WITH STRABISMUS: A LONGITUDINAL INVESTIGATION ON SENSORY WEIGHTING

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Background and purpose: Appropriate visual input is crucial in the early years of life to develop effective postural control, by coordinating the body's three sensory systems: visual, vestibular, and somatosensory systems. Strabismus (misalignment of eyes) is a relatively common childhood ophthalmic disorder that can impact on the development of effective postural control. This longitudinal study aimed to investigate changes in sensory weighting for postural control over time in children with and without strabismus.

Methods: Twenty-four children with strabismus (study group) and 22 matched control participants (control group) completed the Sensory Organization Test (SOT), BOT® Balance subscale, and Paediatric Balance Scale at three time points (baseline, 6, and 12 months). SOT of the NeuroCom Smart Equitest® was the primary outcome measure that systematically manipulated the available sensory information on six sensory testing conditions. The key variables of interest were the percentage measure of balance (Equilibrium Score) for each of the six conditions and a weighted summary score of all the six conditions (Composite Score). The BOT (0–24) and PBS (0–54) consist of a series of balance assessment tasks that were scored numerically on the items and reduced to a summary score.

Results: A significant group effect (between-participants, $p < 0.001$; F statistic ranging between 71.83 and 2701.76) was found for ES of the SOT condition 3 (sway-referenced surround – manipulating the visual information) and condition 4 (sway-referenced support – manipulating peripheral somatosensory information) and composite score when adjusted for age and baseline measures.

Conclusion: The sensory weighting for postural control changes over time in children as they develop, and this reweighting phenomenon is different between children with and without strabismus.

Implications: Findings highlight the importance of considering the difference in sensory weighting in children with strabismus and incorporate sensory reorganisation exercises in any part of rehabilitation when working with people with strabismus.

STROKE SURVIVOR EXPERIENCES OF TELEHEALTH DELIVERY OF CONSTRAINT INDUCED MOVEMENT THERAPY: THE RECITE STUDY

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Background: Constraint-induced movement therapy (CIMT) is recommended in the Australian and New Zealand Clinical Guidelines for Stroke Management, however only 11% of eligible stroke survivors receive CIMT. Difficulties attending face-to-face therapy is a key barrier to accessing CIMT for stroke survivors. The remote constraint induced therapy of the upper extremity (ReCITE) study explored the feasibility and acceptability of delivering CIMT via telehealth (TeleCIMT).

Purpose: To explore the experiences of stroke survivors who have completed a three-week TeleCIMT programme.

Methods: Qualitative design using semi-structured interviews. Stroke survivors who had completed a three-week TeleCIMT programme as part of usual rehabilitation were interviewed individually one month post programme completion. Interviews were conducted by an independent researcher. Interviews were audio-recorded, transcribed, and imported into Nvivo for thematic analysis using inductive coding.

Results: Sixteen participants agreed to be interviewed following their TeleCIMT programme. While participants reported seeing improvements in their arm function from TeleCIMT, there were several challenges to programme adherence. Challenges to the programme included the reduced level of direct therapist input and the use of technology when conducting a programme online. Participants also reported a high time burden for programme preparation and recording of practice as well as challenges tolerating six hours of mitt wear per day within the home. Most participants completed their programmes without a supporter; however, they reported having a support person would have been beneficial for programme adherence, assisting with paperwork and to provide encouragement. The programme was acceptable to stroke survivors with all participants stating they would recommend the programme to others.

Conclusion: Stroke survivors describe TeleCIMT as an acceptable intervention. Additional support is required for technology use and recording practice.

Implications: CIMT delivery via telehealth creates an opportunity to reduce inequity in healthcare access and enhance delivery of stroke services within Aotearoa for stroke survivors.

ON THE FACE OF IT: IMPLEMENTING NEW ZEALAND'S FIRST MULTI-DISCIPLINARY FACIAL PALSY SERVICE

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Background: Multi-disciplinary facial palsy clinics are considered best practice internationally for the management of peripheral facial palsy. There is increasing evidence that specialised facial physiotherapy improves facial function and quality of life, and decreases synkinesis. Synkinesis is abnormal regrowth of the facial nerve leading to unwanted co-contractions of muscles during attempted movement.

Purpose: To establish New Zealand's first multi-disciplinary clinic for facial palsy patients initially within the greater Wellington area and provide evidence-based facial therapy for patients living with facial palsy.

Methods: A three-monthly facial palsy clinic with a physiotherapist, plastic and craniofacial surgeon, and close contact with an opthalmologist was established in August 2023. Referrals are accepted for patients with a peripheral facial palsy that has not resolved within four months of onset. An initial joint assessment covers eye care, functional problems, psychological impact, previous therapy, and patient goals. Photos, video, and outcome measures are recorded including the Sunnybrook Facial Grading System

(FGS). Appropriate therapeutic management is started depending on the stage of recovery. This may include education, soft tissue mobilisation, taping, and facial neuromuscular retraining. The team discusses chemical dennervation for synkinetic muscles or surgical intervention where appropriate.

Results: Seventeen referrals have been received. One patient declined treatment and two patients have only had initial assessments. The remaining 14 patients show an average improvement in FGS between initial assessment and first follow up (approximately one month) of 12 points. Thirteen out of 14 patients showed an improvement with one remaining the same. The mean time since onset of palsy was 21 months.

Conclusion: Early results show a positive impact in symmetry, function, and synkinesis from access to specialised multi-disciplinary facial palsy care.

Implications: Facial palsy patients should have access to the benefits of specialist multi-disciplinary care in New Zealand. This could be delivered through tele-health to improve access.

CHANGES IN PHYSICAL IMPAIRMENTS IN FEMOROACETABULAR IMPINGEMENT SYNDROME FOLLOWING ARTHROSCOPIC SURGERY: SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Femoroacetabular impingement syndrome (FAIS) is a motion-related condition that can cause hip pain in active young adults. Evidence supports an association with chondral pathology and a 2.2–2.4 times increased risk of hip osteoarthritis. Arthroscopic surgery is a technique performed to normalise hip morphology associated with FAIS. Knowledge regarding physical impairments associated with the condition is limited to inform rehabilitation requirements and optimise patients' outcomes.

Purpose: The purpose of this systematic review was to investigate changes in physical impairments in those with FAIS pre- and post-arthroscopic surgery.

Methods: Six databases (CINAHL, EMBASE, MEDLINE, PubMed, SportsDiscus, and Web of Science) were searched for English-language studies reporting on pre- and post-operative physical impairments using physical outcome measures. Reporting quality was assessed using the Grading of Recommendations Assessment, Development and Evaluations (GRADE) framework, the Cochrane Risk of Bias tools, and for pooled data (standardised mean difference (*SMD*), and 95% confidence intervals (CI)).

Results: Seventeen studies were included (two randomised controlled trials; 15 pre-/post-intervention studies), varying from low-critical risk of bias and very low reporting quality on the GRADE. Post-operatively, in the meta-analysis, participants with FAIS walked with a higher peak hip flexion moment (SMD 0.5, 95% CI [0.1–0.88]; heterogeneity $I^2 = 0\%$, $p = 0.82$). Effects of surgery on hip strength are inconsistent, but suggest improved flexion, extension, abduction, adduction, and external rotation. Additionally, post-operative FAIS patients demonstrated decreased peak hip extension moments during walking and squatting, decreased gluteus maximus contraction time, and motor-control alterations.

Conclusion: The review suggests that people with FAIS displayed changes in their physical impairments pre to post surgery. Further research is required to understand the effect of arthroscopic surgery on physical impairments in specific subgroups of FAIS (cam v. pincer v. combined morphology).

POST-EXERTIONAL MALAISE IS THE PROBLEM, NOT ME

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Background: There is limited research into safe exercise prescription in post viral conditions such as myalgic encephalomyelitis/ chronic fatigue syndrome (ME/CFS) and post-acute COVID-19 syndrome (PACS), reflecting the lack of financial investment. Post exertional malaise (PEM) describes exhaustion from physical, cognitive, and sensory activities. The onset of fatigue experienced can be delayed and the impact can last for days or longer and exceeds the level of activity that preceded it. PEM is a key feature of post-viral conditions. Results from 2-day cardio-pulmonary exercise testing (2dCPET) demonstrate a dysfunction of the aerobic energy system; however, there are strong ethical considerations and challenges accessing 2dCPET. PEM is poorly understood by health care practitioners leading to unsafe exercise prescription.

Purpose: An assessment flowchart was created to show considerations to guide exercise prescription for individuals with PEM, to ensure a symptom-led approach to return to activities and exercise.

Methods: Existing recommendations for exercise after COVID-19 were reviewed and juxtaposed with current recommendations for the management of PEM. Insights were gathered from physiotherapists experienced in treating such conditions, leading to the development of screening questions. The flowchart delineates three primary pathways: further assessment by a GP, PEM evaluation, and a symptom-led return to exercise, detailed in the accompanying table. The flowchart was disseminated to physiotherapists and stakeholders knowledgeable in PEM and the flowchart was refined based on their feedback.

Results: The flow chart has been disseminated to physiotherapists and medical staff working in with people with post-viral conditions.

Conclusion: The lack of understanding regarding PEM and the issues surrounding 2dCPET hinder the safe rehabilitation of individuals with PEM. The practical tool provides a systematic approach to safely assess and prescribe symptom-guided exercise.

Implications: Individuals experiencing PEM can be assessed and guided through a symptom-led approach to exercise prescription to avoid exacerbating symptoms.

GUIDING OCCUPATIONAL HEALTH PHYSIOTHERAPY INTO THE FUTURE: AOTEAROA NEW ZEALAND'S PRACTICE GUIDELINES (2023)

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Background: Occupational health (OH) physiotherapists contribute to health and wellbeing through prevention and management of work-related injuries and illnesses. They collaborate with individuals and organisations to identify and eliminate occupational hazards while meeting the needs of workplaces and stakeholders.

Purpose: These guidelines define what an OH physiotherapist in New Zealand does, the core skills, roles, and competencies. This innovative guide is a first in New Zealand Physiotherapy, providing both clear practice and career development guidance. It also aims to elevate the quality of OH practice and promote its value in business and education sectors.

Methods: Seven experienced OH physiotherapists recruited from the OHPG SIG collaborated over 18 months. The group extensively researched and consulted with international and local industry experts including the Physiotherapy Board of New Zealand, Tae Ora Tinana, the International Federation of Physiotherapists working in Occupational Health and Ergonomics (IFPOHE) to maximise credibility to support our profession's growth both nationally and internationally.

Results: The guideline document produced outlines the core skills of an OH physiotherapist progressions through one's career. Different areas of OH physiotherapy are highlighted including ethical and professional practice, communication, collaboration, education, and leadership. Case studies are used to illustrate these skills in practice. The guidelines link with relevant legislation, standards, and acts, also outlining essential knowledge and working relationships within OH physiotherapy.

Conclusion: OH physiotherapists offer unique expertise in understanding workplace context and the relationship with health and function. They play a vital role in injury prevention and rehabilitation, bridging clinical and workplace settings for informed and successful health outcomes.

Implications: These guidelines mark an innovative step in physiotherapy, defining OH physiotherapy in New Zealand for the first time. They serve as a valuable resource for professional development and position New Zealand as a leader in this field internationally.

WHAT PHYSIOTHERAPISTS BELIEVE ABOUT SELF-MANAGEMENT AND LOW BACK PAIN

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Background: Low back pain (LBP) places a burden on individuals, whānau, and health care systems. Self-management of LBP is critical due to high recurrence rates, and persistent disability. Self-management includes the person's decision-making ability, health behaviours, and knowing when and where to seek health care support, potentially reducing the burden on people with LBP and health care systems. Little is known about physiotherapists' attitudes and beliefs towards supporting self-management with people with LBP.

Purpose: We explored New Zealand physiotherapists' knowledge of self-management concepts, including attitudes and beliefs about supporting self-management with people with LBP.

Methods: Interpretive Description involving semi-structured interviews conducted via Zoom with in-depth data interpretation were conducted.

Results: Seventeen physiotherapists, ranging from 24 to 65 years and early graduate to 40+ years of experience, participated. Two defined themes were: (1) Apportioning responsibility; from the belief that an episode of LBP resolves within 12 weeks, participants suggested it was the person's fault if LBP either persisted or recurred, or something to do with the person's individual attributes; and (2) Understanding self-management; all participants considered self-management as important, but description of key elements, beyond education and exercises, and strategies to support acquirement of skills by the person with LBP were limited.

Conclusion: Participants had a good understanding about the complexity of LBP yet lacked contemporary knowledge of the natural history of LBP. Participants identified limited key concepts of what self-management entails. Encouraging decision making, behavioural change, problem solving, action planning, and seeking help when required may not be used by NZ physiotherapists to support self-management.

Implications: Physiotherapists should challenge their current biases and beliefs and assimilate more contemporary evidence into their expectations of recovery for LBP. Education and resources about the core components of effective self-management and strategies of how to implement self-management into clinical practice should be encouraged.

AN ONLINE ACTIVITY-FOCUSED COACHING PROGRAMME HELPS REDUCE FATIGUE IN PEOPLE AFTER GUILLAIN-BARRÉ SYNDROME

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Background: As many as 60–80% of people with Guillain-Barré Syndrome (GBS) report persistent fatigue that significantly limits everyday functioning despite motor recovery. In other neurological conditions, there is evidence regular physical activity can reduce fatigue and it is plausible this may also apply to people with GBS.

Purpose: We evaluated the effectiveness, feasibility, and acceptability of an online physiotherapist-led activity-focused coaching programme designed to decrease fatigue in people who had prior GBS.

Methods: We recruited eight people diagnosed with GBS more than two years previously with fatigue limiting daily activity. We used mixed methods with a single system design to evaluate the impact on fatigue, activity, wellbeing, and confidence to exercise through repeated measures of the outcomes across three phases (baseline, intervention, follow-up). We used qualitative interviews to explore participants' perspectives of the programme.

Results: The online activity-focused coaching programme was effective in reducing fatigue for most participants. Participants found the programme both feasible and acceptable. They perceived benefit from the online sessions, which were supplemented by reminders and other forms of feedback set up during the sessions. Participants liked the coaching style and found it useful to develop a personalised plan to manage fatigue through setting goals and making an action plan, reflecting on progress and trying out ways to keep themselves on track. Participants felt they learnt a lot about fatigue, themselves, and strategies to manage fatigue, which included graduated physical activity.

Conclusion: Graduated physical activity is an important part of managing fatigue after GBS. A coaching approach helped participants develop skills to set goals and make a personalised plan to manage fatigue.

Implications: Physiotherapists are well positioned to guide physical activity to manage fatigue. The incorporation of coaching with physiotherapeutic knowledge can give clients skills and confidence to manage their condition.

DEVELOPMENT OF AN ENTRUSTABLE PROFESSIONAL ACTIVITIES FRAMEWORK FOR ORTHOPAEDIC PHYSIOTHERAPY PRACTITIONER ROLES IN NEW ZEALAND

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Background: In New Zealand, an increasing number of physiotherapists have been engaged in orthopaedic triage and assessment roles within elective orthopaedic departments to help improve timely access to diagnostic assessment and treatment planning for people referred to orthopaedic services. To date, no framework has been available to guide physiotherapists and surgeons in developing these roles.

Purpose: To develop a framework for physiotherapists and trainers to support orthopaedic triage and assessment in New Zealand.

Methods: An informal scoping review on education and competencies for advanced practitioners was conducted. A focused discussion between physiotherapists with experience in these roles using ten Cates methodology resulted in the development of an Entrustable Professional Activity (EPA) framework.

Results: The EPA framework identifies five key clinical activities performed in these triage roles and defines the context, limitations, knowledge, skills, attributes, and behaviours needed for each. The EPAs are mapped to existing New Zealand physiotherapy competencies and key competencies identified that are needed before entrustment of these activities with minimal or no supervision.

Conclusion: This EPA framework is intended for use in Elective Orthopaedic Departments, to support the development of physiotherapists working in orthopaedic triage and assessment roles in clinical subspecialty areas.

Implications: This framework provides a tool for the physiotherapy profession to develop into orthopaedic practitioner roles. However, this can be tailored for any advanced subspeciality area.

EXPLORING THE LIVES OF KIWI WOMEN AFTER SERIOUS KNEE INJURY

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Background: Women are increasingly sustaining significant knee injuries, particularly young women. Last year, over 100,000 women experienced some form of significant knee trauma in Aotearoa New Zealand. After injury, women are 2 to 3 times more likely to be inactive and have an increased risk of developing post-traumatic osteoarthritis (PTOA) compared to uninjured women. PTOA makes up two-thirds of all female knee arthritis and can manifest from six years post injury. Consequently, women may be navigating impacts of PTOA for most of their adulthood. While there are concerted efforts to prevent knee injury for women, no research has yet explored the impact significant knee injury has on the lives of New Zealand women. A thorough understanding of this experience would help to enhance the long-term outcomes for women after significant knee injury.

Purpose: We aimed to explore how women in Aotearoa New Zealand navigate life after a significant knee injury.

Methods: This interpretive descriptive qualitative study purposively recruited 18 women from across Aotearoa New Zealand with experienced of significant knee injury to participate in semi-structured interviews. Data were analysed using Reflexive Thematic analysis.

Results: Key themes were created, including "The invisible burden", which highlights the constant consideration of their knee, long after their knee had healed; "Navigating without a map", which reflects the guesswork and confusion surrounding how to care for their knee(s) after acute treatment ends; and "Pain not taken seriously", which describes how women felt their pain was often not treated with respect and empathy.

Conclusion: This study provides valuable insight into the experiences, attitudes, and beliefs of a diverse group of 18 women after significant knee injury.

Implications: These findings help to understand the impact that significant knee injury has on women's lives. Subsequently this information will help inform future programmes and policies for long-term knee injury management.

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CO-DESIGNING AN OA BOOKLET FOR AOTEAROA NEW ZEALAND

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Background: Osteoarthritis is prevalent in Aotearoa New Zealand, affecting 1 in 10 adults. However, people are not always equipped with the knowledge to self-manage their condition. Written resources can help to overcome this knowledge gap. Yet, existing educational resources can be fragmented, long-winded, not evidence-based, and lack cultural context.

Purpose: We aimed to co-design a short, evidence-based educational booklet for people with osteoarthritis in Aotearoa New Zealand.

Methods: We employed a co-design approach involving people with osteoarthritis and physiotherapists caring for them. We held a co-design workshop and online focus group, where an existing osteoarthritis guidebook was discussed to inform design and content preferences for the short booklet. Data was coded and analysed, and key recommendations were made. These recommendations informed the development of a prototype resource distributed to the participants for critical review. Participants provided written feedback on the prototype, which informed the refinement of the final resource.

Results: Five key themes were constructed from the data: the importance of design, maintaining simplicity, portraying osteoarthritis as more than just a joint condition, collaboration with healthcare professionals and organisations, and patient empowerment. These themes guided the content selection and design of the prototype resource. Prototype feedback focused primarily on the language used and the accuracy of the information for the Aotearoa New Zealand context.

Conclusion: The findings informed practical recommendations to guide the development of a prototype booklet; further refinement led to a short, contextually relevant OA resource for Aotearoa New Zealand.

Implications: This short, co-designed, evidence-based booklet research will provide people with osteoarthritis in Aotearoa New Zealand with accessible information and self-management strategies. The free-to-use resource will be available via hospitals, health clinics, and Arthritis New Zealand's website. This has the potential to improve patient knowledge and outcomes.

* * *

EXPLORING THE LONG-TERM WELLBEING OF PEOPLE WITH POST-TRAUMATIC KNEE OSTEOARTHRITIS FOLLOWING ACL REPAIR IN AOTEAROA

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Background: Anterior cruciate ligament (ACL) ruptures are common knee injuries that increase the risk for post-traumatic osteoarthritis. In Aotearoa, about 2500 people under 30 experience an ACL rupture and undergo ACL reconstruction surgery yearly. Due to the young age at the time of injury, many will experience radiological and symptomatic osteoarthritis before the age of 50 and have a higher likelihood of total knee replacement compared to the general population.

Purpose: This study aimed to gain insight into the long-term impacts of ACLR on people's well-being in Aotearoa by exploring their lived experiences five-plus years post-injury.

Methods: We conducted interviews with 12 people aged between 25 and 62 years who had an ACL rupture and had undergone surgical repair. We analysed the interview data using Reflexive Thematic analysis to identify themes.

Results: We constructed three themes from the data: (1) Nobody ever told me …, (2) The post-rehabilitation void, and (3) The elephant in the room: The psychosocial impact. Participants indicated feeling poorly informed of the long-term consequences of ACL rupture and indicated there appeared to be limited long-term rehabilitation and management options after they had recovered from the initial surgery. Participants commonly described fear, grief, and long-term psychological and social impacts, and most reported wanting to know more about the long-term management of their knee health.

Conclusion: The study highlights opportunities to provide better long-term support and management, improve outcomes and outcome expectations, and reduce the burden after an ACL rupture.

Implications: ACL injury profoundly impacts people's hauora (wellbeing). Better education, support services, and consideration of psychosocial factors are needed. Addressing identified barriers could reduce the individual and socioeconomic burden of post-traumatic osteoarthritis following ACL injury for New Zealanders. Future research involving stakeholders must establish acceptable long-term management programmes tailored to the local population.

EXPLORING PUBLICLY FUNDED PHYSIOTHERAPY SERVICES FOR PEOPLE WITH LOW BACK PAIN AND OSTEOARTHRITIS IN AOTEAROA

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Background: Osteoarthritis and low back pain (LBP) are the most common chronic musculoskeletal conditions in adults in Aotearoa, affecting approximately 13% and 9% of the population, respectively. Physiotherapists are commonly involved in managing both conditions. However, little is known about the range of publicly funded physiotherapy services available to people with osteoarthritis and LBP across Aotearoa.

Purpose: This study aimed to describe physiotherapy services and clinical pathways delivered across Aotearoa's 20 District Health Boards (DHBs[a]) for people with osteoarthritis and LBP.

Methods: Semi-structured interviews with fourteen DHB physiotherapists occurred between March 2022 and August 2023. Interview questions focused on describing clinical services for people with osteoarthritis, and LBP. Data were analysed using direct content analysis.

Results: Four main themes were identified: the ambiguity of primary, secondary, and tertiary care (overlap of services and different designations); organisational structure; getting into the system; and what is on offer. An overarching theme was the variation in service provision, organisational structure, and people's experiences navigating the system.

Conclusion: Our study shows significant inequities in healthcare services for people with osteoarthritis and LBP. It highlights the necessity of implementing systematic changes to ensure fair access to high-quality treatment, irrespective of payment status, ethnicity, or geographical location. This requires addressing these concerns at relevant forums and policy-making platforms.

Implications: Our findings demonstrate that while a diverse range of services are available for people with osteoarthritis or LBP, the lack of consistency may lead to inequities in patient experience, depending on location and ability to navigate the healthcare system. This inconsistency in service delivery could potentially cause confusion for patients, healthcare providers, and funders, resulting in gaps and overlaps in care. This is crucial for all stakeholders in the healthcare system.

[a] DHB used as Te Whatu Ora was yet to be established at the time of data collection.

LUNG VOLUME RECRUITMENT IN CHILDHOOD ONSET NEUROMUSCULAR DISEASE

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Background: Non-invasive ventilation has significantly increased life expectancy for individuals with neuromuscular diseases (NMDs). Research is now suggesting that tidal volume ventilation alone is insufficient to manage the vicious cycle of increasing load and progressive weakness that presents. In NMDs, muscle weakness renders ineffective spontaneous sigh breaths, yawns, and coughs. Proposed to maintain lung expansion, compliance, and secretion clearance, the absence of these supratidal inhalations leaves individuals at elevated risk of respiratory tract infections. This is especially evident in childhood-onset NMDs, in which progressive muscle weakness occurs in the context of both pulmonary and musculoskeletal development. Lung volume recruitment (LVR) is a simple inexpensive technique used to augment inspiration, either before a cough or on a regular basis to mimic lost spontaneous deep breathing activities. LVR has demonstrated effectiveness in improving assisted peak cough flow values across the spectrum of adult onset NMDs

Purpose: The focus of this systematic review was to consider whether LVR had an effect on pulmonary function test parameters in individuals with progressive childhood-onset NMDs.

Methods: A systematic search was undertaken in January 2019 considering LVR in the respiratory management of childhood-onset NMDs. Studies were critically appraised using tools from the Joanna Briggs Institute and data extracted using an adapted tool from the Cochrane effective practice and organisation of care group.

Results: Results were compiled using a narrative synthesis approach focused on peak cough flow, forced vital capacity, and maximum inspiratory capacity outcomes.

Conclusion: Though limited, evidence suggests an immediate positive effect of LVR on peak cough flow and a potential long-term effect on the rate of forced vital capacity decline.

Implications: Considering the accepted correlation between forced vital capacity and morbidity, this review suggests that LVR be considered for individuals with childhood-onset NMDs once forced vital capacity starts to deteriorate.

EFFECTIVENESS OF A BOWEL EDUCATION CLASS TO REDUCE PATIENT WAIT TIMES FOR PELVIC HEALTH PHYSIOTHERAPY

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Background: Increasing referrals to pelvic health physiotherapy service (PHPS) at Waitematā District Health Board (DHB) for bowel conditions contributed to extended wait times and inequities compared to referrals for bladder or pelvic floor conditions who attended an education class.

Purpose: To assess the feasibility of implementing a Bowel Education Class (BEC) to reduce waiting times for the PHPS at Waitematā DHB and seek feedback on patient experience.

Methods: The BEC was developed in consultation with the multidisciplinary team. Existing PHPS waiting list and incoming referrals were screened by a Senior Pelvic Health Physiotherapist. Inclusion: bowel-related conditions referred from colorectal service. Exclusion: required interpreter, multiple co-morbidities, or combined bowel and bladder issues, patient declined class. Patients were contacted by an administrator and invited to attend. BEC attendees were asked to complete a questionnaire following completion of the two-part class. Following BEC attendance patients were invited to book an individual PHPT appointment.

Results: BEC ran bimonthly between February and December 2019. Sixty-seven patients were invited to attend: 40 attended in-person, and seven attended via telehealth video appointment (70.1% attendance). Ninety-four percent of attendees agreed or somewhat agreed that class content was relevant and 89% reported their confidence in managing their symptoms as good, very good, or excellent. Eleven attendees booked 1:1 follow-up with the physiotherapist. Wait times to access physiotherapy service for bowel-related conditions reduced from > 9 months < 4 months over the trial period.

Conclusion: Implementation of the BEC by the PHPS at Waitematā DHB was feasible, well-attended, improved patient confidence in bowel symptom management, and improved waiting times.

Implications: Further investigation required on BEC cultural appropriateness, barriers to attendance, and when follow-up 1:1 physiotherapy was not requested. Consider providing access to BEC information earlier in the patient pathway. Opportunities for nationalising BEC in Health NZ including telehealth processes.

DEVELOPMENT OF EVIDENCE-BASED STANDARDS FOR INPATIENT PHYSIOTHERAPY SERVICES: A REVIEW OF CLINICAL PRACTICE GUIDELINES

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Background: High-quality clinical practice guidelines (CPGs) deliver recommendations based on systematic reviews of the literature and consensus methodology. This systematic review and content analysis of CPGs seeks to inform the establishment of evidence-based standards for inpatient physiotherapy services. Establishing standards that can be used to measure service performance is critical to service design and successful business cases.

Methods: Between July and September 2021 scholarly databases (Web of Science, CINAHL and Scopus, PEDro) and grey literature (Guideline databases (NICE, SIGN, ECRI guideline trust, Guidelines International Network (GIN)) were searched for CPGs related to conditions and therapy approaches commonly encountered by physiotherapists working in a secondary care setting. Inclusion: Conditions commonly encountered by physiotherapists in a secondary care setting or physiotherapy treatment approaches in a guideline or recommendation. Exclusion: Mental health conditions, paediatrics, COVID-19, and conditions common to tertiary care such as burns, spinal cord injury, and cardiothoracic surgery. A pragmatic approach was taken to group the guidelines aligned with common physiotherapy services and select only the most recent and comprehensive guidelines for final analysis. Thirty-two CPGs were selected, and quality was assessed using the Appraisal of Guidelines for Research and Evaluation Instrument (AGREEII). Content analysis of guideline recommendations grouped data into themes covering dosage and content. Statements were drafted to represent the data gathered for each group of guidelines.

Results: The recommendations of 32 CPGs yielded 27 statements.

Conclusion: Twenty-seven statements represent a distillation of the best evidence-based practice recommendations from CPGs in inpatient physiotherapy.

Implications: Recommendations for dosage (frequency, intensity, and duration) of physiotherapy are not available for many areas of practice; researchers and clinical practice guideline groups should consider the importance of these data for service commissioning.

PHYSICAL ACTIVITY LEVELS IN CHILDREN WITH BRONCHIECTASIS LIVING IN COUNTIES MANUKAU, NEW ZEALAND

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Background: Bronchiectasis guidelines encourage children to participate in regular physical activity, but there is minimal guidance supporting these recommendations and limited knowledge surrounding current physical activity participation.

Purpose: To investigate how physically active children with bronchiectasis living in Counties Manukau are compared to their healthy peers, and how often they achieved daily recommendations of at least 60 min of moderate to vigorous physical activity (MVPA) across the week. Secondary aims explored associations between MVPA and demographic or disease severity markers, and the mode of activity and time of day children with bronchiectasis engage in physical activity.

Methods: A quantitative, cross sectional, observational study was undertaken. Thirty-one children aged 7 to 12 years participated in the study: Bronchiectasis group, $n = 18$; Control group, $n = 13$. Time spent in MVPA was measured over seven consecutive days using wrist-based ActiGraph wGT3X+ accelerometers. Mode of activity and time of day children engaged in physical activity were measured using the Physical Activity Questionnaire for Children (PAQ-C).

Results: The Bronchiectasis group completed 31.6 ($p = 0.034$) less minutes of MVPA per day than the Control group, with both groups demonstrating significantly higher ($p = 0.002$) MVPA minutes on weekdays compared to weekend days. On average, 62.3% of the Bronchiectasis group and 86.4% of the Control group achieved daily MVPA recommendations. Weak to moderate associations were found between MVPA minutes and body mass index and socioeconomic hardship. Both groups were most active at school during the week, participating in more informal schoolyard games than organised activities.

Conclusion: Children with bronchiectasis are less active than their peers and achieve daily MVPA recommendations less often. Children are most active during the week at school.

Implications: In-depth physical activity assessment needs to be incorporated in routine bronchiectasis management to proactivity identify and manage inactivity and its associated comorbidities.

"DOORS KEEP CLOSING EVERYWHERE." EXPERIENCES OF ACCESSING PRIMARY CARE BY PEOPLE LIVING WITH LONG COVID

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Background: Long COVID, or post-COVID condition, is the persistence of symptoms beyond 12 weeks following acute COVID-19 infection. It is estimated to affect one in 10 people, can present with wide-ranging symptoms, and, in some cases, is extremely debilitating. With few publicly funded long COVID clinics, most people rely on primary care providers as a first point of contact. There is currently limited understanding of the experience of accessing primary health care by adults living with long COVID in Aotearoa New Zealand.

Aim: To explore the experiences of accessing primary health care by adults living with long COVID.

Methods: A narrative inquiry approach was used to capture participants' lived experiences of accessing primary health care. Zoom interviews were conducted with study participants either in groups or individually. The automatically generated transcripts were reviewed and corrected where necessary. The collated data were analysed using Braun and Clarke's thematic analysis.

Results: Eighteen people participated in the interviews. Codes were identified and, through an iterative process, themes were generated, reviewed, defined, and named. Themes included lack of validation; limited knowledge and support; unmet needs; and self-advocacy.

Conclusion: The picture painted by participants was bleak with a sense that the world had moved on from COVID-19 and left them behind. Despite the existence of long COVID for over three years, and the parallels with existing post-viral conditions, there appears to a lack of support in primary healthcare for those living with the condition.

Implications: There is a need to provide support to those delivering primary care to ensure a better healthcare experience for people living with long COVID. This might be achieved through a public awareness campaign, shared educational content for health professionals, and health navigators to advocate for, and support, patients on their healthcare journey.

TRANS, NONBINARY, AND GENDER DIVERSE EXPERIENCES OF PHYSIOTHERAPY

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Background: This research explores the intersection of physiotherapy practice and the experiences of trans, non-binary, or gender diverse (TGNB) individuals in Aotearoa New Zealand.

Purpose: By exploring the experiences of the TGNB community accessing and utilising physiotherapy services, the aim of the study was to understand specific barriers and facilitators of positive physiotherapy experiences within the New Zealand context.

Methods: Semi-structured interviews were conducted with current or former clients of a physiotherapy clinic providing sex and gender-affirming services. Data collection occurred via online videoconferencing. Qualitative data were analysed using reflexive thematic analysis with key themes and subthemes mapped to the socioecological model.

Results: Seventeen participants aged between 15 and 64 years with diverse identities participated in the study. Most (88%) participants were of New Zealand European ethnicity and lived in metropolitan/urban areas. Participants described having poor experiences with physiotherapy prior to engaging with the sex and gender affirming clinic. Four key themes relating to affirming physiotherapy experiences were identified: safety and trust in care, understanding body discomfort or dysphoria, trans inclusive approaches, and challenging cisnormative contexts. Organisational factors contributing to positive experiences centred around the clinic's credibility, safety, visible inclusivity, and consistent sensitivity across the clinical encounter. Interpersonal factors linked to positive experiences included clinicians possessing higher levels of TGNB-specific health knowledge, culturally inclusive practice, and a client-led biopsychosocial approach to care.

Conclusion: While challenges persist for TGNB individuals in the context of physiotherapy, this study underscores achievable changes at organisational and interpersonal levels within physiotherapy clinics.

Implications: By prioritising safety, inclusivity, and TGNB-specific knowledge, physiotherapists can actively contribute to fostering positive experiences for the TGNB community.

PATIENT PREFERENCES FOR TELEREHABILITATION COMPARED TO IN-PERSON PHYSIOTHERAPY: A DISCRETE CHOICE EXPERIMENT

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Background: Telerehabilitation may improve accessibility and cost-effectiveness of rehabilitation services but patients' willingness to engage in telerehabilitation may be influenced by technical or personal factors.

Purpose: This study aims to explore how patient preferences for telerehabilitation or in-person consultations are influenced by attributes of physiotherapy consultations and patient demographics.

Methods: A binary discrete choice experiment was utilised. Participants chose between telerehabilitation and in-person consultations across 12 hypothetical scenarios, each with a different combination of attributes related to each choice. The primary outcome measures were attributes related to the choice between telerehabilitation and in-person consultations: appointment duration, cost, travel distance, purpose, therapist, time of day, and wait time. Statistical analysis used conditional logit models and demographic data were collected to analyse the impact of these factors on preferences.

Results: One hundred and fifty-two participants (76% women; *Mdn* age = 32 years) who had attended physiotherapy consultations were recruited for the study. Most (90%) participants were comfortable with technology and primarily used mobile or tablet devices. Patients preferred telerehabilitation when travel distance to the in-person alternative was 20 km or 35 km relative to 5 km, when the appointment was 15 minutes, scheduled in the afternoon, or when the wait time was shorter (1 day or 1 week relative to 1 month). Preference for telerehabilitation appointments increased among people in inner regional versus urban areas or with high-speed internet but was decreased among people with chronic health conditions.

Conclusion: Preferences for telerehabilitation consultations were higher for shorter sessions where the in-person alternative was some distance away, as well as among patients with high-speed internet, particularly from inner regional areas. Chronic health conditions decreased preference for telerehabilitation.

Implications: These findings offer potential insights for tailoring of physiotherapy service delivery to fit diverse patient preferences to better engage patients and improve care.

SO, YOU THINK YOU CAN DANCE? DANCING WITH SAMOAN CULTURAL SAFETY BETWEEN POWER AND VULNERABILITY

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Background: A culturally safe health workforce has the capability to remove or reduce the barriers that Pacific peoples face in accessing and receiving high-quality health services by translating Pacific cultural values, concepts, and world views into high-quality, evidence-informed health services. However, there is no specific guidance available on how the physiotherapy profession could plan, promote, and deliver culturally safe health services when working with and for Pacific peoples.

Purpose: This doctoral research aimed to explore the cultural knowledge of Samoan families and physiotherapists living in Aotearoa and Samoa with the view of illuminating how understandings of Samoan cultural philosophies and ways of being and knowing could enhance the rehabilitative role of physiotherapists.

Methods: This qualitative research utilised Talanoa and Fa'afaletui research methodologies as data collection and thematic analysis tools. Drawing from the Fa'afaletui methodology, participants were clustered into five groups: (1) Physiotherapists in New Zealand, (2) Families in New Zealand, (3) Physiotherapists in Samoa, (4) Families, Traditional healers, and Health officials in Samoa; (5) and, finally, a transnational group of Elders.

Results: The participants collectively emphasised the importance of the following thematic concepts in delivering culturally safe physiotherapy with Samoan families: Aiga and Tamaliiaga (Extended family and Genealogy), Teu le va (Tending to relational spaces), Holistic healthcare, Traditional healing practices, and Health systems. These concepts and notable comments from participants led to the utilisation of the traditional Samoan dance called "taualuga" as a conceptual framework to guide cultural safety in engagements with Samoan families.

Conclusion: Samoan families and physiotherapists have described the essential concepts required for best practice, evidence-informed, culturally safe physiotherapy when engaging Samoan families and communities.

Implications: These research findings and the conceptual framework drawing upon the taualuga provides guidance for physiotherapy clinicians, researchers, policy makers, and educators in delivering culturally safe services for and with Samoan families.

CAN PHYSIOTHERAPISTS PREDICT WALKING RECOVERY AFTER STROKE?

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Background: Regaining independent walking after a stroke is significant for patients and their families, as it affects both rehabilitation and discharge planning. Patients and families report wanting information about walking recovery. However, the degree to which physiotherapists can accurately provide predictions on walking recovery is unknown.

Purpose: The aim was to explore whether physiotherapists can accurately predict, at 1-week post-stroke, whether and when their patient will achieve independent walking after stroke.

Methods: Adults with lower-limb weakness and unable to walk independently were recruited within 5 days of stroke from two Aotearoa hospitals. Clinical assessments were completed at 1 week. At 1-week post-stroke, the treating physiotherapist was asked to predict whether their patient would walk independently by 4, 6, 9, 12, 16, or 26 weeks post-stroke. Physiotherapists rated their confidence in their predictions on a 6-point Likert scale. Functional Ambulation Category (FAC) assessment was completed at each timepoint to determine time by which independent walking was achieved, defined as FAC ≥ 4. Binary logistic regressions were conducted with physiotherapist accuracy as the dependent variable and confidence, years of stroke-specific experience, stroke severity, patient age, lower limb strength, and 1-week FAC as independent variables.

Results: We included 91 patients (*Mdn* age 71 years) and 37 physiotherapists (*Mdn* 2 years stroke-specific experience, range 0–14 years). Physiotherapists correctly predicted whether independent walking was achieved by 26 weeks for 80/91 (88%) participants. Predictions of time taken to achieve independent walking were accurate for 39/91 (43%), optimistic for 28/91 (31%), and pessimistic for 24/91 (26%). Prediction accuracy was not related to physiotherapist confidence in their predictions or years of experience (both $p > 0.4$).

Conclusion: Physiotherapists can accurately predict whether a patient will walk independently after stroke but not when they will achieve this.

Implications: Validated walking prediction tools may assist physiotherapists in rehabilitation and discharge planning.

THE TWIST TOOL PREDICTS TIME TO WALKING INDEPENDENTLY AFTER STROKE

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Background: The likelihood of regaining independent walking after stroke is important to patients and their families and influences rehabilitation and discharge planning.

Purpose: The aim of this study was to develop a tool that can be used early after stroke to predict whether and when a patient will regain the ability to walk independently.

Methods: Adults with stroke who had new lower limb weakness and were unable to walk independently were recruited from two large hospitals in Aotearoa. Clinical assessments and transcranial magnetic stimulation were completed 1-week post-stroke. Participants with a motor-evoked potential (MEP) in the tibialis anterior muscle were classified as MEP+. The primary outcome was time post-stroke by which independent walking (Functional Ambulation Category score ≥ 4) was achieved. Cox hazard regression identified predictors for achieving walking by 4, 6, 9, 16, or 26 weeks post-stroke. Predictors were assigned a weighted score and summed to form the TWIST score. MEP status and clinical predictors were combined in binary logistic regression analyses at each timepoint to identify whether MEP status adds value to clinical predictors.

Results: We included 93 patients (*Mdn* age 71 years). Age < 80 years, knee extension strength ≥ 3/5, and Berg balance test score < 6, 6–15, or ≥ 16 were combined to form the TWIST prediction tool. The TWIST tool was at least 83% accurate for each timepoint. MEP status at 1-week post-stroke did not survive analyses when combined with clinical measures.

Conclusion: The TWIST tool accurately predicts whether and when a patient will achieve independent walking after stroke using simple bedside measures 1-week post-stroke. Transcranial magnetic stimulation to determine MEP status is not needed for walking prediction.

Implications: Once validated, the TWIST tool will be an important addition to the physiotherapy toolbox that can advance stroke practice.

IMPLEMENTATION OUTCOMES OF A FRAMEWORK FOR MANAGEMENT OF CONCUSSION IN NEW ZEALAND SECONDARY SCHOOLS (FRANCS)

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Background: Concussions can lead to cognitive and behavioural changes, affecting school performance. We co-designed and implemented a Framework for managing Concussions in New Zealand Schools (FRANCS) to support return-to-learn and -activity.

Purpose: To describe attributes of students reporting their concussion across 12 schools, and to determine implementation outcomes, reported by school stakeholders.

Methods: The schools' concussion officer referred students with a concussion to the research fellows (RFs). The RFs met weekly with the students, assessing the mechanism of injury and concussion-related symptoms with the Symptom Score (SS) of the Child Sport Concussion Assessment Tool (SCAT5). At the end of each year, an implementation outcomes questionnaire with Likert-style (1 = best rating; 5 = worst rating) and open-ended questions was administered to school staff.

Results: Eighty-one students (71% Pākehā, 9% Māori, 5% Pasifika) participated. Eighty-seven percent of the concussions were sports-related. Fifty-six percent of the students met with the RFs once, and the remainder up to five times. The Symptom Scale (*Mdn* (range)) at the first and last meetings were 37.5 (0–74) and 28.0 (0–77, $n = 35$) respectively. Twenty-four school stakeholders completed the implementation questionnaire: 21 found that FRANCS was "mostly" or "completely" successfully implemented, and 22 would use FRANCS beyond project completion. Student and parent compliance had the least favourable scores (*Mdn* > 2). Support provided by the RFs, and the process of FRANCS were highly valued. Challenges included lack of time and inconsistent buy-in from some students, whānau, staff, and coaches.

Conclusion: Although the implementation process was mostly regarded as successful, strategies to manage administrative burden, and education to highlight the seriousness of concussion with all stakeholders, are needed to improve buy-in.

Implications: FRANCS can be for schools to provide concussion support, adapted to individual schools' contexts. Buy-in and good communication processes are needed from all members of the school community to sustain the processes.

* * *

A FRAMEWORK TO IMPROVE THE QUALITY OF HOSPITAL-BASED PHYSIOTHERAPY

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Background: A quality framework for hospital-based physiotherapy is lacking. This study aims to design a framework, building on the currently available literature, to improve the quality of hospital-based physiotherapy.

Purpose: To gain insight into which quality improvement methods (QI) could form the design of a QI framework, as a foundation to improve and steer the quality of Dutch hospital-based physiotherapy, by combining the insights of hospital-based physiotherapists and their key stakeholders.

Methods: A multidisciplinary panel of six representatives of hospital-based physiotherapy and their key stakeholders (patients, medical specialists, hospital management, and professional association) was set up. We used brainwriting to sample ideas and the "decision-matrix" to select the best ideas.

Results: The first round of brainwriting with an online panel of six experienced participants yielded consensus on seven possible methods for quality improvement of hospital-based physiotherapy: (1) continuing education, (2) feedback on patient-reported experience measures and patient-reported outcome measures, (3) a quality portfolio, (4) peer observation and feedback, (5) 360-degree feedback, (6) a management information system, and (7) intervision with intercollegiate evaluation. Placing these methods in a decision matrix against four criteria (measurability, acceptability, impact, accessibility) resulted in a slight preference for a management information system, with an almost equal preference for five other methods immediately thereafter. The least preference was given to a 360-degree feedback.

Conclusion: In the design of a framework for improving the quality of hospital-based physiotherapy, all seven suggested methods were perceived as relevant but differed in terms of advantages and disadvantages. This suggests that, within the framework, a mixture of these methods may be desirable to even out respective advantages and disadvantages.

Implications: The results of this study, summarised in a graphical model for a framework on quality of hospital-based physiotherapy provide a foundation to steer the quality of hospital-based physiotherapy to become more optimal.

* * *

FEELING GOOD VERSUS FEELING BETTER: ANALYSIS OF PATIENT REPORTED OUTCOMES AFTER ACLR IN NEW ZEALAND

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Background: Knee Injury and Osteoarthritis Outcome Score (KOOS) data can be interpreted using the minimal important change (MIC) and patient-acceptable symptom state (PASS). MIC is the minimal change over time patients perceive as important. PASS deals with remission of symptoms and identifies those who consider themselves well. MIC and the PASS complement each other and are used to identify patients who are (1) “feeling better” and (2) those “feeling good”, respectively.

Purpose: To determine the proportion of New Zealand European, Māori, and Pasifika patients who are “feeling good” and “feeling better” from New Zealand ACL Registry KOOS data.

Methods: KOOS4 at pre-op, 6-, and 12-months post-ACLR was calculated from average score of pain, symptoms, sport, and quality of life subscales. KOOS4 > 80/100 defined an acceptable symptom state. MIC was 9 points. The proportion of individuals in an acceptable symptoms state and exceeding the MIC was explored 6- and 12-months post ACLR. Chi-square tests were used to explore differences between ethnicities in proportion of patients meeting the criteria.

Results: 4116 patients were included (48% female; 2472 New Zealand European; 548 Māori; 382 Pasifika). Sixty-one percent to 62% considered themselves at least minimally improved at 6 months, rising to 72% to 75% at 12 months. At 6 months, 25% New Zealand European and 25% Māori were in a satisfactory symptom state, versus 22% Pasifika ($p < 0.001$). At 12-months 42% of Māori ($p = 0.08$) and 42% of Pasifika ($p < 0.001$) were in a satisfactory symptom state, versus 46% for New Zealand European.

Conclusion: A lower proportion of Pasifika report an acceptable symptom state at key timepoints after ACLR. There is a statistical difference between the number who “feel better” versus “feel good” after ACLR in New Zealand but this may not be a clinical difference.

Implications: There are potential ethnic disparities in ACLR outcomes in New Zealand.

WRITE ON! STRATEGIES FOR IMPROVING CLINICAL DOCUMENTATION SKILLS IN PHYSIOTHERAPY STUDENTS USING SIMULATION AND WORKED EXAMPLES

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Background: Clinical documentation is a core component of physiotherapy practice, and educators are accordingly tasked with developing clinical documentation skills in physiotherapy students. Despite this, limited published evidence exists regarding effective teaching and learning strategies for clinical documentation in physiotherapy education programs. This may pose a challenge to physiotherapy educators and students alike, especially when ensuring students are equipped to successfully transition from curriculum-based learning to practice placements.

Purpose: To trial and evaluate the implementation of a standalone training module to enhance the clinical documentation skills of final year physiotherapy students and support their transition to clinical practice placements.

Methods: The 5-hour training module (split across two consecutive days) was implemented in a cohort of fourth year undergraduate physiotherapy students at The University of Queensland in Australia. The training module focused on developing skills specific to progress notes and referral letters in a musculoskeletal private practice setting and featured standardised documentation simulation and interactive worked example learning activities. The module was evaluated through pre-post comparison of student writing in domains of purpose, content, style, length, organisation, and language. A post-test survey measured student satisfaction with the module as a secondary outcome.

Results: A total of 112 students participated in the training module. Preliminary data suggests that writing performance improved in domains of “purpose”, “content”, “length”, and “organisation”. Students reflected that the module enhanced their learning and helped them identify strengths and weaknesses in their clinical documentation. Students also indicated that additional opportunities for feedback, revision, and practice of writing would have been helpful.

Conclusion: Simulation and worked examples are teaching tools that may assist physiotherapy students in honing their documentation skills prior to clinical practice placements.

Implications: The knowledge gained from trialling this training module may support physiotherapy educators in designing and implementing a curriculum to develop physiotherapy students’ clinical documentation skills.

POSTER PRESENTATION ABSTRACTS

THE LONG COVID SYMPTOM MAP: OUR PATIENT'S VOICE. GUIDING PATIENT CARE TO APPROPRIATE HEALTH PRACTITIONERS

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Background: There is no national framework to identify and chart an individual's post COVID symptoms in New Zealand. The Long COVID Symptom Map (LCSM) was developed in March 2022. Cardiorespiratory physiotherapists treating patients at that time felt an increasing need to have something that made sense of overwhelming complex narratives, and they were unable to gain access to overseas tools.

Purpose: The LCSM streamlines the patient experience, identifying key symptoms and directing care to the right professional.

Methods: Developed by the author (July 2022) and tested for red flag identification. The LCSM was presented to the Cardiorespiratory Special Interest Group in a webinar, and they agreed to pilot and support its use. The LCSM was presented at The Otago Forum "Journey through the fog" and at the National conference in 2023. The LCSM has continued to be used by a growing number of practitioners as well as patients who chart their own symptoms. Newly revised and adopted into the Ministry of Health National Clinical Guidelines, it has been taken up by Queensland Health Australia. Future research is planned, commencing with evaluation of the LCSM.

Results: The LCSM is easy to use, and completion can be supported or independently managed. As predicted, it saves time, assessing and providing direction to the most appropriate Allied Health Professional when presented with a complex cluster of symptoms.

Conclusion: The LCSM Identifies primary symptoms and functional disabilities. It provides a body chart and narrative space to capture all symptoms, and it supports red flag recognition. It offers timely patient reporting of multiple symptoms and continues to evolve.

Implications: The LCSM has merit for all staff working with Long COVID patients, reducing the time needed to determine symptoms and offering a meaningful platform for the patient from which they can receive treatment, feel heard and demonstrate change.

EXPLORING HOW PHYSIOTHERAPISTS CONSIDER FALLS RISK DURING THE CLINICAL MANAGEMENT OF PEOPLE WITH OSTEOARTHRITIS

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Background: My research explores physiotherapists' understanding of falls risk in people with osteoarthritis. The number of people diagnosed with osteoarthritis is increasing, as is Aotearoa's aging population. There is a well-researched link between osteoarthritis and falls, with an increased risk of falls in this population. Physiotherapists have an important role in assessing and treating people with osteoarthritis, and in preventing falls and managing people after falling. It is therefore important to find out how physiotherapists consider falls in their treatment of people with osteoarthritis.

Purpose: Little is known about how physiotherapists perceive the connection between falls and osteoarthritis, and evidence from Australia shows the link may not be considered. This study's purpose was to explore if physiotherapists in Aotearoa New Zealand consider falls risk in people with osteoarthritis. This research is an important step to gain insight into current clinical practice.

Methods: I used a Qualitative Descriptive method for this study and semi-structured interviews to collect data from 10 physiotherapists; data were then analysed by qualitative content analysis.

Results: Three themes were conceptualised from the data: (1) What's the risk? (2) Making assumptions, and (3) The gatekeeper of treatment. We found factors such as age, co-morbidities, system restraints, roles, and assessment forms influenced participants' clinical decision making, and that physiotherapists do not appear to be routinely screening for falls risk in people with osteoarthritis.

Conclusion: The findings of this study suggest a benefit to patients with osteoarthritis of physiotherapists questioning about falls, regardless of other presenting clinical features.

Implications: The finding supports our understanding of how physiotherapists might effectively manage falls risk in the OA population, to shape future guidelines and recommendations. These findings, if acted upon, could result in reducing fall-related injuries, fatalities, and healthcare costs, benefitting people with OA and healthcare systems.

THE ROLE AND IMPACT OF VOICE PHYSIOTHERAPY: A QUALITATIVE STUDY OF SERVICE USER PERSPECTIVES

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Background: Physiotherapy has the potential to benefit people with voice and throat problems, in conjunction with existing services. Yet as a niche area of practice, little is known about the impact or role of physiotherapy in voice and throat care.

Purpose: This study aims to explore the impact and role of physiotherapy in voice and throat care, from the perspective of people who have accessed such care. Gaining a better understanding of how physiotherapy contributes to care has the potential to improve services.

Methods: An interpretive description design was used to explore participants' perspectives of the impact and role of physiotherapy through individual semi-structured interviews with people who had accessed physiotherapy for voice or throat care through a single private practice. Transcripts were analysed with a general inductive approach suitable for qualitative evaluation data.

Results: Data were analysed from six interviews and four main themes emerged, with each theme further characterised by categories. Two themes related to the impact of physiotherapy in voice and throat care: Offers a deeper understanding of issues affecting their voice/throat; and Facilitates individualised specific management. Two themes related to the role of physiotherapy in voice and throat care: Complements existing services; and Valuable service.

Conclusion: This study indicates that physiotherapy for voice and throat problems can complement existing services while adding value, providing people with a deeper understanding of their problem, and facilitating specific management.

Implications: These findings help inform how physiotherapy can contribute to voice and throat care services.

VOICE PHYSIOTHERAPY: CLINICAL CHARACTERISTICS OF INDIVIDUALS PRESENTING TO PHYSIOTHERAPY FOR VOICE AND THROAT CARE

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Background: Voice physiotherapy has the potential to benefit a wide range of people with voice and throat problems, in conjunction with existing services. Yet as a niche and novel area, little was known about the characteristics of individuals presenting for physiotherapy care with voice and throat problems.

Purpose: This study aimed to describe the demographic and clinical characteristics of individuals presenting to physiotherapy for voice and throat-related problems and to use this information to clarify the role of physiotherapy in the established voice care team.

Methods: A retrospective clinical case notes review was conducted of all clients who accessed physiotherapy for voice and throat problems at a private practice based in Christchurch, New Zealand, within a 12-month period from 1 October 2020 to 1 October 2021.

Results: Data were analysed from 53 patient charts. The typical profile of an individual accessing the service were female (*n* = 37), New Zealand European (*n* = 26), singer (*n* = 43), with chronic problems (*n* = 20), of a non-traumatic origin (*n* = 45). The *M* age was 35 (*SD* = 17.79, range 19–80) and five (10%) of the clients' issues had a relevant ACC claim. Voice problems were present in *n* = 39 and muscle-related problems were present in *n* = 42 of cases. Treatment primarily included laryngeal manual therapy and various modes of exercise therapy.

Conclusion: The clinical characteristics described offer insight into the demographic and clinical characteristics, such as age, ethnicity, origin, and chronicity of problems of individuals accessing physiotherapy services for voice and throat problems. A high prevalence of muscle-related problems and wider issues were identified, consistent with the physiotherapy skill set.

Implications: By identifying and managing muscle-related voice problems and addressing wider factors contributing to voice and throat problems, physiotherapy appears to complement existing ENT or SLT services, which tend to focus on other factors affecting the voice and throat.

GLOBAL HEALTH PHYSIOTHERAPY: IMPLICATIONS FOR EQUITY AND ADVOCACY

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Background: The world faces considerable challenges to health and wellbeing. Globally distributed determinants have a powerful influence on health outcomes with inequitable drivers of ill health distributed within and across population groups.

Purpose: To provide a summary of recent peer-reviewed and published literature in the field of Global Health and Physiotherapy from the past 10 years.

Methods: Literature review.

Results: Physiotherapists can and should play an active role in forming healthy policy for all. There are several identified global and local movements to which physiotherapists can contribute to ensure equitable access to the determinants of health, including the global drivers of health inequities, education, and clinical practice.

Conclusion: Healthcare workers can play an important role in providing equitable, accessible healthcare for all. The Sustainable Development Goals and the Environmental Physiotherapy Association are examples in which physiotherapists can contribute to global advocacy movements.

Implications: Physiotherapists can play a pivotal role within the field of Global Health to advocate for equitable, healthier environments, particularly for those who face inequities to the determinants of health.

"RESEARCH HAS FOUND …"!!! SO WHAT???: CO-DESIGNING FOR RESEARCH COMMUNICATION

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Background and purpose: Strabismus is an ophthalmic disorder that affects balance, function, and psychosocial aspects. The research stream on strabismus and balance in children started as a "coffee conversation" between research physiotherapists and ophthalmologists in 2014. Further discussions on collaborative research led to a series of investigations in children with strabismus. Collectively, these research findings suggest that children with strabismus rely on their visual input even when they are inaccurate. The findings also imply that children with strabismus have issues with their sensory integration that affect their balance control as well as their physical function (detailed scientific information on these can be found elsewhere). However, the question of "What do these research findings mean to children with strabismus, their whānau, or healthcare practitioners?" was the primary driving purpose of this innovative research practice.

Methods: Drawing upon the importance of co-design for meaningful research impact, we set out to think differently about a way of communicating findings that is meaningful. The team included science communication and physiotherapy students working together with the research team and physiotherapists, which brought perspectives of science communication, research impact, and physiotherapy research and practice. A strategy was developed to communicate a "statistically significant finding" to a wider audience that is meaningful.

Results: The activity generated a set of animation resources, infographics, activities, and events targeted at better communicating how balance systems worked in individuals and how the current research contributed new knowledge to the existing body of knowledge.

Conclusion and implications: The co-designing activity supported the development of resources for communicating specialist knowledge to a wider audience in a meaningful way. Researchers can explore alternative ways to communicate the findings for better research impact. The resources themselves will be useful in clinical practice to support people living with long-term conditions that require sensory-motor reorganisation.

BALANCE AND COORDINATION IN MYOTONIC DYSTROPHY TYPE 1

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Background: Myotonic dystrophy type 1 (DM1) is a genetic disorder affecting multiple organ systems causing progressive disability and shortened life expectancy. It is characterised by myotonia and progressive muscle weakness, primarily affecting the distal leg and arm muscles, craniofacial muscles, and neck flexors before impacting more proximal musculature. Falls are 10 times more common in DM1 than in aged-matched healthy volunteers. This has been attributed to muscle weakness, but more recently other facets of balance have been considered.

Purpose: To assess the extent of balance issues in patients with DM1 and determine which components of balance may be impaired and to what extent.

Methods: We aim to recruit 20 adult participants with DM1 who can walk 10 m independently without a walking aid. Physiotherapy assessment will include visual acuity, pinprick, light touch, vibration, proprioception, 2-point discrimination, Scale for Assessment and Rating of Ataxia (SARA), and postural sway in standing and walking using the Gait and Balance app (G&B app). Strength data for these participants is being collected in a concurrently running study. An audiologist will conduct the vestibular assessment, which includes 3D video Head Impulse Test (high velocity vestibulo-ocular reflex function) and Vestibular-Evoked Myogenic Potentials (function of the otolithic organs of the inner ear and their neural pathways). Oculomotor function (ability to accurately fixate and track a visual target) and Caloric testing (low velocity horizontal vestibulo-ocular reflex function). Descriptive statistics will determine the rates of abnormalities for each assessment.

Results: The two participants recruited so far have both shown abnormalities in their vestibulo-ocular reflexes, impaired standing balance on a compliant surface with eyes open, and closed and impaired sensation and joint position sense.

Conclusion: Conclusions will be drawn upon study completion.

Implications: Understanding the impaired systems of patients with DM1 will guide future physiotherapy practice and research.

FREQUENCY OF PAEDIATRIC RED FLAGS IDENTIFIED BY PAEDIATRIC PHYSIOTHERAPY AT ACTIVE PLUS TARANAKI

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Background: Physiotherapy is a mainstay treatment for paediatric musculoskeletal concerns; however, many serious paediatric medical conditions present with musculoskeletal symptoms. Historically, children living in Taranaki with musculoskeletal concerns were seen by physiotherapists, with limited paediatric experience, in private practice clinics. In 2022 Active Plus Taranaki started providing paediatric specific services from an experienced paediatric physiotherapist.

Purpose: This study reviews the patterns of onward referral from paediatric physiotherapy to paediatrics and ultimately the number of children diagnosed with red flags/requiring medical treatment since opening the paediatric physiotherapy services at Active Plus.

Methods: A retrospective audit of medical records between February 2022 to July 2022 and August 2023 to January 2024 (this was due to maternity leave) was completed on all patients referred to Active Plus Taranaki for paediatric assessment.

Results: A total of 34 patients were seen by the paediatric physiotherapist. Fifteen of these were referred with diagnosis from orthopaedic surgeons. Nineteen were self-referred or from general practitioners; of these 19, 6 (31.5%) were referred by the paediatric physiotherapist for further investigations (either to paediatricians, paediatric neurologists, or orthopaedic surgeons). All 6 of these children received medical diagnosis. Mild cerebral palsy (GFCS1) was the most common diagnosis with 2 patients; the remainder of patients were diagnosed with chronic recurrent multifocal osteomyelitis, Perthes disease, infantile scoliosis, thoracic spine syrinx, and structural brain abnormality.

Conclusion: Although we acknowledge the small sample size of this study, this indicates a high percentage of children presenting at physiotherapy may have underlying conditions or red flags.

Implications: Children who present at paediatric clinics via self-referral or GP referral should be assessed with the knowledge that paediatric red flags can and will present in children and these are different to adults. An understanding of local paediatric networks and referral criteria is essential to all physiotherapists working with children.

A DEDICATED LONG COVID CLINIC – THE CHRISTCHURCH EXPERIENCE

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Background: The term "Long COVID" describes those with ongoing symptomatic COVID-19 (< 12 weeks) and those with post-COVID-19 syndrome (PACS) (> 12 weeks post infection). New Zealand's unique experience of COVID-19 presents challenges in defining an accurate incidence of Long COVID locally. Observational research suggests approximately 4.0–4.5% incidence in a triple vaccinated, Omicron-focused cohort.

Purpose: PACS presents with a range of symptoms with fatigue, brain fog, breathlessness, and impaired exercise tolerance being some of the most common. Allied health input has been shown to be effective internationally in treating PACS. However, few individuals with PACS fit existing criteria for Allied Health services in Canterbury.

Methods: Funding was identified to run a 6-month MDT pilot service to support individuals with PACS. A broad range of allied health professions were involved. Input was through clinics, home visits, telehealth, and education sessions.

Results: The service opened for referrals from 1 May–9 June only due to volume of referrals and indications that funding would cease at the end of the 6-month term. Despite limited interventions for the over 100 referrals received, 60% had improved post-COVID Functional Scale scores, 58% improved Long COVID Symptom severity scores, and 81% improved in Breathing Pattern Assessment Scale scores. Participant feedback was overwhelmingly positive.

Conclusion: MDT intervention for those with PACS can be effective at improving functional, symptom severity, and breathing pattern scores. The service was well received by participants. The incidence of PACS in the Canterbury population remains unclear due to the brief period during which referrals were able to be accepted.

Implications: Individuals experiencing PACS are likely to benefit from an individualised MDT approach to managing their symptoms. With the closure of the service, many people with PACS continue to struggle to get support with managing their symptoms.

DOES MY PATIENT WITH LBP REALLY NEED IMAGING? FACTORS INFLUENCING CLINICAL DECISION-MAKING

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Background: The use of diagnostic imaging in low back pain (LBP) management is often inappropriate despite recommendations from clinical practice guidelines. There is limited understanding of factors that influence the imaging clinical decision-making process.

Purpose: The aim of this scoping review was to explore literature on factors that influence clinicians' decision to refer people with LBP for imaging. How these factors could be addressed to influence imaging referral behaviour was also considered.

Methods: A scoping review was conducted following the PRISMA-ScR guidelines using the following databases: Medline, CINAHL, EBSCO, Scopus, and Cochrane Reviews. Full-text English language peer-reviewed articles published between 2010 and February 2023 were included. Data were analysed through an inductive process to categorise the factors that influence clinical decision-making.

Results: Thirty-five studies were included in the review. A variety of clinical and non-clinical factors were found that influence imaging clinical decision-making. Three categories were developed: clinical features, non-modifiable factors, and modifiable factors. The focus was on modifiable factors, which were further divided into patient beliefs and clinician beliefs.

Conclusion: This is the first scoping review of factors that influence imaging clinical decision-making in LBP management. There are patient and clinician beliefs that could be targeted to effect a change in clinical practice.

Implications: Few studies have investigated how patient beliefs affect the decision to refer for imaging. The decision to use imaging is often perceived to be based on objective findings; this research suggests that the beliefs of both clinician and patients play a role in decision making. These beliefs are not always acknowledged and may result in inequitable and harmful overuse of imaging. Supporting clinicians to confront their beliefs and co-design strategies to improve public knowledge and clinical practice would reduce wasteful expenditure and potential clinical harm.

THE PATIENT JOURNEY THROUGH LOW BACK PAIN: A SCOPING REVIEW OF THE INTANGIBLE COSTS

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Background: Low back pain (LBP) is the leading cause of disability worldwide. For most people, episodes of acute LBP will resolve quickly; however, recurrence is common, and for some, the pain will become chronic. Low back pain research traditionally reports direct and indirect monetary costs and focuses less on the intangible costs on a person's life. The effects of LBP on activity and quality of life have been widely reported; however, the specifics of these effects remain unclear.

Purpose: Health-related low back pain costs can be direct, indirect, or intangible. The purpose of this review was to identify the intangible, non-monetary costs of LBP from the perspective of the individual.

Methods: A scoping review of literature was undertaken. Four databases were searched up to 6 March 2023. Data from the included studies were coded and analysed using directed content analysis.

Results: Forty-five studies met the inclusion criteria. Six categories were derived from the data, all of which express the experience of the person with LBP: Perceptions of Pain, Patient Experience of Healthcare, Becoming Defined by Low Back Pain, Life on Hold, My Social Self, and Disrupted Work Life.

Conclusion: This review highlights the profound effect of LBP on people's lives and their sense of self. The findings illustrate the perceptions of pain, experiences with health services, interference in daily living and work, and psychological and social disruptions.

Implications: There is a need for healthcare practitioners to recognise and validate the lived experience of people with LBP. Patients should be reassured that invisible pain does not suggest that their pain is imagined; they should experience empathy for its impact on their lives. Acknowledging the effect of pain can help to ease suffering and give their experience the legitimacy it deserves.

TOWARDS PERSONALISED ORTHOPAEDIC CARE: USER EXPERIENCE OF A SMART KNEE BRACE

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Background: Wearable technologies may offer additional benefits over current rehabilitation strategies for orthopaedic care, including remote monitoring. Best practice following knee injuries involves objective assessment to determine rehabilitation progress and functional ability. Despite the potential, no inertial sensor devices have been successfully integrated for assessing knee movement and gait in and out of clinical settings. A custom-built inertial sensor was developed and embedded into a commercially available knee brace paired with a mobile application.

Purpose: To investigate usability of the instrumented knee brace for individuals with anterior cruciate ligament reconstruction (ACLR) or meniscal injury.

Methods: In this cross-sectional study 16 participants (*M* age 28.44, *SD* 9.2 years) were fitted with the brace on their affected limb and 34 healthy participants (*M* age 26.2, *SD* 6.8 years) were fitted with the device on their dominant limb. User experience and device usability was assessed using the System Usability Scale (SUS). Participants completed a 10 m walk test and 6-minute walk test while wearing the brace.

Results: The average overall SUS score was 79.46 which is deemed as "good", and individual items were scored as relatively positive (average = 2.90). Significantly higher SUS scores were observed in participants with a knee condition (81.13) compared to healthy participants (77.38; $F = 4.23$, $p = 0.02$).

Conclusion: Overall, good usability was reported among participants. Participants did find the instrumented knee brace to be cumbersome and complex, but most also reported they would use the device frequently. The device was rated higher by those with a knee condition, suggesting individuals affected by health conditions may view wearables more positively than healthy individuals.

Implications: The findings highlight the opportunity of using wearable technologies as a rehabilitation tool to collect patient-reported outcome measures and functional assessments away from the constraints of the clinic. We have yet to establish all potential end-user requirements in real-world settings, including healthcare providers.

MOTOR FUNCTION CHARACTERISTICS OF ADULTS WITH SPINAL MUSCULAR ATROPHY (SMA) IN AOTEAROA NEW ZEALAND

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Background: Spinal muscular atrophy (SMA) refers to a group of autosomal recessive neuromuscular diseases characterised by progressive degeneration of alpha motor neurons in the spinal cord and brainstem. There are 44 adults with SMA throughout Aotearoa, with an additional five residing overseas where they have access to disease modifying therapies (DMTs) that aren't accessible in Aotearoa. Importantly, many of these patients are not engaged with healthcare services.

Purpose: To describe what is already known about motor function characteristics of adults with SMA in Aotearoa and our intention to assess and support these patients prospectively.

Methods: Current data being presented is available from Pūnaha Io – New Zealand's NeuroGenetic Registry and Biobank. We have established a multi-disciplinary SMA clinic at the University of Auckland Centre for Brain Research Neurogenetics Clinic. Patients throughout Aotearoa will be supported to travel to Auckland for the clinic where they will be reviewed by a neurologist and a physiotherapist who will complete a variety of functional measures relevant to their type of SMA. The combined information will be

reported back to the patient and their GP with recommendations for management and referrals for local allied health and support services. We have developed ambulatory and non-ambulatory assessment protocols for these patients, including motor, respiratory, timed function, and patient-reported outcomes.

Results: Of the adults with SMA residing in Aotearoa, 15 have type 2, 12 have type 3A, 11 have type 3B, and 4 have adult onset. Twenty are ambulatory and 24 are full-time wheelchair users.

Conclusion: Data from the clinic will inform Pharmac of the need for reimbursement of DMTs in Aotearoa. Additionally, participants will be supported to access healthcare services.

Implications: This clinic will assist in ensuring that Aotearoa meets best practice standards of care for SMA and benefitting our participants to live well across the lifespan.