Abstracts from the Physiotherapy New Zealand Conference, held in Wellington on 5th - 6th May 2012.

Keynote Presentations

Physical activity and sedentary behaviour: How can we help people move more and sit less?

Biddle SJH

Leicester-Loughborough Lifestyle Biomedical Research Unit, School of Sport, Exercise & Health Sciences, Loughborough University, Loughborough, UK.

Email: s.j.h.biddle@lboro.ac.uk

Low levels of physical activity and high levels of sedentary behaviour (sitting) are contributing to significant public health problems in developed, and now developing, countries. The problem is clear – but the solutions are more difficult to implement. Behaviour change is required, but efforts to date have had only variable success. This presentation will overview what we know about the correlates of physical activity across the lifespan, what the evidence tells us about successful behaviour change, and what we should or can do better in the future. Moreover, with excessive levels of sitting in the workplace, at home in front of screens, in cars etc., we also need to address sedentary behaviour. This has become a major area of interest in recent years. Sedentary behaviour change may require a different approach from that associated with physical activity. For both physical activity and sedentary behaviour, change needs to tackle social, psychological and environmental factors that encourage or inhibit the behaviour of interest. The physiotherapy profession can play a major role in positive health behaviour change through addressing the dual needs of helping people move more and sit less.

Differential Diagnosis: The Best Tests and Future Opportunities

Cook C

Division of Physical Therapy, Walsh University, North Canton, OH 44720

Email: ccook@walsh.edu

In clinical practice, physical therapists use tests and measures for a probabilistic approach to clinical decision making. This decision making approach requires that the tests and measures provide tangible value and can alter the post-test probability of diagnosis or prognosis. Good tests and measures are vetted for effectiveness through rigorous methodologies. Recent evidence also dictates that selected tests should be used either early in the examination process to rule out contenders or late in the examination process to confirm hypotheses. Use of diagnostic accuracy values such as sensitivity, specificity, and positive likelihood ratios has improved our ability to discriminate tests' strengths. The focus of this pre-conference course is to provide those tests and measures and the appropriate order within an examination that improves probability of a correct diagnosis or outcome.

LEAPS trial – improving mobility post stroke

Duncan P

Wake Forest Baptist Medical Centre, Medical Center Boulevard, Winston-Salem, NC 27 157

Email: pduncan2@wakefieldhealth.edu

LEAPS is a prospective, multi-site (5 sites), randomized controlled rehabilitation trial that

has recruited 408 individuals within 45 days of their first stroke. At 2 months, persons with stroke who were ambulatory but with severe (< 0.40 m/s) to moderate (0.40 – 0.80 m/s) walking impairment were randomized into one of three walking rehabilitation groups and followed for 1 year (~7% lost to follow-up).

The intervention groups included: a specialized locomotor training program (LTP) that includes use of body weight support and a treadmill as a rehabilitation modality provided 2 months post-stroke (LTP-early), or 6 months post-stroke (LTP-late), and a non-specific, progressive home-based exercise (HEP) intervention provided 2 months post-stroke (control-comparison).

The trial was specifically designed to answer 3 clinical questions concerning physical therapy interventions for walking recovery after stroke:

1. At the end of 1 year post-stroke, is an intense, task-specific walking rehabilitation that includes a specialized locomotor training program more effective than a home-based exercise program for improving walking speed and distance?
2. Does the timing (2 months or 6 months post-stroke) of intense specialized walking rehabilitation program affect walking outcomes? How does severity (severe or moderate walking impairment) or timing post-stroke influence intervention effectiveness? For example, do individuals with severe stroke perform better if an intense walking rehabilitation program is provided later, in the 6 month time point, after stroke?
3. What is the optimal dose (12-, 24-, or 36-sessions) to achieve clinically meaningful changes in walking speed?

Thus, the purpose of this presentation is to share with the New Zealand physiotherapy community the outcomes of this major rehabilitation clinical trial and to discuss the implications of the results of this trial for the development of walking rehabilitation interventions and falls prevention for individuals with stroke.

Sensitisation in musculoskeletal pain

Graven-Nielsen T

Laboratory for Musculoskeletal Pain and Motor Control, Center for Sensory-Motor Interaction (SMI), Department of Health Science and Technology, Faculty of Medicine, Aalborg University, Denmark

Email: tgn@hst.aau.dk

Chronic and widespread musculoskeletal pain is often accompanied with hyperalgesia, referred pain, and widespread hyperalgesia. Peripheral and central sensitisation, facilitated central integration, and expansion of receptive fields have been identified in basic studies of musculoskeletal nociception; emerging evidence show that similar manifestations can be assessed in pain patients. Hyperalgesia can be explained by increased sensitivity of deep-tissue nociceptors (peripheral sensitisation) or by increased responses from dorsal horn neurons (central sensitisation). Widespread pain and hyperalgesia is probably related to increased sensitivity of central neurons (central sensitisation) and to changes in descending control from supraspinal centres. Manifestations related to the different aspects of sensitisation can be assessed quantitatively in humans by quantitative sensory tests. Pressure algometry and cuff algometry (inflation of a tourniquet) is used for assessing the pain sensitivity of deep-tissue and for detecting localised or widespread hyperalgesia in pain patients. Repeated pressure stimulation evaluates the degree of temporal summation of deep-tissue pain which is a proxy for the level of central sensitisation and is facilitated in pain patients. Expanded referred pain area is another biomarker reflecting central sensitisation in pain patients. Pressure algometry assessed during experimental pain is useful for assessing the descending control where a shift between inhibition and facilitation is likely in chronic musculoskeletal pain. Central sensitisation has been detected with the above biomarkers in chronic musculoskeletal pain patients e.g. osteoarthritis, low back pain, and myofascial pain. The transition of acute musculoskeletal pain into chronic pain may be related to the progression of peripheral and central sensitisation.

Invited speakers

Inspiratory muscle training across the subdisciplines of physiotherapy

Elkins MR

Royal Prince Alfred Hospital, Sydney, Australia

Email: mark.elkins@sydney.edu.au

Inspiratory muscle training (IMT) is the application of a specific training load to the inspiratory muscles with the goal of inducing a training adaptation. Although IMT can be applied in several ways, a simple threshold resistance device applied via a mouthpiece is usually recommended because it avoids the need for complex rebreathing circuitry and it does not allow the patient to ease the training load by reducing their inspiratory flow. However, alternative methods (respiratory biofeedback, abdominal weights) are effective in some patient groups. IMT follows the same principles as other types of training, including specificity, progressive overload, recovery and reversibility. Control of learning effects is also important in assessing the effect of training on respiratory muscle performance. A survey of the Physiotherapy Evidence Database (www.pedro.org.au) shows that IMT is beneficial in certain patient groups. In healthy people, IMT reduces ventilation and dyspnoea at isoexercise on a progressive exercise test, which tends to extend the time to fatigue. In trained rowers, cyclists and swimmers, IMT improves time trial results. In people with complete cervical spinal cord injury, IMT improves ventilatory capacity, respiratory endurance and dyspnoea. In high-risk orthopaedic/abdominal/cardiac surgery patients, pre-operative IMT significantly reduces post-operative pulmonary complications and length of stay. In people with asthma, IMT can reduce the use of beta-agonist medication. IMT improves exercise capacity and quality of life in people with stroke and in people with chronic obstructive pulmonary disease. Other diseases in which respiratory muscle training is beneficial include several adult and paediatric neuromuscular diseases, renal failure, bronchiectasis and cystic fibrosis.

Smoking Cessation - What is happening in New Zealand?

Evison K
Tobacco Control Programme, Ministry of Health, Wellington
Email: Karen_Evison@moh.govt.nz

Smoking cessation is a life-saving intervention. More smokers are making more attempts to quit thanks, in large part, to the advice they are receiving in hospitals and general practice. Encouraging smokers to use treatments (behavioural and pharmacological) increases their chances to stop smoking for good. Hospitals and primary care has been actively involved in helping people who smoke to stop by using the ABC approach (Ask, Brief advice, Cessation support) which systematises the key steps needed to prompt quit attempts and enhance smoking cessation outcomes. This has been most publically reported as the Better Help for Smokers to Quit Health Target. This presentation will provide an update on the effect of brief advice and offer of treatment provided by healthcare professionals and clinical management for smokers who want to quit, including evidence-based pharmacotherapy and behavioural support. It will also provide key messages about tobacco use and smoking cessation. The session will also cover outreach approaches that work and using hospital discharge information to your advantage should you be working in a primary care setting.

Expanding the Horizons of the Physiotherapist's Role in Fall Prevention

Hale L
School of Physiotherapy, University of Otago, Dunedin
Email: leigh.hale@otago.ac.nz

The purpose of this invited presentation is to explore the expanding role of physiotherapists in fall prevention, a role beyond that of merely teaching fall prevention exercises. The presentation will provide an overview of current evidence for exercise-based fall prevention programmes for older adults and for disabled adults. The paper will debate the sustainability of such programmes. It draws on the findings of our qualitative research that provide insight on factors that encourage long-term adherence to exercise and the social capital gained in the community networks formed beyond the exercise intervention. The talk will also draw on the findings of three recent fall prevention trials that the author and colleagues have undertaken, studies investigating the effectiveness of Tai Chi, water-based exercise and peer-led exercise groups to reduce fall risk in older adults. These studies' findings provide pause for reflection as to whether *what you do* (in the form of a fall prevention exercise-based activity) is as important as the fact *that you actually do* something physically active. Moreover, that doing something physically active long term requires the development of self-efficacy and social networks and that physiotherapy plays an importance role in this. The knowledge gained from our research guided the development of a fall prevention exercise programme for people with intellectual disability, which is presently being evaluated, and which this discourse will explain.

Imaging in Physiotherapy

Hing W
Bond University, Queensland, Australia
Email: whing@bond.edu.au

Medical Imaging plays a major role in physiotherapy practice. With respect to referral, physiotherapists in Australasia have referred for specific types of imaging in their role as a primary provider for quite some time. Physiotherapists often ask for imaging to assist and confirm their diagnoses and treatment options or clarify their decision to treat or refer. Developments worldwide have also lead to physiotherapists extending their referral and scope of practice boundaries. As a result of having the responsibility to refer a patient for imaging the need to appreciate imaging findings and technology are paramount. There are a number of types of imaging available, all with their particular use and value. Some have greater relevance to physiotherapy while others less. It is in the interest of the profession to assess and understand the various imaging options. One of the most common imaging methods familiar to physiotherapy is diagnostic ultrasound imaging. Diagnostic ultrasound imaging has grown in popularity and currently is recognised as the imaging modality of choice for a shoulder injury/pathology. From an alternate imaging appreciation ultrasound imaging has gained in popularity and developed into a 'new and novel' tool for physiotherapists. Rehabilitation USI has been established and recognised consisting of biofeedback, identification of anatomy, exercise education, dynamic assessment and injection guidance to name a few key uses. Regarding the scope of practice of musculoskeletal physiotherapy, in relation to scanning, we must assess and recognise the ability of a physiotherapist. A physiotherapist's depth of knowledge in areas such as anatomy, physiology, pathology, coupled with their ability to assess, clinically reason and diagnose musculoskeletal pathology strongly support the rationale that they should also be able to scan for diagnostic purposes. Diagnostic ultrasound scanning training has been taught with a focus on obstetrics and general scanning, with little to no time spent on musculoskeletal scanning. However there are now a number of musculoskeletal imaging training and qualifications offered at a postgraduate level worldwide for physiotherapists. This is exciting and valuable for the physiotherapy profession.

Developing solutions: Research-based evidence to reduce inequalities

Howden-Chapman P

Department of Public Health, University of Otago, Wellington

Email: philippa.howden-chapman@otago.ac.nz

Growing inequalities in income and wealth have a corrosive effect on health. Causal evidence from our community-based trials on retrofitted insulation, sustainable heating, mitigating home hazards, providing heating subsidies and increasing the uptake of walking and cycling highlight that we can adopt public policies that can improve the health of more vulnerable members of society.

Biomechanical Basis for Conservative Treatment of Patellofemoral Disorders

Powers CM

University of Southern California, Los Angeles, California, USA

Email: powers@usc.edu

Patellofemoral pain is the most common lower extremity condition seen in orthopaedic practice. Despite its high prevalence however, treatment approaches remain highly variable and often lack scientific backing. One reason for the lack of consistency in managing patellofemoral joint problems is related to the fact that the pathomechanics of this disorder remain poorly understood. Over the past 15 years, our group has taken a multidisciplinary approach to better understand the root cause(s) of patellofemoral dysfunction. In particular, recent publications from our lab suggest that atypical movements resulting from poor proximal control may underlie the development of patellofemoral pain and perhaps cartilage pathology. The purpose of this session is to highlight recent research in the areas of biomechanical evaluation, dynamic imaging, and computational modeling that has lead to a better understanding of this multifaceted clinical problem.

Physiotherapy following major surgery – the state of the ark

Reeve J C

School of Physiotherapy, AUT University, Auckland

Email: julie.reeve@aut.ac.nz

Postoperative complications are known to increase overall health care costs with postoperative pulmonary complications (PPCs) being a major contributor to increased intensive care and hospital length of stay (LOS) and use of resources. Over the past two decades, widespread developments in postoperative management and fast track postoperative rehabilitation protocols have led to a reduction in morbidity and mortality following major surgery and faster discharge from hospital. Physiotherapy has been considered an essential component of perioperative care to minimise the adverse effects of anaesthesia and surgery on the respiratory, cardiovascular and musculoskeletal systems. Despite being routinely utilised in the prevention and amelioration of postoperative complications since the 1960s, physiotherapy practice has remained relatively unchanged. The increasing emphasis on cost-effective provision of healthcare and the focus on evidence-based practice have challenged physiotherapists to examine their traditional practices and the number of high quality studies investigating physiotherapy interventions in major surgical populations has been increasing. These studies have led to increasing debate about the effectiveness of physiotherapy interventions in preventing and treating postoperative complications. Key questions include: do physiotherapy interventions reduce the incidence of postoperative complications and improve recovery (and rate of recovery) from major surgery? This presentation will review the evidence to date and address what constitutes current physiotherapy practice in patients undergoing major surgery and the evidence to support these practices. The presentation will make recommendations for changes to clinical practice based on the evidence to date and will consider future research directions in this area.

Women's health matters for all physiotherapists

Sherburn M,

Physiotherapy Department, The University of Melbourne, Australia

Email: m.sherburn@unimelb.edu.au

Women's health physiotherapy practice is changing, with research evidence driving the changes. Research is most effective when it addresses a condition that is common, that causes disruption to the patient's quality of life, and is relatively simple to make changes to that condition. Pelvic floor dysfunctions such as incontinence and prolapse, are conditions that fit all these criteria. The results of recent research into these conditions will be presented. This presentation will then address how our management of pelvic floor dysfunctions is changing due to our better understanding of the causes of each of these dysfunctions, the clinical conditions themselves, and the consequences of these dysfunctions. New technology is also driving change. Ultrasound imaging has improved our understanding of the anatomical changes occurring in incontinence and prolapse, thus increasing our understanding of the cause and consequences of each condition, leading to changes in our physiotherapy management. Pelvic pain conditions will be explored as an area of intensive research, but with less successful outcomes. Pelvic pain is common, causes extreme disruption to a patient's quality of life, but the condition is less mutable to change. The consequence of this is that non-evidence based treatment techniques have emerged,

as patient's seize on anything that will alleviate their distress. Physiotherapists play an ever expanding role in the management of pelvic dysfunctions as research supports our interventions. As a profession, we need to look to expanding our scope of practice in this area, particularly in establishing primary contact positions within public health.

Equity and health

Simmonds S

Eru Pomare Māori Health Research Centre

Otago University, Wellington

Email: Shirley.simmonds@otago.ac.nz

There is a growing body of evidence of unequal treatment by ethnicity within health systems. Reducing inequalities in health outcomes, especially inequalities between Māori and non-Māori, is a high level goal of the New Zealand health sector, and contributes to fulfilling the right to health for all.

This presentation will follow the process of a research project that explores unequal treatment in the New Zealand health system, and how it contributes to Māori and non-Māori disparities in ischaemic heart disease. The project utilised both quantitative and qualitative research methodologies.

It will raise questions and issues that clinicians and practitioners will no doubt confront at sometime during their career in New Zealand. It is hoped that this presentation will provide some insight into how disparities may be generated and maintained within the health system, and discuss the role we can play in achieving equity.

Moving Physiotherapy forward – which direction do we take?

Skinner M A.

School of Physiotherapy, University of Otago, Dunedin

Email: margot.skinner@otago.ac.nz

The Executive of the World Confederation for Physical Therapy (WCPT) developed its strategic plan for 2011-2015 with regard to participation in and engagement with the World Health Organisation (WHO) and other UN related agencies as well as engagement with the 108 Member Organisations. WCPT's vision is *to move physical therapy forward so the profession is recognised globally for its significant role in improving health and well-being*. Success in achieving its goals will be dependent on accountability and excellence in governance as well as outcomes from research informed collaborations at an international and national level. The key issues identified by the WHO for improving global health include the need to address the epidemic of non-communicable diseases, inequitable access to healthcare, health policies that are not well-informed by research evidence, a lack of health workers in rural communities and an aging health workforce. These issues are also identified in WCPT's strategic plan and fit within the New Zealand context, but how well is the physiotherapy profession doing here and in which direction do we need to focus our research, education and collaborations? The presentation will discuss ways to move physiotherapy forward in New Zealand and provide evidence in support of initiatives such as inter-professional education for health professionals, new models for pre-entry physiotherapy education, embracing diversity in the profession and methods of engaging clients in our services.

Free papers

Exercise therapy, manual therapy, or both, for management of osteoarthritis of the hip or knee: The MOA Trial

Abbott JH[1], Robertson MC[2], Wright AA[3], Chapple C[1], Pinto D[4], Leon de la Barra S[5], Baxter GD[5], Theis J-C[1], Campbell AJ[2], and the MOA Trial Team

[1]Centre for Musculoskeletal Outcomes Research, Dunedin School of Medicine, University of Otago; [2]Dept of Medicine, University of Otago; [3]High Point University, High Point, NC, USA; [4]Northwestern University, Chicago, USA; [5]Centre for Physiotherapy Research, University of Otago.

E-mail: haxby.abbott@otago.ac.nz

There is evidence supporting the effectiveness of both exercise therapy and manual therapy for hip and knee osteoarthritis (OA), but their use alone or in combination has not been compared against usual medical care. In this 2x2 factorial randomised controlled trial, adults meeting the American College of Rheumatology criteria for hip or knee OA were randomly allocated to either: (a) exercise therapy; (b) manual therapy; (c) both exercise therapy and manual therapy; or (d) usual medical care only. The Western Ontario and McMaster (WOMAC) osteoarthritis index (a scale of 0 to 240) and physical performance measures were assessed, blind to group allocation. Of 206 participants recruited, 193 (93.2%) were retained at follow-up. Intention-to-treat analysis showed reductions in WOMAC scores at one year compared with the usual care group of 28.5 (95% confidence interval 9.2 to 47.8) for manual therapy alone, 16.4 (-3.2 to 35.9) for exercise therapy alone, and 14.5 (-5.2 to 34.1) for combined exercise therapy and manual therapy. Among participants who did not have joint replacement surgery during the trial, mean reductions in WOMAC score compared with the usual care group were 31.9 (16.2 to 47.7) for manual therapy alone, 16.3 (0.3 to 32.2) for exercise therapy alone, and 18.9 (2.7 to 35.2) for combined therapy. There was an antagonistic interaction between exercise therapy and manual therapy (P=0.027). Physical performance test outcomes favoured the exercise therapy group. Both exercise physiotherapy and manual physiotherapy provided incremental benefit over usual care alone, which was sustained to one year follow-up.

Economic evaluation of the MOA Trial: exercise therapy and/or manual therapy for management of osteoarthritis of the hip or knee

Abbott JH[1], Pinto D[2], Robertson MC[3],Hansen P[4], Campbell AJ[3], and the MOA Trial Team

[1]Centre for Musculoskeletal Outcomes Research, Dunedin School of Medicine, University of Otago; [2]Northwestern University, Chicago, USA; [3]Dept of Medicine, University of Otago; [4]Economics Dept, University of Otago.

E-mail: haxby.abbott@otago.ac.nz

Conservative interventions are recommended as first line treatments for osteoarthritis (OA), however few economic studies have assessed their value for money. We conducted a cost-utility analysis alongside the Management of Osteoarthritis (MOA) Trial. Participants (n=206) were randomised to either: (a) supervised multi-modal exercise therapy; (b) individualised manual therapy; (c) both exercise therapy and manual therapy; or (d) usual medical care only. The main outcome measures of the cost-utility analysis were health care and societal costs (presented in 2009 NZD) and quality adjusted life years (QALY) at 12 months. Incremental cost effectiveness ratios (ICER) and 95% CIs and cost-effectiveness acceptability curves were reported. All three treatment groups resulted in mean QALY gains relative to usual care. Manual therapy was cost saving relative to usual care from the societal perspective. Exercise therapy resulted in incremental cost utility ratios regarded as cost effective but was not cost saving. From the perspective of the New Zealand health system, exercise therapy was the only treatment to result in an ICER under 2 times gross domestic product (GDP) per capita at $44 058 (–70 885 to 194 558). Based on willingness-to-pay thresholds of 2 and 3 times GDP per capita, the probability that exercise therapy was cost effective was 61% and 79%, increasing to 74% and 87% for participants who did not receive joint replacement therapy during the trial. Combined therapy dominated usual care for this subgroup from the societal perspective, but it was not cost effective from the New Zealand health system perspective.

Comparison of Nordic and ordinary walking for Parkinson's disease: A single case design

Bassett SF, Stewart JJ and Giddings LS.

Faculty of Health and Environmental Sciences, AUT University, Auckland.

Email: sandra.bassett@aut.ac.nz

This single case design tested the feasibility of protocols for a larger mixed methods investigation of the effect of Nordic and ordinary walking on physical function and wellbeing in people with Parkinson's disease. The single case design consisted of five six week phases (ABACA); A = baseline/washout, B = ordinary walking, C = Nordic walking. A 64 year old female with an 11 year history of Parkinson's disease participated. Physical function was measured weekly using the six minute walk test, timed up and go, and 10 metre walk test. The Parkinson's Disease Questionnaire (PDQ-39) was answered at the beginning of the study and end of each phase. At the end of the study the participant was interviewed about her experiences of the two types of walking and their effect on her wellbeing. Physical function data were graphed and analysed using repeated measures analysis of variance. Transcribed interview data were analysed using content analysis. The only significant difference for physical function was between PDQ-39 mobility scores at the end of Nordic walking and its washout phase, with the latter scores indicating greater mobility. Interview content analysis revealed the participant considered Nordic walking more beneficial than ordinary walking. During Nordic walking she felt more stable, did not have to focus on walking and her step length increased. She also reported coping better with daily activities and general health improvement. While this study provides a broad insight into the effects of Nordic walking, future research should include physiological measures.

Does the Physiotherapy Board have the regulatory bar in the right place?

Beggs S[1] and Grbin M[2]

[1]Chief Executive of the Physiotherapy Board of New Zealand

[2] Chairperson of the Physiotherapy Board of New Zealand.

Email: m.grbin@physioboard.org.nz

The Physiotherapy Board is the responsible authority, appointed under the Health Practitioners Competence Assurance Act 2003, to protect the health and safety of New Zealanders by regulating physiotherapists. The legislation authorises the Physiotherapy Board to establish mechanisms to ensure physiotherapists are competent and fit to practise. In taking on this responsibility on behalf of the Minister of Health, the Board is aware of the need to keep a balance. If the Board under regulates physiotherapists, the public may be at risk of harm or lose confidence in the profession as safe and effective health providers. If too much regulation is imposed, the autonomous nature of physiotherapy practice may be eroded and unnecessary work is required for no added value. The Board has been operationalizing the Act since 2004 and its current regulatory mechanisms are well established. The outcomes from the Board's regulatory programmes and the evidence of severity of harm from physiotherapists are the indicators which demonstrate whether the Board has the regulatory bar in the right place. The outcomes from the past three years show the registration process has declined <1% of overseas applicants. The recertification programme has identified one participant in three years who has not demonstrated satisfactory ongoing professional development. The complaints and incidents process reviewed 48 concerns in the three year period that related to Physiotherapy practice. This represents 1.1% of practising physiotherapists. The level of patient harm from complaints was categorised using a Risk impact Score. Patient harm was insignificant to minor and the risk to reputation of the profession minor. These results suggest there is low likelihood of public of harm from physiotherapy practice however this process identified gaps in the information the Board receives related to public harm.

Measuring levels of physical activity in individuals with severe disability living in residential care: an observational study

Buick AR, Crouchley M, Harrington K, Rasheed A, Reid J and Mulligan HF

University of Otago, Dunedin,

Email: ameliabuick@hotmail.com

Physical activity is promoted and encouraged for all of the population. Despite this, persons with disability are less physically active than the able-bodied population, with consequent impact on their overall health and well-being. This observational study aimed to investigate the levels of physical activity of people with physical disabilities who live in residential care. We used the behavioural mapping technique to record time, location and companionship during the day's activities of 21 participants (eight females, 13 males; mean age: 61.55 years) who volunteered for the study. Observations occurred at ten minute intervals for ten hours a day, across three days. Activities observed were classified into Metabolic Equivalent of Task (MET) categories. Functional ability was classified using the Functional Independence Measure and Functional Assessment Measure (FIM-FAM). The study demonstrated that the participants spent significant amounts of time (50.1%) alone in their bedrooms. In addition, the majority of participants' time (79.9%) was spent in activities requiring less than 1.5 METs. Interestingly, no statistically significant relationship was found between the FIM-FAM score and average MET score. Overall, the majority of participants' time was spent alone, performing little physical activity. Our findings suggest that facilities catering for individuals with physical disabilities need to identify ways to increase participation in physical activity for their residents.

Early use of thrust manipulation versus non-thrust manipulation: a randomized clinical trial

Cook C[1], Showalter C[2], Kabbaz V[3], Learman K[4] and O'Halloran B[5]

[1]Division of Physical Therapy, Walsh University, North Canton, OH, USA; [2], Maitland Australian Physiotherapy Seminars, Cutchogue, NY, USA; [3]Australian Manual Physical Therapy Madison, WI 53716; [4]Youngstown State University, Youngstown OH, USA; [5]Pain Relief and Physical Therapy, Havertown, PA, 19083, USA

One study exists that has compared the outcomes of thrust versus non-thrust manipulation in patients with low back pain (LBP). That study reported that the outcomes of thrust manipulation were much better than those that used non-thrust manipulation, but the study used a non-thrust technique that was markedly different than what is typically performed during clinical practice. The purpose of this study was to investigate the comparative benefit of early thrust or non-thrust manipulation. The study was a single blinded, randomized clinical trial, that involved 93 patients, 18 years of age or older, with mechanically reproducible LBP with no signs of red flags or nerve-root involvement. After randomization, patients received either thrust or non-thrust manipulation and a standardized home exercise program from physiotherapists with advanced training in manual therapy. After the first two visits, the physiotherapists were allowed to perform any treatment procedure they felt would be beneficial for the patient in addition to manual therapy. Pain, perceived recovery, function, totals visits, and total days of care were the outcomes assessed. A two-way ANCOVA (which controlled for patient expectations and clinician personal equipoise) was used as the analysis tool. There were no significant differences in the thrust and non-thrust groups baseline characteristics ($p>0.05$) or for any of the five outcomes measures ($p>0.05$). The study demonstrates that early use of thrust or non-thrust results in similar outcomes, thus for clinicians who either lack specific trust training or are not allowed by licensing requirements to use thrust, non-thrust manipulation appears to be a useful alternative.

What factors are associated with a successful outcome in patients with low back pain who receive a manual therapy approach?

Cook C[1], Showalter C[2], Kabbaz V[3], Learman K[4] and O'Halloran B[5].

[1]Walsh University, North Canton, OH, USA; [2]Maitland Australian Physiotherapy Seminars, Cutchogue, NY, USA; [3]Physical Therapist, Australian Manual Physical Therapy Madison, WI 53716; [4]Youngstown State University, Youngstown OH, USA; [5]Pain Relief and Physical Therapy, Havertown, PA, 19083, USA

Email: ccook@walsh.edu

Identifying prescriptive treatment selections using single-arm analyses is not recommended when developing decision rules. Rather than influences from prescriptive treatment, findings of associations could be purely related to prognosis. Recently, many clinical decision rules have been created with this erroneous assumption. Nevertheless, identifying which factors are associated with a successful outcome may still have selected clinical utility in terms of understanding the likely prognosis of a patient. The purpose of this study was to identify whether selected characteristics were associated with good prognosis (50% change or greater in Oswestry Disability Index [ODI]). Data from 93 patients from a randomized controlled trial that involved two arms of manual therapy intervention (thrust and non-thrust manipulation) were pooled. A multivariate logistic regression analysis was used to identify prognostic factors among the baseline characteristics of duration of symptoms, irritability, pain score, fear avoidance score, ODI score, met a clinical prediction rule (CPR) for thrust manipulation, and between-session changes (which involved a change from baseline to follow up). Significant prognostic variables included less than 20 weeks, duration of symptoms (OR=14.1; 95%CI=2.8-70.4), positive between-session change (OR=9.4; 95%CI=1.8-49.9), met CPR (OR=3.3; 95%CI=1.1-9.7), and a negative finding of irritability (OR=2.7; 95%CI=1.0-7.1). The most compelling prognostic variable was duration of symptoms followed by a positive between-session change. The CPR for thrust manipulation was prognostic suggesting meeting the rule leads to a positive outcome even when thrust and non-thrust subjects were combined in one group. Future studies need to determine whether the findings are prescriptive *and* prognostic.

Physiotherapy - an integral part of the interdisciplinary team in a 'high needs' primary health centre

Doesburg S

Physiotherapy Professional Leader, Hutt Valley District Health Board

Email: Sue.Doesburg@huttvalleydhb.govt.nz

Physiotherapy is an established component of the New Zealand healthcare sector delivering services within the District Health Board (DHB) structure as well as in private clinics in community settings. Public funded physiotherapy services are still predominantly based in secondary care facilities despite the Primary Health Care Strategy (PHCS) vision for a multi-disciplinary team (MDT) of primary health professionals meeting the complex and varied needs of their community. Funding from the PHCS Innovations Fund supported the piloting of a DHB-employed physiotherapist in a primary health centre in a low socioeconomic area of the Hutt Valley (HV) fulfilling the HVDHB strategic goals of improving integration of primary and secondary health services and reducing health inequalities for high needs groups.

A small qualitative research project involved the collection of interview data from the physiotherapist, the practice manager and two general practitioners. The health professionals were asked to describe their experience of the first 6 months, with particular emphasis on the challenges and successes of the pilot. Using a phenomenological approach to determine participant perspectives five themes were identified through data analysis of the interviews: Challenges (of High Needs Populations), Access, Team Communication, Learning and Efficient Seamless Care. The results demonstrated that access to physiotherapy services for the enrolled population of the health centre was improved and changes in practice and improved job satisfaction for health professionals working with a high needs population were also noted.

Comparison of different neural mobilisation exercises upon longitudinal sciatic nerve movement: an in-vivo study utilising ultrasound imaging

Ellis RF, Hing WA and McNair PJ

Health & Rehabilitation Research Institute, School of Rehabilitation and Occupation Studies, Faculty of Health and Environmental Studies, AUT University, Auckland.

Email: richard.ellis@aut.ac.nz

Neural mobilisation has been advocated for conditions where peripheral nerve movement is thought to be compromised. Recent cadaveric and in-vivo research has concluded that median nerve excursion differs significantly between different types of neural mobilisation exercises. Clinically it is important to understand the mechanical influence upon the peripheral nervous system when prescribing neural mobilisation. A controlled laboratory study using single-group, within-subject comparisons was conducted to determine whether different types of neural mobilisation exercises are associated with differing amounts of longitudinal sciatic nerve excursion. High-resolution ultrasound imaging and frame-by-frame cross-correlation analysis was utilised to assess longitudinal sciatic nerve excursion at the posterior mid-thigh. Four different neural mobilisation exercises were examined in thirty-one healthy participants. A repeated-measures analysis of variance and isolated means comparisons were used to analyse the data. The findings of this study concluded that different neural mobilisation exercises induced significantly different amounts of sciatic nerve excursion ($p<0.001$). The two-ended slider was associated with the largest sciatic nerve excursion (3.2 ± 2.0mm) and was significantly greater ($p<0.02$) than seen with a one-ended slider (2.6 ± 1.4mm; $p<0.02$) and a tensioner (2.6 ± 1.5mm). These findings support those seen in previous research which has examined median nerve excursion associated with different neural mobilisation exercises. Appreciation of the varied mechanical influence imposed upon the nervous system will allow the prescription of neural mobilisation exercises to be more specific in respect to the magnitude of nerve movement that is optimal for a given pathology.

Identifying the sequence of sciatic nerve excursion during different neural mobilisation exercises: an in-vivo study utilising ultrasound imaging

Ellis RF, Hing WA and McNair PJ

Health & Rehabilitation Research Institute, School of Rehabilitation and Occupation Studies, Faculty of Health and Environmental Studies, AUT University, Auckland.

Email: richard.ellis@aut.ac.nz

Research suggests that peripheral nerves exhibit a sigmoidal sequence of excursion during limb movements. Initially slack is taken up before nerve excursion occurs followed by a period of elongation. Knowledge of such a sequence during neural mobilisation exercises will enhance their design to maximise nerve excursion. A controlled laboratory study using single-group, within-subject comparisons was conducted to determine whether the sciatic nerve exhibits a sigmoidal sequence of excursion *in-vivo* during different types of neural mobilisation exercises. High-resolution ultrasound imaging of sciatic nerve excursion was synchronised with cervical and knee joint range of movement data during the performance of three different neural mobilisation exercises in thirty healthy participants. A sigmoidal sequence of nerve excursion was identified for the two-ended slump slider and slump tensioner exercises but not the one-ended slump slider. A significant difference in regard to the point of greatest nerve excursion was seen between all exercises, once 73-80% of each exercise had been completed (during a three second exercise period), ($p<0.05$). These findings support previous cadaveric research that sciatic nerve excursion exhibits a sigmoidal sequence during a two-ended slump slider and slump tensioner neural mobilisation exercises. Appreciation of the sequence of nerve excursion during different neural mobilisation exercises will enhance their prescription for conditions where nerve excursion is compromised.

An investigation into the amount of PEP produced by a modified syringe

Cho T[1], Coulthard J[1], Lansdown S[1] and Ferdinand S[2]

[1]Year 4 undergraduate Physiotherapy student University of Otago. [2]Professional Practice Fellow University of Otago

Email: sandy.ferdinand@otago.ac.nz

Positive expiratory pressure (PEP) devices are commonly used to aid in the clearance of secretions from the lungs. Most devices are designed to produce 10-20cmH_2O during mid-expiration. Many of these devices are expensive to use when trialling their suitability in a patient situation. A laboratory based study was designed to test the amount of PEP generated by seven modified 10ml disposable syringes. These were cut to produce outflow diameters ranging from 2.3-3.3mm. Gas flow was generated with 100%O_2 source gas passed through a high rate flow meter. Flow rates ranging from12.1L/min-28.3L/min were passed through the syringe and PEP values recorded from a manometer in the circuit. This study showed that a modified syringe with an outflow diameter of between 2.3-2.7mm was able to produce PEP values between 12.5-22.5cm H_2O with a flow rate of 19.6L/min. Syringes with an outflow diameter of above 2.7mm were unable to produce PEP values above 6.5cm H_2O under the same laboratory conditions. Based on these findings the 10ml syringe may be viable for use in a clinical population, but the point at which the syringe is cut is crucial to obtain a PEP value within a therapeutic range.The information will be of use to physiotherapists working in the respiratory care setting and may provide a more cost effective PEP device.

Quantification of biplanar wrist motion: An observational case series in a real time call centre environment.

Ferdinand S, Johnson GM and Carman A

Centre for Physiotherapy Research, School of Physiotherapy, University of Otago, Dunedin

The call centre setting offers an opportunity to observe workers undertaking a similar work task within the same environment. The primary objective for this study was to quantify biplanar wrist range of movement in call centre operators (n=4) undertaking a mouse dominant task in a real- time work situation. Biplanar wrist posture was quantified for each participant using a biaxial electrogoniometer which was secured to the dorsal aspect of the working hand for duration of 30 minutes. Biplanar wrist postures (degrees) were calculated for flexion /extension and radial/ulnar deviation angles by the median position (50th percentile) and the extreme positions (10th, 90th percentiles). Range of movement was calculated as the difference between the 10th and 90th percentiles. The

results showed the median angle for participants represented an extended wrist position ranging from 10.17 - 32.45degrees. Different patterns of biplanar wrist motion were identified with two of the four participants assuming a median working wrist posture of 14.4, 13.05 degrees of ulnar deviation respectively. In contrast the remaining two participants adopted a median working wrist posture of radial deviation with values of 4.14 and .54 degrees respectively. The objective measurement of biplanar wrist motion in a real time call centre provides new insight into the individual nature of patterns of movement adopted by the human wrist particularly with respect to the relative amounts of radial and ulnar deviation that takes place whilst undertaking a mouse dominant task. These differences suggest that evaluation at the worksite is important to identify individual variation.

The professional development and educational potential of Health Practitioners Disciplinary Tribunal cases

Godbold R and Lees A

Lecturers in Health Care Ethics, Faculty of Health and Environmental Sciences, AUT University, Auckland

Email: amandab.lees@aut.ac.nz

The regulation of registered health professionals in New Zealand was transformed when the Health Practitioners Competence Assurance Act 2003 repealed eleven regulatory statutes including the Physiotherapy Act 1949 creating one regulatory framework. An important feature of the Act was the creation of a single disciplinary tribunal to hear and determine disciplinary charges from what are now 20 registered health professions. The Tribunal can cancel or suspend a physiotherapist's registration, require a guilty physiotherapist to pay a fine up to $30,000 and is made up of a chair, who is a barrister or solicitor, a lay person and three professional peers. So far, just 5 cases considering misconduct by physiotherapists have been heard by the Tribunal and reflect ethically challenging issues in physiotherapy: 2 relate to ACC fraud and 3 overstepping professional boundaries. All cases resulted in a guilty finding. This presentation uses the most recent physiotherapy case heard by the Tribunal to demonstrate how the published case reports offer considerable professional development and educational potential. The case highlights several important factors relevant to physiotherapy practice, particularly in relation to professional boundaries and text messaging. Texting can reap advantages for both patients and health practitioners, but this case highlights how the current lack of professional guidance on when texting is inappropriate is problematic. Given the findings of this case and expanding use of mobile technologies to enhance practice it is incumbent on the profession to explore current perceptions and set clear guidelines on appropriate use of text messaging in physiotherapy practice.

Total knee arthroplasty: strength and activation of the quadriceps and post operative function: a review

Harman B.

School of Rehabilitation and Occupational Studies, AUT University, Auckland.

Email: bronwyn.harman@aut.ac.nz

The ageing population in New Zealand will continue to increase the demand for total knee arthroplasty (TKA) and yet few guidelines have been developed for the post operative rehabilitation following TKA. Impairment in quadriceps strength (QS) has been identified as a possible cause of ongoing loss of function after TKA surgery. Reduced QS is usually associated with muscle atrophy however impairment of voluntary activation of the quadriceps should also be considered when assessing QS. The purpose of this paper is to provide a systematic review of papers that have assessed QS and voluntary activation following TKA and secondarily to review studies that have assessed post operative function in relation to strength. Electronic data bases were searched (Cumulative Index to Nursing and Allied Health Literature, MEDLINE, SPORT Discus via EBSCO, AMED via OVID and SCOPUS) using the search terms " knee arthroplasty", "knee replacement", "quadriceps strength", "function" and "outcome". Eighteen articles were identified and the methodological quality of the studies was assessed using the Downs and Black quality index. The results showed QS is markedly reduced in the early post operative phase which is in part related to a loss of voluntary activation. This early loss of QS impacts on function however QS improves one year post operatively to between 87-91% of the non operated leg.

Expanding our viewpoint on exercise - an analysis of ACC physiotherapy exercise-related injury claims.

Johnson GM[1], Skinner MA[1] and Stephen R[2]

[1]Centre for Physiotherapy Research, School of Physiotherapy, University of Otago, Dunedin

[2]School of Physiotherapy, University of Otago, Dunedin

The Accident Compensation Corporation (ACC) provides comprehensive, no-fault personal injury cover including injuries resulting from treatment but the patterns of claims arising from physiotherapy treatment have not been examined since the implementation of this compensation category in 2005. This study aims to describe the prevalence and nature of ACC claims for physiotherapy treatment injuries directly attributed to exercise. A retrospective, descriptive study in which de-identified data for all physiotherapy treatment injuries (n=278) accepted by ACC from 2005- 2010 was undertaken. Treatment injuries were ranked according to frequency of accepted claims

for each ACC treatment category. Level of harm, based on the ACC criteria for consequence of treatment injury events, and types of exercise treatment injuries were tabulated. Exercise injuries were categorized according to anatomical location, relationship to body part for which initial physiotherapy referral was made and level of physiotherapy supervision. Reliability of data categories was assessed by Kappa scores. The results showed that the highest number of accepted claims was in the exercise treatment category (31.6 %, n=88) followed by manual therapy (13.3%, n=37). Of the exercise treatment injuries, 58.1% (n= 31) were sprains/strains with 38.6% (n=34) affecting the lower limb. Forty two (47.7 %) exercise injuries occurred within a therapeutic setting not necessarily directly supervised. Forty nine (55.7%) exercise injuries were not directly related to the body part for which initial treatment referral was made. These results emphasize the need for careful consideration to manage risk of harm, in particular the level of supervision required when prescribing exercise.

Quantifying needle placement for a specific acupuncture point with respect to De qi

Keith KGM and Johnson GM

Centre for Physiotherapy Research, School of Physiotherapy, University of Otago, Dunedin

The aim of this cross-sectional study was to quantify the perceived depth of the *de qi* sensation at the acupuncture point Gall Bladder 34 using digital ultrasound imaging and a novel manual measurement. Ethical consent was gained from a local human ethics committee. Methods: Healthy subjects (n=21) were recruited from a tertiary learning institute. A fine filiform needle was inserted into the acupuncture point Gallbladder 34 and the needle was manipulated until *de qi* was established. The depth of the *in-situ* needle was measured using a 7.5 MHz digital ultrasound at two different focal depths (3.32 and 5.29 cm respectively) followed by a manual measurement of the needle on its withdrawal. The estimated needle depth of *de qi* was recorded in millimetres (mm) for all measurements. Results: The mean depth of the manual measurement was 16.30 ± 3.16 mm and the ultrasound mean depth was 18.98 ± 3.65 and 20.41 ±2.98 at the focal depths of 3.23 cm and 5.29 cm respectively. The manual and ultrasound measurements were then compared using Bland Altman plots. The 95% limits of agreement ranged from 13.0 to 7.60 mm for the manual and ultrasound measurement at the focal depth of 3.23cm, and from 11.3 to 3.1 mm at the focal depth of 5.29 cm. Conclusion, the manual method and ultrasound measurement of estimating *de qi* depth at either focal depth of 3.23 and 5.29 are not equivalent but the results indicate regardless of measurement approaches de qi is more superficial than previously recognised.

The frequency of hamstring stretches required to maintain knee extension range of motion following an initial six week stretching programme.

Kim S and Reid D

Health and Rehabilitation Research Institute, School of Rehabilitation and Occupation Studies

Faculty of Health and Environmental Science, AUT University, Auckland

Email: duncan.reid@aut.ac.nz

Previous research has demonstrated that stretching the hamstring muscle group once per day, five days a week for a six week period improves knee extension range of motion (ROM). There is little research to demonstrate the frequency of stretching required to maintain that range once the initial improvements have been gained. The purpose of this study was to compare two different hamstring stretching frequencies after an initial stretching period of six weeks. Sixty three males (mean age 22.9 SD:5) were recruited for the study. Participants were randomly assigned to one of three groups, two groups that stretched and one group who acted as a control who did not stretch. The two stretching groups both stretched initially three times 30 seconds, once per day, five days a week, for six weeks. Group one then continued stretching with the same stretching routine once a day, three days per week, and group two once a day, one day per week, for a further six weeks. The results of the study indicate that the groups that stretched over the first six weeks increased their knee extension ROM significantly. Over the second six weeks of stretching those participants that stretched three days a week maintained their ROM, whereas those who stretched one day per week did not. This difference was significant. Participants in the control group did not change their ROM at any time point. In conclusion, to maintain improvements in knee extension ROM after an initial stretching programme, stretching three times per week is required.

Acupuncture and dry needling: a fusion of horizons or conflicting paradigms?

Kohut SH, Larmer PJ and Jones M.

AUT University, Auckland.

Email: susan.kohut@aut.ac.nz

The definitions of acupuncture and dry needling are complex, with differing definitions being used worldwide. The needling of painful myofascial trigger points is known as 'acupuncture', 'dry' and 'trigger point' needling by different practitioners. A qualitative historical methodology was utilised to identify primary and secondary information sources in relation to dry needling origin, development, theories, legislation and

future possibilities. Tensions can arise when the use of the acupuncture needle as a therapeutic tool is defined to meet a legislated scope of practice, such as in Colorado where acupuncture practitioners were potentially prohibited to 'dry needle' and Victoria where physiotherapists using dry needling are not allowed to 'acupuncture'. Dry needling has been defined as separate to acupuncture because the philosophical and theoretical precepts of meridian theory are not part of dry needling. The Chinese demonstrate an oral and written history of 'dry needling' since the 7th century, however many consider Janet Travell the 'forefather' of Western dry needling techniques. Dry needling has strong association to the Western 'branch' of acupuncture based on the underpinning of anatomy and neurophysiology. The major problems emerging from this health system analysis were those of patient understanding and informed consent, the depth of understanding and safe practice when utilising an invasive technique, and practitioners using one tool but calling it by a different name. We conclude that legislation and patch protection are the drivers behind this separation and that greater clarity of professional acupuncture related practices are required for the safety of both patients and practitioners.

Injections by physiotherapists: It is time to broaden our scope

Laslett M

AUT University, Auckland

PhysioSouth Ltd, Christchurch

Email: mark.laslett@xtra.co.nz

Injection of local anaesthetic for diagnosis, autologous blood injection and corticosteroid injection are common procedures with adequate supportive evidence used in the management of musculoskeletal disorders. Physiotherapists are primary care clinicians with expertise in musculoskeletal diagnosis and therapies. They can refer directly for imaging studies, imaging guided injection procedures, and can undergo training in ultrasound imaging diagnostics. The use of local anaesthetic injections to identify anatomical sources of pain is an important part of musculoskeletal diagnostics. There are many musculoskeletal conditions that are aggravated by movement, mobilization and exercise based rehabilitation protocols, but respond well to corticosteroid or autologous blood injection therapies. Physiotherapists are ideally suited by training and interest to integrate these procedures into the overall management of such conditions. Musculoskeletal pain and disability are key domains of physiotherapy practice and short of surgery physiotherapists should be employing all available modalities. Injection for diagnostics and therapy is widely practiced in the United Kingdom by physiotherapists and a number of post graduate courses are available there. It is time to extend the scope of practice to include these modalities here in New Zealand. While there is no legal prohibition on physiotherapists performing these procedures within the New Zealand jurisdiction under medical prescription, the practice is uncommon, reflecting the particular circumstances and interests of individual physiotherapists. The profession should begin discussion on including these procedures to augment current advanced practitioner and specialist training programs.

Pulmonary Wii-habilitation: Exercise intensity achieved by people with chronic obstructive pulmonary disease playing Nintendo Wii

Levack WMM[1], Ramsay DP[1], Robiony-Rogers D[2] and Crane J[3]

[1]Rehabilitation Teaching & Research Unit, University of Otago, Wellington

[2]Capital & Coast District Health Board, Wellington

[3]Wellington Asthma, Allergy, and Respiratory Research Group, University of Otago, Wellington

Email: william.levack@otago.ac.nz

Pulmonary rehabilitation (PR) has been shown to improve physical function, improve quality of life, and reduce rehospitalisation rates in people with chronic obstructive pulmonary disease (COPD). However both provision and uptake of PR is poor. In 2009, less than 1% of the total population of people with COPD in NZ participated in PR programmes. Furthermore, 30% of people with COPD who were offered gym-based PR declined this offer. Alternatives to gym-based programmes may therefore increase uptake of PR. In this regard, kinetic video games are of interest for their potential to provide a form of home-based exercise. The purpose of this study was to explore the level of exercise intensity achieved by people with COPD playing kinetic video games under laboratory conditions. Fourteen participants with COPD were recruited from existing PR programmes. Participants completed cardiopulmonary exercise tests (CPET) under two conditions: 1) Maximal CPET performed on an electronically braked cycle ergometer, and 2) CPET while playing three Nintendo Wii games. Data collected included oxygen uptake (VO_2), carbon dioxide output, minute ventilation, respiratory rate, tidal volume, pulse oximetry, and HR. Preliminary data from the first six participants has indicated that that on average these participants achieved 94.5%, 82.0%, and 83.0% of their maximum VO_2 while playing Wii jogging, Wii rhythm parade, and Wii boxing respectively. This data suggests that Nintendo Wii games may be able to provide a level of exercise intensity that could potentially allow people with COPD to achieve functional gains similar to that provided by gym-based exercise programmes.

Outcome measures assessing pain levels pre- and post- total knee arthroplasty: a literature review

Mason T, Rogers J and Harman B

School of Rehabilitation and Occupational Studies, AUT University, Auckland.

Email: Bronwyn.harman@aut.ac.nz

The number of total knee arthroplasties (TKA) in New Zealand is increasing. Objective measurement of pain pre- and post-TKA is important to determine the efficacy of surgery and rehabilitation. The purpose of this review is to critique all available articles that measure pain outcomes with TKA. Electronic databases (Medline via EBSCO, Cochrane Library, Cinahl, Scopus) were searched up to May 2011 to find relevant articles. Keywords used were "knee arthroplasty" AND "pain" AND "outcome" with either "preoperative" AND "postoperative" OR "before" AND "after". Two researchers critiqued all articles to assess methodological quality using a valid and reliable critiquing tool developed by Downs and Black. Fourteen studies were included in the review and the overall methodological quality was found to be moderate. Results showed positive changes in pain in all studies with ten outcome measures used. The responsiveness of some of the outcome measures is problematic. A research proposal is presented to assess true change in pain by using interval data.

The effect of a jogging program on knee joint swelling and bone marrow lesions post ACL reconstruction

McNair PJ[1], Rice D[1], Cicuttini F[2], Davies-Tuck M[2], Hanna F[2], McKensey C[3], and Clatworthy, M[4]

[1] Health and Rehabilitation Research Institute, AUT University, Auckland, [2] Musculoskeletal and Rheumatology Units, Monash University, Melbourne, Australia. [3] The Radiology Group, Auckland, [4] Auckland Bone and Joint Surgery, Ascot Hospital, Auckland.

Email: peter.mcnair@aut.ac.nz

The purpose of the current study was to use MRI to measure changes in the amount of bone bruising or joint swelling that may occur in the first week after people who have had an ACL reconstruction begin jogging again. Twelve people were examined at a time when their surgeon had recommended they return to straight line jogging. All participants had their surgically reconstructed knee scanned 3 times - baseline (pre exercise scan 1), after 7 days (pre exercise scan 2) and after a further 7 days (post jogging scan). The 7 day period between scans 1 and 2 was designated a control period, with participants asked not to begin a jogging programme and not to perform any other activities that would place undue stress on their knee joint. The jogging program involved four sessions of 20 minutes duration over 7 days. At each measurement interval, the surgically reconstructed knee was scanned on a 1.5-T whole body MRI unit. Bone bruises and joint swelling were identified and measured. All subjects had notable bone bruising and swelling at baseline. There were no significant changes in bone bruising or swelling in the knee joint across time ($p > 0.05$). In conclusion, we found no evidence that the reinitiation of jogging 8-13 weeks after an ACL reconstruction leads to an increase in the amount of bone bruising or swelling in the affected knee joint.

Sick of it .... respiratory physiotherapy in rumination syndrome: a case study.

Mooney S

New Zealand Respiratory and Sleep Institute, Auckland

Email: smooney1@nzrsi.health.nz

This case study illustrates how patients with rumination syndrome (RS), a relatively unknown gastrointestinal disorder, can greatly benefit from respiratory physiotherapy. Rumination is characterized by the effortless regurgitation of partially digested food which is then rechewed, reswallowed or expelled. Diagnosis is made primarily on clinical evaluation by gastroenterologists and the absence of structural gastric abnormalities. The exact mechanism is unclear although increased abdominal muscle activity is thought to precipitate RS; some studies suggest this is a learned behaviour. Psychological features such as anxiety have also been reported. Documented treatment includes behavioural therapy, diaphragmatic breathing and progressive relaxation techniques. Respiratory physiotherapists are therefore ideally placed to assess and manage patients with RS. This case study presents the physiotherapy management of a 21 year old male with a 3 month history of rumination. Symptoms reported were socially limiting including food avoidance, fatigue, and reduced exercise tolerance. Findings supported altered abdominal mechanics and a breathing pattern disorder (Nijmegen questionnaire score of 24/64). Management encompassed breathing re-education and relaxation, with a particular focus on integrating the techniques during eating. Improvement was gained at two weeks (Nijmegen score: 5/64 and improved eating habits) and sustained at four weeks (Nijmegen score 2/64) with normal eating habits and increased exercise tolerance. Successful management has resulted in an expansion of services with gastroenterologists now regularly referring to the disordered breathing clinic for assessment/professional opinion.

Expanding services to meet the needs of adolescents with bronchiectasis.

Mooney S

Counties Manukau District Health Board, Auckland

Email: smooney1@middlemore.co.nz

Non-cystic bronchiectasis (BCT) is a chronic, debilitating disease characterised by productive cough, airflow obstruction, progressive dyspnoea and repeated respiratory infections. Incidence and prevalence of BCT is high in New Zealand compared with other developed countries with a prevalence of 1:6000 amongst children. Few services bridge the transfer from paediatric to adult management and meet the unique needs of adolescents. This presentation shares the experiences of expanding existing adult respiratory services to establish a 'transition' clinic for youths with BCT transferring to adult services and between DHBs. Initiated by two physiotherapists, a shared philosophy of care was established involving Youth Health, medical, nursing and physiotherapy services providing a pathway for adolescents to transition and transfer care to adult services. Whilst cognisant of the unique needs of adolescents and in particular, youths with BCT, the challenges presented to staff and services are highlighted. This includes adolescent pregnancy, multiple missed appointments, parental dominance and death of the young person. Whilst the transition clinic is still evolving, recommendations are made for future developments and in particular, expanding services and patient management to include and engage adolescents.

Piloting a new physiotherapy assessment and action plan to improve disability rights in the Cook Islands.

Mourie RL

Volunteer Physiotherapist for NGO Te Vaerua Community Rehabilitation Council, Rarotonga, Cook Island

Email: mouriefamily@xnet.co.nz

The Cook Islands Government recently ratified the Convention of Rights for Persons with Disability (CRPD) in May 2009, after strong lobbying from several local disability groups. Policy-makers and practitioners in the disability field are increasingly looking to evidence-based strategies to assess and maximise limited resources. The knowledge of local traditional beliefs and lived experiences around disability is of vital importance if prioritised needs are to be implemented for people with a disability. Results following volunteer physiotherapy work and interviews of 23 people with disabilities, caregivers and stakeholders, have uncovered that there is weak human rights participation within the disability field. This has shown to be predominantly due to the lack of self-belief of the people with disabilities, their cultural shyness and the lack of their needs being known or available. A new rights-based and capabilities approach assessment tool and action plan has been designed with these findings in mind and Te Vaerua Rehabilitation Council are currently piloting this approach for all new persons registered with a disability in Rarotonga. This capabilities assessment, after four pilot assessments and action plans, has been shown to not only be a tool for enabling disability rights for the participants, but also to uncover attitudes, barriers to development and prioritised needs in an inclusive manner that could be potentially used for future policy formation.

Barriers and facilitators to promoting physical activity for people with physical disabilities: Preliminary research findings and implications for physiotherapists

Mulligan H[1], Miyahara M[2], Nichols-Dunsmuir A[3] and Shearman J[4].

School of Physiotherapy, University of Otago, Christchurch; [2] School of Physical Education, University of Otago, Dunedin; [3] School of Physiotherapy, University of Otago, Christchurch; [4] School of Applied Sciences & Allied Health, Christchurch Polytechnic Institute of Technology, Christchurch

Email: Hilda.mulligan@otago.ac.nz

In order to promote physical activity participation among people with physical disabilities, physiotherapists must gain multiple perspectives on the social and physical environments of their clients. This study aimed to identify the barriers and facilitators to increasing physical activity from the perspective of three groups: people with physical disabilities, providers of physical recreation facilities and services, and those who plan or fund services for people with disabilities. Using semi-structured interviews, and a questionnaire, we interviewed over 50 people across New Zealand. The study found marked differences in perspectives among the three groups. Despite considerable reduction in barriers in recent years, people with physical disabilities still face challenges arising from attitudes, expectations, information, finance, transport, and the environment. In contrast, providers at recreation facilities often discounted and minimised these barriers, expressing the belief that they did a good job of providing for people with physical disabilities. Funders and planners were very diverse in their ability to influence promotion of physical activity, with system gaps evident. Physiotherapists must recognise that people with physical disabilities vary in their accessibility to activity programmes and facilities, social support to maintain physical activities, and the ability to advocate for themselves to access physical recreation. The findings suggest that promotion of physical activity should be client-centered and should incorporate collaborative problem-solving, goal setting, and monitoring with the clients. There are also opportunities for physiotherapists to take broader roles in their communities as advocates, educators, health promoters and facilitators.

Assessing students' perceived benefit of learning and practicing in an interprofessional health clinic

O'Brien D[1], Reid D[1], Heap N[2] and Leef N[3]

School of Physiotherapy[1], School of Oral Health[2], School Podiatry[3], AUT University, Auckland

Email: dobrien@aut.ac.nz

Interprofessional collaboration is a key competency for future health care professionals and it is now becoming a key learning outcome for the institutes that train these health care professionals of the future. The Akoranga Integrated Health (AIH) clinic is part of AUT's School of Interprofessional Health Studies. Students completing their clinical placements at the AIH clinic come from a number of different professional backgrounds. A primary goal of the clinic is to facilitate interprofessional learning and practice. Twenty three students from the physiotherapy, podiatry or nursing schools who had undertaken a clinical placement in the AIH clinic were asked to feedback on their experience of learning and practicing within the clinic. The student feedback was provided as part of the clinic's internal development process. All students questioned either agreed or strongly agreed to the statement 'I feel that I benefited from interacting with clinicians and students from other disciplines'. Most students agreed or strongly agreed that the interprofessional approach improved their clinical placement (91%), they wanted more time working with students from other professions (74%), and would encourage other students to complete their placement at the AIH clinic because of the opportunity to work with students and clinicians from other professions (87%). Students stated that the interprofessional approach allowed them to 'understand what other professions do', 'refer patients to other professions easier' and 'discuss different approaches to treatment with different students'. Students stated they would like to have more interprofessional tutorials. In summary, students perceived merit in the AIH's interprofessional approach to learning and practice and more research is required further investigate the benefit of learning and practice in an interprofessional health clinic.

Physiotherapist led Orthopaedic Clinics for assessment, prioritisation and treatment of musculoskeletal conditions, in particular lower limb arthritis.

Peck SK

South Canterbury District Health Board, Timaru.

Email: sharonkaypeck@hotmail.com

Conversion to surgery rates from orthopaedic outpatient consultations may be only 10-25%. Research has shown that over 60% of non-urgent General Practitioner referrals to orthopaedic secondary services did not initially need to see a surgeon. Three quarters of these patients could be appropriately assessed and managed by an experienced physiotherapist; this improved through put whilst maintaining the standard of care, and resulted in lower initial direct hospital costs. In 2007 the orthopaedic team at Timaru Hospital identified the need to reduce waiting times for First Specialist Appointments and manage progress of lower limb arthritis through earlier intervention and patient education. The physiotherapist led Orthopaedic Assessment Clinics were established to provide conservative assessment and management that was timely, comprehensive and coordinated. Patients were referred for assessment, and treatment, aligned with evidence based best practice, comprising modalities aimed at reducing pain, improving biomechanics, joint range, muscle strength, balance and function. There was a strong emphasis on education to promote self -management. Periodic reviews enabled progression of management. Outcomes were measured using the WOMAC, PSFS and NPRS and showed improvements for 78% of patients referred with only 34% of those assessed requiring surgery at some time. Satisfaction by all stakeholders resulted in plans to expand the service so that all arthritic patients are required to be referred to these clinics before any surgery is offered. The role is an exciting expansion enabling the physiotherapist to be an integral member of a specialty team providing a service that is sooner, better and more coordinated.

Interprofessional education in chronic care management: a pilot study

Perry M[1], Beckingsale L[2], Darlow B[1,3], Gray B[3], McKinlay E[3], Pullon S[3]

[1] Centre for Physiotherapy Research, University of Otago, Wellington

[2] Department of Human Nutrition, University of Otago, Wellington

[3] Primary Health Care and General Practice, University of Otago, Wellington

Email: meredith.perry@otago.ac.nz

Interprofessional education (IPE) refers to occasions when health and social care students from two or more professions learn interactively with the aim of developing collaborative practice and improving patient-centred health care. While there is growing evidence to support IPE, examples involving New Zealand students and more specifically New Zealand physiotherapy students are scarce. This pilot study, involving University of Otago Wellington educators and students from three health disciplines (dietetics, medicine, and physiotherapy), used principles of IPE for the delivery of an education module on chronic care management. Educators from each discipline were involved in the planning and delivery of the pilot. Seven students from each discipline participated in an informal social session, an introductory 3-hour interactive interdisciplinary workshop on chronic care management, online discussion forums, home-visits to patients with chronic conditions, and presentations to the class. Subgroups (one student from each discipline) worked together on activities. Evaluation methods included peer feedback of subgroup functioning, before and after self-assessment of learning outcomes, online discussion contributions and analysis of discipline-specific focus groups. Preliminary findings indicate physiotherapy students were positive about their experience of IPE. While the additional workload was a challenge, the experience enhanced their knowledge of roles and responsibilities of the other disciplines and broadened their understanding of chronic care management. The expansion of student/social networks within University of Otago Wellington was also beneficial. With refinement IPE could be incorporated into additional physiotherapy education modules and provide a positive model of collaborative practice and enhanced patient-centred care prior to graduation.

Assessment of asthma control: which instrument is right for the New Zealand context?

Skinner, MA[1], Bright, A[2], Last-Harris J[2], Morison L[2], Roche P[2] and Tucker S[2].

[1]Centre for Physiotherapy Research, School of Physiotherapy, University of Otago

[2]School of Physiotherapy, University of Otago

Email: margot.skinner@otago.ac.nz

In New Zealand there is currently no standardised assessment instrument for measurement of asthma control in adolescents and adults. This study was undertaken to investigate the assessment instruments used to monitor asthma control in a range of countries and determine their appropriateness for use within New Zealand. The study comprised a critical review of the relevant literature published in the English language from 2002 onwards using a standardised procedure, and including two independent reviewers. The measurement properties of the studies including the effectiveness of the instruments used to measure asthma control, ability of the instruments to detect change, psychometric properties and methods of administration were examined, along with concordance with the international global initiative for asthma (GINA) guidelines. From the 24 studies included, seven instruments to assess asthma control were identified. Two, the Asthma Control Questionnaire (ACQ) and the Asthma Control Test (ACT) were found to be suitable for use with adolescents and adults in the New Zealand context. Measurement properties for both were closely aligned with the GINA guidelines and the instruments were valid and very reliable on their repeated administration. Studies showed the ACQ was able to detect change in asthma control between visits and the ACT demonstrated that a difference of three points is indicative of a clinically meaningful change in asthma control. It was concluded that the ACT and ACQ are simple to use, can be self-administered and are recommended as being suitable instruments to measure asthma control in adolescents and adults in New Zealand.

‘Activity-Coaching’ for improving usual walking in people with neurological conditions

Stretton CM, Mudge, S, Kayes NK, Taylor D and McPherson K

Health and Rehabilitation Research Institute, School of Rehabilitation & Occupation Studies, AUT Auckland

Email: caroline.stretton@aut.ac.nz

People with neurological conditions have been shown to improve walking (distance and speed) in a physiotherapy clinic following rehabilitation but no carryover to real world walking has been demonstrated. ‘Activity-Coaching’ is a structured process incorporating behaviour change techniques which aims to improve usual walking. This study explored acceptability and feasibility of ‘activity-coaching’ with physiotherapists and patients undergoing neurological rehabilitation. A qualitative descriptive methodology was used. Six ‘pairs’ of physiotherapists and patients were recruited from community neurological rehabilitation services using purposeful sampling. Patient participants were included if they had a non-progressive neurological condition, were currently receiving physiotherapy and had a goal to improve walking. The activity-coaching intervention was delivered by a dedicated research physiotherapist, who had completed a two day course in health-coaching, as an addition to routine physiotherapy care. The session was observed by the treating physiotherapist. Semi-structured interviews were undertaken with the patient and physiotherapist participants. Two researchers independently analysed the data using content analysis. The intervention was acceptable to patients, and facilitated further engagement in the goal setting process. Aspects of the process were acceptable to physiotherapists as it provided a framework to improve communication. Physiotherapists also described considerable emotional tension when the patient was perceived to be complex due to ‘unrealistic’ goals. Contrasting perceptions between the patient and physiotherapist points of view were common. Further work is necessary on ways to negotiate the tension of managing hope while protecting morale and of managing goal setting with complex patients before this approach could be fully acceptable to physiotherapists

Fusing interpersonal horizons to expand possibilities within community-based physiotherapy practice.

Tasker D, Loftus S and Higgs J

The Education For Practice Institute, Charles Sturt University, North Parramatta, Australia

Email: ditasker@bigpond.com

The idea of ‘fusion of horizons’ is both a way of conceptualising qualitative research in healthcare as well as a description of what occurs in ongoing, complex therapeutic relationships between physiotherapists, their clients, and the family care teams that support those clients. The term ‘fusion of horizons’ comes from the philosopher, Gadamer, who was describing what happens in the activity of interpretation. We argue that such interpretation is invaluable throughout clinical encounters. In this qualitative research project conducted in New South Wales (Australia), Gadamer’s or philosophical hermeneutics was used as a methodological framework. As with the research process, a ‘fusion of horizons’ occurred between the physiotherapists in this study, their clients and members of the family care teams, opening up ongoing possibilities for positive outcomes for them all. By acknowledging the humanity and individuality of the people they had come to assist, and maintaining connection via the social relationship they developed with them, these physiotherapists appeared to become increasingly responsive and able to customise the physiotherapeutic needs of their clients and family care teams. The cyclic nature of this process, shown in a model of care we have called ‘Mindful Dialogues’, was found to provide the motivation and impetus needed to sustain the therapeutic relationship for all parties in these physiotherapy relationships. Given the increasingly complex and demanding situations within which physiotherapists work, this study provides a timely and positive view of how physiotherapists might sustain themselves and their clients through the development of relationships that are truly collaborative in nature.

The Physiotherapy Specialist: a model that meets New Zealand’s health needs?

Taylor L [1], Davie K[1] and Mueller J[1] and Samsell M[2]

[1] Physiotherapy Specialist Advisory Group, Physiotherapy Board

[2] Physiotherapy Board

Email: lynne.taylor@aut.ac.nz

Consultation on a potential new scope of practice, the “Physiotherapy Specialist” was completed by the Physiotherapy Board in October 2011. The specialist model presented for consultation requires New Zealand-registered physiotherapists to demonstrate expert clinical practice and knowledge in areas of physiotherapy currently recognised by the World Confederation of Physical Therapy clinical subgroups and Physiotherapy New

Zealand's clinical special interest groups. It is a model that closely follows that of the New Zealand Nurse Practitioner and those put forward by the Australian College of Physiotherapists and the Canadian Physiotherapy Association. A total of 280 responses were received comprising 252 from individuals and 28 from organisations (District Health Boards, Australian and New Zealand health regulatory authorities, government organisations and professional organisations). While the majority of respondents (84%) were supportive of the proposed scope for "Physiotherapy Specialists", some individuals and organisations (3%, n=9) questioned whether the proposed specialist scope was sufficiently distinct from the current general scope of physiotherapy practice and questioned what role the specialist would fill. This is the opportunity to reflect on whether physiotherapy specialisation or alternatively an extension of the current scope of practice (extended scope), or some combination of both options is the best model for addressing the identified areas of health need in New Zealand.

ACC Treatment Injury Claims

Taylor R

ACC Treatment Injury Centre, Dunedin

Email:Rachel.Taylor@acc.co.nz

The ACC Treatment Injury Centre has two key roles: assessing claims for injuries related to treatment and notifying potential risks of harm to the public. ACC has data reflecting approximately 45,000 treatment injury claims, providing a basis for examining care and informing quality audit measures. The challenge is to leverage quality improvement in the arena of no-fault injury cover. This presentation will provide a recap of the treatment injury legislation and a quick look at the claim process; updated treatment injury claim lodgement trends and areas of interest; give national and local treatment injury data and adverse event patterns. A range of clinical case vignettes will be discussed. The intent of this knowledge sharing is to

raise awareness regarding treatment injury claims and outcomes; identify key patterns arising from treatment injury data and promote discussion and debate regarding quality of care in light of the ACC adverse event data.

DMA clinical pilates directional bias assessment: reliability and predictive validity

Tulloch E[1], Abbott JH[2], Phillips C[3], Sole G[1] and Carman A[1]

[1]Centre for Physiotherapy Research, University of Otago, Dunedin, [2]Dunedin School of Medicine, University of Otago, [3] DMA Clinical Pilates, Melbourne

Email: evelyn.tulloch@otago.ac.nz

DMA Clinical Pilates utilizes a directional bias based treatment protocol, to affect deficits in dynamic postural stability and muscle performance. This randomised, repeated measures crossover study determined the reliability of the directional bias assessment and validity for predicting immediate changes in dynamic postural stability and muscle performance following directionally-biased exercises. Two researchers independently assessed 33 participants, each with a history of more than one unilateral lower limb injury, for directional bias. Inter-rater reliability of the directional bias assessment was evaluated using Kappa ($_{K}$), and prevalence-adjusted and bias-adjusted kappa (PABAK) coefficients. Results showed substantial agreement, with $_{K}$ = 0.75 and PABAK $_{K}$ = 0.76. Participants were randomly allocated to two crossover groups to perform matched bias (MB) and unmatched bias (UB) exercises. Two outcome measures, time to stabilisation (TTS) and rebound hopping (RH), were assessed before and following each exercise intervention using a forceplate. Crossover trial data were analysed by *t*-tests for period, interaction and treatment effects, and repeated measure ANOVAs were used to investigate differences between baseline, MB and UB conditions. Following MB exercises, medial-lateral TTS and time on the ground during RH were significantly shorter (p = 0.02, p = 0.05, respectively) compared with UB exercises. Compared with baseline, anterior-posterior TTS (p = 0.008) improved following MB exercises, while time in the air deteriorated following UB (p =0.04) exercises. We conclude that directional bias assessment demonstrates substantial reliability. Results suggest the assessment has validity for predicting immediate improvements in dynamic postural stability and muscle performance following matched directionally-biased exercises.

The Doctoral of Physical Therapy programme in USA: Development of the qualification and potential ramifications if adopted in New Zealand

Warren JP, University of St Augustine for Health Sciences, San Diego, USA.

Email: jwarren@usa.edu

This presentation will explore the development of the entry level doctoral degree programme in USA. There has been a nationwide transition to the Doctoral of Physical Therapy (DPT) programme from the baccalaureate degree over the past decade reflecting the vision of the American Physical Therapy Association that by 2020 all physical therapy will be provided by therapists who are doctors of physical therapy. This qualification addresses the changes in the healthcare system, the added roles and responsibilities and reflects the continued expanding of the scope of practice for physical therapists. In the USA there are 199 universities and colleges which provide 212 accredited professional physical therapy education programmes. The majority of these programmes offer the DPT degree and have significant fees. The effect of the longer and more expensive graduate programme is to add further pressure on the cost of healthcare in the US, where more money is spent per person than any other country in the world. Compared to New Zealand the USA profession has different drivers for example direct access to physical therapy which is not universal. Although

it is important that New Zealand physiotherapy education is inline with overseas 'progress' any change in education or qualifications should address the needs and financial implications of change to the New Zealand consumer.

Compliance and efficacy of two different pelvic support belts as a treatment for pregnancy-related symphyseal pain

Woodley SJ[1], Flack NAMS[1], Hay-Smith J[2] and Stringer MD[1]

[1]Department of Anatomy, University of Otago, Dunedin

[2]Rehabilitation Teaching and Research Unit, Department of Medicine, University of Otago, Wellington

Email: stephanie.woodley@anatomy.otago.ac.nz

In pregnant women who develop pubic symphysis pain, symptoms may be severe and interfere with daily activities. Physiotherapists often prescribe pelvic support belts to treat this problem, yet there is little scientific evidence to support their use. This preliminary trial tested two different pelvic belts to determine efficacy, compliance and tolerance. Pregnant women with clinically diagnosed symphyseal pain were randomly allocated to wear either a flexible or rigid belt for three weeks. The number of hours belts were worn and changes in pain and function were recorded using daily text messages. Weekly phone interviews gathered data on function (patient specific functional scale [PSFS]), pain intensity during the previous week (visual analogue scale [VAS]), and disability (Modified Oswestry Disability Questionnaire [MODQ]). To date, 12 (mean age, 29.2 ± 6.4 years; mean gestation at baseline, 32.3 ± 4.8 weeks) of 20 intended participants have completed the trial. The flexible belt was perceived as the most comfortable and was worn for longer each day; however, there was no significant difference in duration of daily wear between the two groups (mean difference, 1 hour; 95%CI, -2.3 to 1.5). Women wore the belts for an average of 4.9 ± 2.6 hours daily. There were no significant differences between groups for PSFS, VAS or MODQ, although all three outcome measures improved on average in both groups. These preliminary results suggest that pelvic belts for pregnancy-related symphyseal pain may be similarly effective but flexible belts may be more comfortable. A larger prospective randomised controlled trial is planned.

Community-based peer-led group exercise programme for older adults at-risk of falling: impact on injurious falls

Wurzer BM[1], Hale LA[1], and Waters DL[2]

[1] School of Physiotherapy, University of Otago, Dunedin

[2] Department of Preventive and Social Medicine, University of Otago, Dunedin

Email: birgitwurzer@hotmail.com

The Steady as You Go (SAYGO) programme is a peer-led fall prevention programme for older adults, and has shown to improve measures of strength and balance. However, details about injuries resulting from falls are not known. This paper presents the number of falls and fall-related injuries during a six-month period of older adults attending the SAYGO programme. All Otago region class attendees of existing groups were invited to participate, and consent and baseline data were obtained from 185 people. Falls were monitored on a monthly basis via self-reported falls calendars and fall event questionnaires. Injurious falls that required medical attention were followed up by phone to obtain detailed information about the fall using a structured questionnaire. At six month follow-up, two participants passed away and seven withdrew. Data were completed for 15 males and 161 females (a total of 176 attendees, average age 78 years, SD 6.7, range 62-100). Thirty three (41.3%) out of a total of 80 falls that occurred did not result in any injuries. Reported injuries were primarily sprains, bruises, and grazes that did not require medical attention. Ten people had injurious falls, of which three people sustained a fracture. None were femoral neck fractures. The study showed that the majority of injuries reported were minor sprains and bruises, and only 3.75% resulted in fractures, a figure much lower than reported in the literature. These findings suggest that older adults at-risk of falling who are attending community-based peer-led exercise classes may sustain less severe injuries after a fall.