School of Rehabilitation Science
MSc(PT) Program

Research & Evidence Based Practice Abstracts

2012
Exercise and Cancer: What exercises do patients perform?

Students: Mary Ellen Baldner, Emma Jack, Jane Howard, Giulia Pepe
Supervisor: Oren Cheifetz

Purpose:
To determine which exercises were performed most frequently in a community-based exercise program for adults with cancer and how often participants recorded their rating of perceived exertion (RPE).

Methods:
Sixty-eight adults participated in a 12 week, individualized exercise program. The exercises and RPE were recorded in logbooks, compiled into an Excel file, and analyzed using SPSS 20 to determine exercise and RPE recording frequency overall and by cancer diagnosis.

Results:
The most frequently performed exercises were: (1) warm-up: recumbent bike (44.9%), treadmill (44.3%), elliptical (7%); (2) resistance: triceps extensions (11.3%), biceps curls (10.9%), fly (9.8%), row (9.8%), hamstring curls (9.3%), leg press (9.3%), calf raises (8.6%), shoulder raises (5.3%), knee extensions (4.2%), and squats (3.5%); (3) aerobic: treadmill (44%), Arc Trainer® (17%), recumbent bike (14%). Participants with ovarian cancer, multiple myeloma, and lymphoma used the arm ergometer or recumbent bike most frequently. No trends emerged with resistance exercises by diagnosis. RPE was recorded 82.9% of the time.

Conclusion:
Participants performed a variety of upper and lower body resistance exercises, most frequently utilized the treadmill for warm-up and aerobic exercise, and exhibited a high compliance with RPE recording. There was little variation between cancer diagnoses.
Online support in conjunction with a community-based fitness program for children and adolescents with physical disabilities: a feasibility study

**Team Members:** Monique Coelho, Courtney Conway, Ellen McCarthy, and Elyse Waters

**Investigators:** Marilyn Wright, Lindsay Bray, and Jan Willem Gorter

**Purpose:**
To determine the feasibility of an adjunct online support forum to a community-based fitness program for children and adolescents with disabilities and measure the impact of this combined approach on physical fitness and activity.

**Methods:**
*Subjects:* Nine adolescents aged 10-18 with varying degrees of physical disabilities. *Procedure:* Subjects participated in a 13-week community-based fitness program 1x/week. After 6 weeks, an online component was introduced providing the opportunity to interact with online coaches and members of the program. Participants were assessed at week 1 and 13. Primary outcomes included paper and online logs to track adherence to activity outside of supervised sessions. Secondary outcomes included measures of endurance, strength, power and the CAPE questionnaire.

**Results:**
Findings demonstrate a lack of patient adherence to the paper and online logs. Pre and post intervention change scores show significant differences in endurance, the left foot heel raise component for strength, broad jump and timed plank components for power, and the ‘With Whom’ and ‘Where’ CAPE dimensions of participation.

**Conclusion:**
Although results illustrate significant findings between pre and post intervention scores in some areas measured, the change cannot be attributed to the online component, as there was a lack of participant adherence to AbilityOnline.
PRIMARY CONTACT PHYSIOTHERAPY IN THE EMERGENCY DEPARTMENT: WHAT IS THE EVIDENCE?

Sean Bell, Laurence Boma-Fischer, Jonathan Hamel, and Praful Handa
Supervisors: Joanne Chen and Steve Colangelo

BACKGROUND
In some hospitals, physiotherapists work in the emergency department and receive referrals for musculoskeletal injuries directly from the triage nurse, without referral from a physician. In Ontario, recent changes to the scope of physiotherapy have made physiotherapists better suited to such a role.

OBJECTIVES
To determine the effects of primary contact physiotherapy services in the emergency department on patient wait times and patient satisfaction.

METHODS
MEDLINE, Embase, and CINAHL were searched. Selection criteria included studies investigating primary contact physiotherapists in the emergency department. Papers were appraised using the PEDro criteria.

RESULTS
Three articles were included in the study. The current data suggests trends towards reduced patient wait times; however, there is a lack of statistically significant data. There is evidence that primary contact physiotherapists in the emergency department do not decrease patient satisfaction.

AUTHOR’S CONCLUSIONS
There is no high quality evidence to support the primary contact physiotherapist role in the emergency department. There are a few studies of low to moderate quality evidence supporting the benefits of this service. There is sufficient evidence regarding patient wait times and patient satisfaction to justify a pilot trial of the primary contact physiotherapist role in an Ontario emergency department.
Effects of a 12 month or greater whole body vibration intervention on bone mineral density in post-menopausal women: a systematic review and meta-analysis.

Students: Laura Snyder, Heather McNeil, Lauren McPhail, Katrina McLoughlin
Supervisor: Enoch Ho

Purpose: To conduct a systematic review and meta-analysis of randomized-controlled trials (RCTs) evaluating the effect of whole-body vibration (WBV) on bone mineral density (BMD) in post-menopausal women.


Results: Five RCTs met inclusion criteria. Meta-analysis: Hip mean difference bordered line of no effect. Lumbar spine mean difference favoured WBV; however the overall effect was insignificant. Systematic Review: Two studies showed benefit using rotational WBV, with some significant changes in lumbar spine BMD. Positive changes in hip BMD with WBV were insignificant. Minor adverse effects were reported in one study.

Conclusions: In post-menopausal women, there limited is evidence illustrating uncertainty about WBV affecting BMD in hip region; however in the lumbar spine there is weak evidence showing a favourable trend.

Clinical implications: Insufficient evidence to determine if WBV is an appropriate therapeutic adjunct to affect BMD in post-menopausal women. WBV is unlikely to cause major adverse effects. More research is needed to ascertain effectiveness in hip and lumbar regions.
Medicinal injection therapies for mechanical neck disorders

Authors: Erin Galway, Neenah Navasero, Karis Van Essen
School of Rehabilitation Science, McMaster University, Hamilton, Canada
Supervisor: Anita Gross
Co-investigators: Maggie Qiyun Shi, Stephan Burnie, Frances LeBlanc

Background:
Controversy persists regarding medicinal injection therapies for mechanical neck disorders (MNDs).

Objectives:
To determine the effectiveness of medicinal injections on primary outcomes of pain, function and disability, and quality of life for adults with MNDs.

Search methods:
We searched CENTRAL, MEDLINE and EMBASE from December 2006 through to March 2012.

Selection criteria:
We included randomized controlled trials of adults with neck disorders treated with medicinal injection therapies.

Data collection and analysis:
Two authors independently selected articles, abstracted data and assessed methodological quality. When clinical heterogeneity was absent, we combined studies using random-effects models.

Results:
We included 12 trials (667 participants). We found limited very low quality evidence that there was an effect on pain for intramuscular lidocaine injection versus control for chronic myofascial neck pain. Two low quality studies showed that there was an effect in pain for nerve block with anaesthetic over saline immediately post treatment and in the short-term. No high or moderate quality studies were found with evidence of benefit over control. Moderate quality evidence suggests that there was little or no difference in pain or function and disability between nerve block injection of steroid and bupivacaine versus bupivacaine alone at short, intermediate and long-term for chronic neck pain. All other studies were low or very low quality and showed no evidence of effect of the intervention over control.

Authors’ conclusions:
Based on current evidence we are unable to confirm the effectiveness of IM-lidocaine injection for chronic mechanical neck pain and nerve block anaesthetic for cervicogenic headache. In addition, there is moderate evidence of no benefit for steroid over non-steroid nerve block for mechanical neck pain.
Psychological Care, Patient Education, Orthosis, Ergonomics and Prevention for Neck Pain: An Systematic Overview Update as part of the ICON* Project

Stacey Huang, MSc(c), McMaster University, Hamilton, Canada
Mahweesh Khan, MSc(c), McMaster University, Hamilton, Canada
Anita R Gross, PT, MSc, McMaster University, Hamilton, Canada
Faith Kaplan, PhD, McMaster University, Hamilton, Canada
Lina Santaguida, PT, PhD, McMaster University, Evidence-based Practice Centre, Hamilton, Canada

ABSTRACT:

We found 71 reviews (5 to 9 AMSTAR) representing 69 primary RCTs. There is evidence of a medium (ST) and small (IT and LT) benefit for pain [ST SMD: -0.67 (95% CI -0.87 to -0.46; IT SMD: -0.38 (95% CI -0.59 to -0.17; LT SMD: -0.44 (95% CI -0.66 to -0.23);] favouring advice on activation using an educational video given in an emergency room versus no treatment at short, intermediate and long term pain for acute WAD. Additionally, there is evidence of a small effect favouring Dantian Qigong - a mind-body (alternative) approach when compared to no treatment at immediate post treatment and in the short term [pain pooled SMD -0.34 (95% CI: -0.67, -0.01)]; and moderate improvement for function [pooled SMD -0.36 (95%CI: -0.68, -0.03)] for chronic neck pain. There is also evidence of no benefit that 1) collar versus general physiotherapy (moderate quality; 4 trials, 482 participants) in patients with acute WAD pain (NPRS) at short to intermediate-term follow-up but not at long term; 2) collar plus education to self-mobilize versus general physiotherapy for pain (VAS) reduction and increase ROM at short-term follow-up for acute WAD; 3) Self-management educational strategy versus strengthening or endurance exercise for long term pain and disability for chronic non-specific neck pain; 4) self-management advice on neck care versus intensive neck exercise for short and long pain and disability for acute neck pain. All other categories had low to very low quality evidence.
Getting a Grip on Arthritis
A Needs Assessment for Online Learning

Background.

Getting a Grip on Arthritis (GRIP) is a face-to-face interprofessional program developed to address barriers between arthritis best practice guidelines and arthritis care.

Purpose.

To improve interprofessional learning and implementation of best practice guidelines, GRIP aims to transition to online education. The objectives of this study were to identify barriers to accessing arthritis care and preferred online tools to support management of patients with arthritis. The purpose was to identify the top three learning needs of health care providers working with patients with arthritis to prioritize the content of three online modules.

Methods.

Members of the public, Canadian Cochrane authors, and researchers attended a Canadian Cochrane Symposium held in May 2012. Attendees voted on priorities of the 10 arthritis best practice guidelines. Online surveys were developed and distributed to health care providers and members of the public. Results were then analyzed in Excel.

Results.

Thirty people attended the Canadian Cochrane Symposium while 317 health care providers and 93 members of the public completed the online surveys. The top three learning needs identified were: 1) medications; 2) rheumatology referrals; 3) patient education.

Conclusions.

This needs analysis identified the three main areas of content for the GRIP online modules, which will facilitate implementation of arthritis best practice guidelines.

Keywords.

osteoarthritis, rheumatoid arthritis, knowledge translation, best practice guidelines, online learning
The quality, content and readability of websites addressing wrist fracture.

Students. Jake Serieska, Madelaine Golec, Tawn Dingwall, Eric Olympico
Supervisor: Dr. Joy McDermid

Background:
The internet offers consumers great access to health information. The general public has expressed concerns about the quality and accuracy of online information.

Objectives:
The purpose of this study was to evaluate the quality, content and readability of websites addressing wrist fracture.

Methods:
The first 20 websites identified in a Google search for ‘wrist fracture’ that met inclusion criteria, were evaluated using the DISCERN instrument for quality, an evidence-based Content Checklist and the Flesch Reading Ease program for readability.

Results:
The overall quality of the websites was highly variable. The majority of websites partially addressed criteria for both the DISCERN and Content Checklist. The website that provided the best content had the lowest reading ease level, and vice versa. Using a ranking system, this study was able to rank each website from best to worst taking an equal value of quality, content, and readability.

Conclusion:
This study found that current websites are unlikely to provide complete, high quality information that is readable by the general population. Accordingly, clinicians can make use of the ranking system used to help direct their patients with wrist fractures to the best overall website for their needs/appropriate reading level.
Program Evaluation for Thoracic Surgery Patients at St. Joseph’s Healthcare Hamilton

Students: Sajel Mistry, Nami Osakabe, Inderjeet Takhar
Project Supervisors: Vince DePaul, Magda McCaughan, Christina Murphy

PURPOSE:
To evaluate the impact of a mobility-focused enhanced physiotherapy care program in patients who undergo thoracic-surgery for lung cancer on the outcomes of 1) time to independent ambulation 2) time to physiotherapy discharge and 3) total acute length of stay (LOS).

METHODS:
In this program evaluation 227 patients that underwent thoracic surgery at St. Joseph’s Healthcare Hamilton were included. The enhanced care group (ECG; n=179) received physiotherapy twice daily and the standard care group (SCG; n=48) received physiotherapy daily. The ECG data was collected prospectively and the SCG data was retrieved retrospectively through chart reviews. Descriptive and statistical analyses were completed on the above outcomes.

RESULTS:
The ECG (4.61 ± 1.98) had a significantly ($p<0.05$) shorter time to independent ambulation than SCG (5.77 ± 3.22). Time to physiotherapy discharge and total hospital LOS were not statistically significant between the two groups.

CONCLUSION:
Post-thoracic surgery patients who received twice daily physiotherapy had significantly less time to independent ambulation and a trend towards decreased hospital LOS and time to physiotherapy discharge. Best practice for thoracic-surgery physiotherapists is to mobilize patients frequently post-operatively.
Therapists working with individuals with morbid obesity: results of a needs analysis and development of a resource manual

Students: Robin Valadares, Hoong Phang, Mitch Baldissarelli, Phil Lachance.
Co-supervisors: Nancy Bovell & Vince DePaul

Purpose:
The primary purpose of this project was to apply the findings from a needs assessment for therapists working with morbidly obese individuals. These findings were applied to the creation of a bariatric resource manual.

Method:
A cross sectional needs assessment survey for inpatient occupational therapists (OTs) and physiotherapists (PTs) was conducted using a self-completed online questionnaire. Participants were recruited from inpatient hospitals across Hamilton, Ontario. The needs assessment consisted of 23 questions, encompassing 5 domains: demographics, work experience, confidence in bariatric care, training, and resource manual planning. Frequencies and means were computed for all Likert-type questions.

Results:
A total of 98 therapists completed the needs assessment. Participants agreed that the availability of hospital based equipment, mobility training, and space limitations were the most relevant challenges to providing care for morbidly obese individuals. The main themes and trends extracted from the data suggest that the acquisition of bariatric equipment was a top priority.

Conclusions:
The needs assessment demonstrated that OTs and PTs alike have major challenges in acquiring bariatric equipment in an effective manner. The results offered a framework for the construction of a resource manual that set out to address these challenges.
Development of an interdisciplinary feedback process focusing on physician residents and physiotherapists at hospitals in Hamilton, Ontario

Students: Jean-Pierre Nabarra de Benejacq & Gene Lin
Co-supervisors: Andrew Burke & Dr. Parveen Wasi
Co-investigators: Ian Mazzetti, Lacey D. Pitre & Raman Rai

Purpose
To initiate a new formal interdisciplinary feedback system in an inpatient medical teams setting at Hamilton Health Sciences. The development of this feedback system was to encourage two-way dialogue between all allied health professionals. The focus was on interdisciplinary teams giving and receiving feedback, specifically from physiotherapists and the physician teams, especially new residents. Based upon our literature review, several significant barriers to the success of this program were identified.

Method
Conducted interview focus groups of physiotherapists and held a seminar with the full healthcare team to better understand their requirements and needs. The obtained qualitative data was then coded into identified themes and analyzed.

Results
Several significant barriers to the success of this program were identified. Physiotherapists were not educated as to the existing program of uni-directional feedback to the medical residents and noted weaknesses in expanding this template into a two way feedback system between medical residents and teams. They also identified current issues such as no current formal feedback system used within a team or in a hospital setting. Furthermore, physiotherapists identified concerns with general time constraints, feedback parameters, and limited interactions with frequently rotated residents that would negatively affect the quality of the new feedback system.

Conclusion
Using this newly obtained information, a new feedback system was proposed to address these needs. Feedback cards were developed around individual patient cases and introduced to the interprofessional team at the Juravinski Cancer Centre (JCC), with a positive response. Conducted trials of the feedback cards at the JCC will be assessed as part of a future study.
The effects of yoga on pain and quality of life in women with breast cancer: a systematic review.

Students: Jeff Boudreau, Andrea Latter, Samantha Pottier, Emily Thorpe

Supervisor: Jenna Smith

Purpose:
Recent research has suggested that yoga may be an effective complementary therapy for women with breast cancer. The purpose of this systematic review was to determine if yoga is effective in reducing pain and improving quality of life (QoL) in women undergoing breast cancer treatment.

Methods: A systematic search of several databases (CINAHL, AMED, Ovid MEDLINE, Embase, PEDro, and Pubmed) was performed up to and including April 2012 to identify all relevant studies. Subjects were women (age ≥ 18 years) with a primary diagnosis of breast cancer who participated in a yoga intervention. Articles were critically appraised using the PEDro scale.

Results:
Twelve studies met the inclusion criteria, all of which measured global QoL or constructs of QoL. A trend towards beneficial effects on QoL was found, with the majority of results reaching statistical significance. Two studies showed a reduction in pain following their yoga intervention.

Conclusion: There is preliminary evidence supporting a beneficial effect of yoga on pain and QoL in women undergoing breast cancer treatment. Limited conclusions can be drawn due to the relatively low methodological quality of the studies. Further high-quality research is needed to explore the benefits of yoga in this population.
Examining the effectiveness of an interprofessional tutorial problem in raising issues relevant to falls in the elderly in their home

Students: Jessie Koopman & Tina Sun
Co-supervisors: Lynne Geddes, Dr. Pat Miller, Joan Southam

Purpose:
To examine the effectiveness of a newly-developed tutorial problem in prompting students to identify the important issues surrounding falls in the elderly within the home.

Methods:
A qualitative study using directed content analysis was conducted. Two interprofessional mock tutorials were conducted using 2nd year MSc(PT) and MSc(OT) participants under the direction of an experienced tutor and observation of student investigators. Audio data was collected and analyzed by five investigators to identify themes within the discussion and examine the created learning objectives to determine if the anticipated issues were adequately raised.

Results:
Two OT and seven PT students participated. The students in both tutorials generated three of the six anticipated learning objectives examining evidence-based resources, falls, and treatment. One of the tutorial groups generated a fourth learning objective, examining the interplay between autonomy, risk, and respect. Two of the anticipated learning objectives examining the complexities of home care and the meanings of home were addressed in small amounts through discussion only.

Conclusion:
The learning resource was able to generate some of the anticipated learning objectives in adequate detail, but not others, highlighting the need to carefully examine and test learning resources prior to implementation in the MSc(OT) or MSc(PT) programs.

Keywords:
Problem-Based Learning; Curriculum; Program Evaluation; Home Care Services; Health Occupations
Psychometric properties of the LEFS: a systematic review

Student Members: Allison Fulton, Cesar Toledo, Cedric Quach, Megan Thistle
Project Supervisor: Saurabh Mehta

Main objective:
To find and synthesize evidence on the psychometric properties of the LEFS.

Methods and measures:
A search was conducted in 4 databases (Pubmed, Embase, Medline and CINAHL). The structured search was supplemented by hand searching and web search. The full text review, critical appraisal, and data extraction was completed by 2 individuals using standardized tools. Ranking of the quality of the studies was synthesized.

Results:
The agreement between raters on quality assessments was good (0.65). In total 16 studies were included in the review. More than half of the studies reached a quality level greater than 70%. Failures to report clear objectives, hypotheses or to rationalize the sample size were the most common flaws in study design. All studies provide evidence suggesting that the LEFS has good reliability (ICC > 0.75), good validity, and good responsiveness (SRM > 1.05 from admission to discharge) in patients with osteoarthritis, ankle fractures or sprains, ACL reconstruction surgery, and with general lower extremity MSK issues. The LEFS is also reliable, valid, and responsive in Italian and French. The MDC and MCID are approximately, 9 LEFS points. The LEFS strongly correlates to a number of similar indices and moderately correlated to a number of physical performance measures.

Conclusion:
Evidence suggests that the LEFS is a valid, reliable, and responsive tool in a number of different populations. The Italian and French versions of the LEFS have also been found to be valid, reliable, and responsive. More high-level studies examining clinically applicable properties are required.
**Characteristics of patients attending the Regional Joint Assessment Program who were deemed non-surgical candidates at the time of the initial visit.**

Students: Jenna Johnson, Nicole MacDonald, Lauren Pontarini, Kaitlyn Ross, Gorana Zubic.

Co-supervisors: Dr. Norma MacIntyre & Sampa Samanta

**Purpose:**
To identify characteristics of patients with confirmed hip or knee osteoarthritis (OA) who attended the Local Health Integration Network 4 (LHIN-4) Hamilton Health Sciences Regional Joint Assessment Program (RJAP) for an initial consult who did not require an immediate total joint arthroplasty (TJA).

**Methods:**
A retrospective chart review was conducted on 482 patients who attended RJAP within a three month period. 42 variables were extracted from dictated consultation notes. A forward stepwise multiple logistic regression identified variables characterizing non-surgical candidates.

**Results:**
A total of 235 charts contained data on all variables. Severity (OR 0.259, \( p < 0.001 \)), Lower Extremity Functional Scale (LEFS) (OR 1.045, \( p = 0.006 \)), Knee Society Score (KSS) or Hip Harris Score (HHS) (OR 4.163, \( p = 0.004 \)), cardiovascular conditions (OR 1.232, \( p = 0.27 \)), walking aid (cane) (OR 0.434, \( p = 0.044 \)), consulting joint (hip) (OR 0.44, \( p = 0.049 \)) characterized non-surgical candidates.

**Conclusions:**
Severity, LEFS, KSS/HHS, cardiovascular conditions, walking aid (cane) and consulting joint (hip) are important variables to characterize non-surgical candidates attending the LHIN-4 Hamilton Health Sciences RJAP. This study provides a novel perspective by identifying characteristics of non-surgical candidates with hip and knee (OA) to optimize assessment and treatment strategies.
Characterizing mobility disability and spine postural alignment in community-dwelling older women with osteoporosis.

Students: Paul Platt & Rob Nichols  
Co-supervisors: Dr. Norma MacIntyre & Dr. Karen Beattie

PURPOSE:
This study investigated the relationship between spinal curve measures and self-reported mobility ability in community-ambulating postmenopausal women with osteoporosis, and the clinical utility of an iphone inclinometer application (AP) for measuring spinal curves in the same population.

METHOD:
Subjects: Women aged >/= 65 years with osteoporosis were recruited.  
Design: Cross-sectional study.  
Procedure: During a single visit, two sets of triplicate measures of each participant’s spine curvatures were obtained using three measurement devices: flexicurve ruler (FR), digital inclinometer (DI), and AP. Between measurement sets, a self-report, mobility ability questionnaire was administered to each participant.

RESULTS:
Eleven women aged 70 to 87 years participated. All had clinical thoracic hyperkyphosis. Nine of the 11 subjects reported mobility limitations. The AP had an average bias of 4.2 to 5.2 degrees and agreement ranging from +/- 7.5 to 10.0 degrees, compared to the DI.

CONCLUSIONS:
There was a tendency for the women in our study with hyperkyphosis to have self-reported mobility limitations, suggesting a possible association between mobility and spinal curves. The agreement of the AP with the DI appears insufficient for interchangeable use, but its practical utility suggests the importance of further research to assess its true value.
Physiotherapists partnering in primary health care: evaluation of a chronic disease self-management program through health coaching and exercise. A mixed methods, single group, before-after design.

Team Members: Shane Graham, Josh Friesen, Michael Rosenblat, Colin Rous
Team Supervisor: Sinead Dufour
Co-investigator: Julie Richardson

Purpose:
To evaluate the delivery of a program in a private physiotherapy clinic that includes chronic disease self-management (CDSM) through health coaching (HC) and an exercise program that focused on skill-building workshops for persons with chronic disease.

Methods:
This mixed methods study was a single-group, before-after study with participant focus groups. The Timed Up and Go (TUG), Six-item Chronic Disease Self-Efficacy Scale, Self-Rated Health Scale, 4-meter Walk Test (4MWT), Waist Circumference (WC), grip strength (GS), Rapid Assessment of Physical Activity (RAPA), and Visual Analogue scales for Quality of Life (VAS-QOL) and Fatigue (VAS-F) were assessed in 18 adults (62.1 ± 11.99 years) with varying chronic diseases over an 8-week study. Paired t-tests were used to evaluate data.

Results:
Twelve participants completed the study. Significant improvements were seen in the 4MWT (p < 0.001), RAPA 2 score (p = 0.010) and the VAS-F post exercise (p = 0.011). Qualitative findings were positive and congruent with the quantitative results.

Conclusions:
This study demonstrated that a CDSM program with HC and exercise administered and implemented by PTs within a private clinical setting may be an effective adjunctive service in the management of chronic conditions.
Systematic Review of Factors Predicting Success for Entry-Level Physiotherapy Students

Student Team: Nicole Gleason, Cat Kajary, Kristine Poirier, Shira Teller
Supervisor: Dr. Vanina Dal Bello-Haas

Purpose:
To determine factors that can predict success in entry-level physical therapy (PT) programs.

Methods:
Electronic databases (MEDLINE, CINAHL, EMBASE, and AMED) were searched from 1990 to 2012. All articles were initially screened by all authors based on title and abstract. Articles were then filtered for inclusion/exclusion criteria by multiple pairings to decrease bias. Selected studies were appraised independently and discussed in pairs. The authors developed a critical appraisal table based on the Scottish Intercollegiate Guidelines Methodology.

Results:
Five retrospective cohort studies met the inclusion criteria. Three were of medium quality and two were of low quality. Admission-level factors, undergraduate GPA (uGPA) in combination with school selectivity, verbal GRE (vGRE) and quantitative GRE (qGRE), and personal factors, age and ethnicity, can be used to predict academic success and National Physical Therapy Examination failure.

Conclusion:
There is evidence to support the use of uGPA, school selectivity, vGRE, qGRE, age, and ethnicity in predicting academic performance in a PT program. There is limited evidence to support the use of uGPA, vGRE, qGRE and ethnicity in predicting failure rates on the U.S. national licensing exam. Canadian PT programs may want to add GRE testing to their admissions process.
Are physiotherapy staff adhering to documentation standards with electronic charting?

A retrospective chart audit in Hamilton Health Sciences

Students: Allyson McKnight, Duncan Ravenscroft, Tess Mihell and Tyler Moise
Supervisors: Cynthia Lambert and Michelle Bradshaw
Co-Investigator: Pat Miller

This study examined the level of adherence to documentation standards exhibited by the electronic charting of physiotherapy staff at Hamilton Health Sciences (HHS). An audit tool, with an instruction manual, was developed for the underlying research, using standards set out by the College of Physiotherapists of Ontario (CPO) and by HHS. Inter-rater reliability of the tool was tested, and found to be high. The tool was utilized for a retrospective audit of 30 charts, randomly selected from five of the HHS units which currently utilize electronic charting. Results demonstrated a higher adherence (average of 82.1%) in initial assessments than in follow-up documentation (average of 57.9%). Items which were well-documented when combining both initial and follow-up charts included consent (90%), treatment description (87%) and objective findings (74%). Clinical impressions and subjective findings were not reported consistently overall, at 35% and 53% respectively. Most (85%) follow-up charting occurred in the PT/PTA flowsheet (an unstructured, editable form), which may have accounted for the drop in adherence rates between initial assessments and follow-ups. Recommendations for further training and education of staff, as well as modification to existing electronic forms, have been made.