

TITLE: Impact of Urine Leakage, and Perceived Activity Change due to Urine Leakage on Leisure Time Physical Activity

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ABSTRACT BODY:

Purpose/Hypothesis: To describe the prevalence of experiencing urine leakage with physical effort, the number of women who reported changing their physical activity (PA) habits due to urine leakage, and the total, moderate, and vigorous PA of women who did not experience urine leakage, experienced urine leakage with no reported change in PA, and experienced urine leakage with a reported change in PA by age epoch. We hypothesized the highest prevalence of urine leakage would be observed between ages 22 and 34 years when child bearing is most likely, and the eldest epoch, 51 to 65; women who reported experiencing urine leakage would exhibit lower levels of leisure time PA. **Number of Subjects:** The 976 women were a subset of the Physical Activity and Pelvic Floor Disorders Study (PHACTS). Median age was 50 ± 7 years, and BMI was 24.75 ± 5.1 . The population was 93% white and 61% had completed a bachelor's degree or higher. **Materials/Methods:** All participants were enrolled in PHACTS, a double case-control study on the influence of lifetime and past year PA on stress urinary incontinence and pelvic organ prolapse (POP). Women were recruited from primary care clinics, most not seeking treatment for SUI or POP. Participants had a pelvic exam, measurement of height/weight, and completed paper or electronic questionnaires at home. Leisure time PA was assessed using the Lifetime Physical Activity Questionnaire (LPAQ). A medical history form and the questions "Did you experience urine leakage with physical activity including housework, yard work, or activity associated with your occupation" and "if yes, did urine leakage cause you to change the type or amount

of physical activity you did during this period?" were also included. **Results:** 39% of participants reported experiencing urine leakage in the past year; 28% reported changing the type or amount of PA performed. 9% of women reported urine leakage during the 22-34 age epoch; 31% of this group reported changing the type or amount of PA. 38% of women reported urine leakage during the 51-56 age epoch and only 18% of this group reported changing PA habits. Women in the 22-34 age epoch had the largest observed difference in leisure time PA as a function of reporting urine leakage. The median leisure PA for women who reported experiencing urine leakage and a change in PA was 12.96 MET*hours/week, compared to 21.6 MET*hours/week by women who reported no urine leakage. **Conclusions:** Almost 40% of all women in this subsample reported experiencing urine leakage with physical effort in the past year, and over 25% of those women reported changing the type or amount of PA performed because of urine leakage. The high prevalence of urinary leakage may predispose women to lower levels of healthful PA. **Clinical Relevance:** Limiting the type or amount of leisure time PA due to urine leakage could lead to inadequate amounts of PA in women who report this important problem. This information is useful in identifying women's barriers to PA. Physical therapists should address this potentially modifiable risk factor in women with urinary incontinence.

TITLE: The Effects of Exercise on Fatigue & Quality of Life in Women After Breast Cancer: A Pilot Study

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ABSTRACT BODY:

Purpose/Hypothesis: It is well documented that exercise reduces the chance of recurrent breast cancer in postmenopausal women, as well as decreases the side effects of treatment for breast cancer that are often more devastating than the cancer itself. The goal of the current study was to develop a comprehensive health program for breast cancer survivors that was easily replicated in other settings. The purpose of this study was to evaluate the psychosocial benefits of exercise, as well the effects of exercise on fatigue. **Number of**

Subjects: Fifteen women from mid-Missouri, with a diagnosis of breast cancer, were enrolled in the study. **Materials/Methods:** The current study was a 6-week supervised program of exercise instruction and education followed at a community exercise facility in Columbia, MO. Participants were offered facility access for 20 visits but were required to meet with the research team twice a week for 6 weeks for 30 minutes for educational instruction including resistance training (RT) and/or aerobic exercise. Participants were instructed on the use of 10 upper and lower body RT exercise stations and aerobic exercise equipment. The FACT-G QOL Questionnaire and Brief Fatigue Inventory were administered before and after 6-week participation in the exercise program. Summary scores for the FACT-G QOL were calculated by summing the answer choices for each of the 5 domain of the questionnaire, with each section evaluated separately. Summary scores for the Brief Fatigue Inventory were calculated by summing the answer choices for each of the 4 sections, with all sections evaluated together. Paired samples *t* tests were used to evaluate changes over time. Statistical significance was accepted at $P < .05$. **Results:** There was a significant improvement in self-reported fatigue from pre- to posttraining using the Brief Fatigue Index $t(14) = 4.06, P = .001$. The Physical Well-Being domain of the FACT-G QOL Questionnaire ($t[8] = 3.17, P = .01$) showed significant improvement from pre- to posttraining. The 4 other domains of the FACT-G QOL (Social/Family Well-Being, Relationship with Doctor, Emotional Well-Being, Functional Well-Being) showed no change with training (all $P > .05$). However, Emotional Well-Being demonstrated a trend ($t[8] = -2.01, P = .08$). **Conclusions:** A 6-week supervised exercise program combined with education resulted in significant decrease in fatigue as noted through change in pre- and posttraining scores in the Brief Fatigue Index. The FACT-G QOL Questionnaire data suggest there were improvements in physical well-being benefits as well as potential benefits to emotional well-being. **Clinical Relevance:** This study concluded that both resistance and aerobic exercise play a role in decreasing fatigue and improving physical well-being of post-breast cancer patients. These results should influence the treatments and education given to post-breast cancer in the physical therapy setting.

TITLE: Cognitive, Physical or Dual Fatigue Tasks Enhance Pain, Perceived Cognitive Fatigue and Perceived Physical Fatigue in People With Fibromyalgia When Compared to Healthy Controls

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ABSTRACT BODY:

Purpose/Hypothesis: Fibromyalgia is a condition characterized by chronic widespread muscle pain and fatigue. Fatigue is described in terms of both physical and cognitive. However, the interaction between pain and fatigue is unclear. The primary objective of this study was to determine if pain, perceived cognitive fatigue, and perceived physical fatigue were enhanced in participants with fibromyalgia compared to healthy controls during a cognitive fatigue task, a physical fatigue task, and a dual fatigue task. We hypothesized that pain and fatigue would be significantly enhanced in people with fibromyalgia to a greater extent than healthy controls during fatiguing tasks. **Number of Subjects:** In the current study, 24 individuals with fibromyalgia (23 female, 1 male) aged 25-72 (female mean = 51.87, SD = 11.11; male 65) and 34 healthy controls (33 female, 1 male) aged 25-77 years (female mean = 45.03, SD = 14.62, male 47) participated in the study. **Materials/Methods:** Resting pain, perceived cognitive fatigue, and perceived physical fatigue were assessed during each task using visual analogue scales. Function was assessed with shoulder range of motion and grip. Assessment of each outcome measure was taken before and after each fatigue task. A cognitive fatigue task (Controlled Oral Word Association Test) or a physical fatigue task (Valpar peg test) were done individually and combined for a dual fatigue task. **Results:** People with fibromyalgia had significantly higher increases in pain, cognitive fatigue, and physical fatigue when compared to healthy subjects with all fatigue tasks ($P < .01$). For the physical fatigue task, people with fibromyalgia performed less well when compared to healthy controls during transfer of pegs from waist to overhead ($P < .001$). **Conclusions:** These data show that people with fibromyalgia show larger increases in pain, cognitive fatigue, and physical fatigue to both cognitive and physical fatigue tasks, and reduced function in a physical fatigue task. Physically fatiguing tasks, such as exercise and regular activity, may impact not only pain but also perceived physical fatigue and perceived cognitive fatigue. Conversely, cognitive fatiguing tasks such as education or verbal instruction may impact pain and not only perceived cognitive fatigue but also perceived physical fatigue. Thus, there appears to be a significant interaction between perceived pain and perceived fatigue, and between cognitive and physical fatigue. **Clinical Relevance:** Physical and cognitive activity likely impacts

pain and fatigue and is important for the clinician to consider in regard to clinical instruction and education, clinical performance, and exercise performance in treatment of individuals with fibromyalgia.

TITLE: A Study on Intimate Partner Violence Education for Physical Therapists

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ABSTRACT BODY:

Purpose: The purpose of this systematic literature review is to (1) present research on current IPV screening prevalence within the medical community, (2) emphasize the importance of IPV screening for physical therapists, (3) identify barriers that exist to IPV screening, (4) examine current teaching methods for IPV within healthcare curriculums, and (5) identify valid and reliable IPV screening tools for clinical application.

Description: A comprehensive systematic literature search on 6 different databases was completed from September 2012 to March 2013. Search terms included intimate partner violence (IPV), domestic violence, health providers, and IPV screening tools. Randomized control trials were included if they evaluated at least 1 IPV screening tool utilized in the study. Three independent reviewers screened 5664 results and identified 55 relevant research studies. These studies were evaluated utilizing a modified PEDro scale. **Summary of Use:** Methodological quality ranged from 6 to 13/14. Five studies were excluded due to poor-quality research data or design. Despite the established importance of IPV screening by healthcare professionals, the research has demonstrated that healthcare professionals are not providing universal screening for all patients. Only 8% of physical therapists routinely screen for IPV. Challenges exist in the healthcare field in the screening of patients for IPV, including (1) differing cultural perspectives on IPV, (2) time constraints, (3) language barriers, (4) lack of knowledge, and (5) healthcare practitioners' negative perceptions. The most frequent provider-related barriers included "lack of provider education regarding IPV, lack of time, and lack of effective interventions." PREMIS (Physician Readiness to Manage Intimate Partner Violence Survey) is a 15-minute survey that Short et al found to have good internal consistency and reliability (Cronbach's $\alpha \geq .65$). PREMIS is more current and comprehensive than previous standardized IPV assessment tools and can easily be utilized by physical therapists. **Importance to Members:** IPV is a major public health concern with a healthcare cost of nearly \$4.1 billion and affects nearly 1/3 of women during

their lifetime. Three recommendations can be made for physical therapists based on various models for IPV education. 1) Experiential learning. 2) Utilize APTA's Blueprint for Teaching Cultural Competence applying it to IPV screening. 3) Utilization of the PREMIS tool by physical therapists to assess IPV. The prevalence of IPV and the lack of physical therapist IPV screening calls for an evaluation of the requirements and screening tools available for physical therapists in the clinic. By improving education for IPV screening, new clinicians can be better prepared for detecting and reporting IPV once they are practicing physical therapists. Research is limited concerning the methods by which physical therapists are instructed in IPV screening.

TITLE: Incidence and Impact of Urinary Incontinence, Morbidities, and Health Related Quality of Life for Postpartum Bangladeshi Women: Comparison by Birth Mode

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PRESENTER: Lori Walton, PT, DPT, PhD, CLT

ABSTRACT BODY:

Purpose/Hypothesis: To investigate the incidence of urinary incontinence (UI) and relationship between UI, comorbidity, and health related quality of life (HRQOL) of postpartum Bangladeshi women. **Number of Subjects:** $n = 94$. **Materials/Methods:** Prospective, correlational design ($n = 94$) postpartum Bangladeshi women, ages 18 to 44 years, with history of 1 or more obstetrical deliveries within the last 3 years. This study was implemented at the Center for Rehabilitation of the Paralyzed (CRP) in Bangladesh after approval of CRP Ethics Board and IRB approval at Nova Southeastern University. Subjects who met the inclusion criteria for the study and signed the written consent were included in the study and completed the Bengali version of SF-36 and IIQ-7. **Results:** Six subjects were eliminated from the study because of comorbidity exclusion factors. Eight subjects were excluded from main data analysis and utilized for comparison because of "mixed birth mode" (MBM). UI incidence was reported at 45.3% ($n = 86$) total, 44% CS, and 46.6% for NVD (CS: $n = 41$; NVD: $n = 45$). IIQ-7 scores and UI presence showed strong correlations in both CS ($\rho = 0.729, 84, P < .001$) and NVD ($\rho = .874, 84, P < .001$). The highest impact of UI was reported in the CS group. One-sample t test reported significant differences for the sample when compared with the

age equivalent means at $\alpha = .05-.001$. Women in the 35-44 age group reported higher UI incidence and decreased HRQOL scores on the SF-36 and IIQ-7. Significant differences in HRQOL were reported for women with “pelvic/abdominal pain” and “UI” compared to those without “pain” or without “UI” and strong inverse correlations ($\rho = 0.597-0.853$) were reported for subjects with “pain” on the SF-36 domains at $\alpha = .001$. The MBD group ($n = 8$) reported UI incidence at 74% and pelvic/abdominal pain at 62.5%. **Conclusions:** No significant difference between birth modes was found in UI and HRQOL measures. A significant decrease in HRQOL for women during postpartum period compared to age-related norms was reported. Report of abdominal/pelvic pain and presence of UI were directly related to HRQOL in this study. Future research should focus on pelvic/abdominal pain in the postpartum period and “mixed birth mode” impact on QOL and UI. **Clinical Relevance:** There are no studies comparing HRQOL with incidence and impact of UI and comorbidities among Bangladeshi women by birth mode. Postpartum UI and comorbidities are physical therapy-related disorders that are commonly seen in the clinic and have a direct impact on health-related quality of life for women.

TITLE: Pelvic Rehabilitation Improves Quality of Life in Women With Chronic Pelvic Pain and Pelvic Floor Disorders: A Retrospective Cohort Study at Mayo Clinic
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PRESENTER: Alison Sadowy, PT, DPT

ABSTRACT BODY:

Purpose/Hypothesis: Chronic pelvic pain is estimated to occur in 3.8% of women age 15-73 years and the prevalence of pelvic floor disorders (stress urinary incontinence, overactive bladder, pelvic organ prolapse, and anal incontinence) is estimated at 37%. While women with pelvic floor muscle dysfunction contributing to chronic pain and pelvic floor disorders may be referred for physical therapy (PT), it is not clear which PT interventions are most commonly used or how they contribute to quality of life (QOL). The purposes of this study were to describe the interventions used in our practice and to compare baseline and postintervention outcomes using the Pelvic Floor Distress Inventory-20 (PFDI-20) QOL questionnaire. **Number of Subjects:** 129. **Materials/Methods:** This was a retrospective cohort study of women who completed a PT program for pelvic floor muscle dysfunction between 2006 and 2011. Demographic data and interventions, including education, therapeutic

exercises, manual therapy, physical agents, and modalities, were abstracted from the medical records. Descriptive statistics were calculated. Mean baseline and discharge PFDI-20 scores were compared with a dependent t test. Additionally, PFDI-20 outcomes were dichotomized such that a 15% or greater decrease was defined as a positive outcome and any change $< 15\%$ was defined as a negative outcome. Associations between outcomes and the presence or absence of various treatment options were examined with chi-square tests. **Results:** The most commonly applied interventions were education, therapeutic exercises, and manual therapies. PFDI-20 scores improved 40.1 ± 38.7 points ($P < .001$) from baseline (113.1 ± 52.9) to discharge (73.0 ± 45.3). Based on our operational definition for a positive outcome, 95 patients (73.6%) had positive outcomes whereas 34 patients (26.4%) had negative outcomes. Positive outcomes were associated with participation in “knack” and bladder retraining exercises. **Conclusions:** Almost all the patients received some form of education, manual therapy, and therapeutic exercise as deemed appropriate by the PT. A minority of patients were treated with electrical or thermal modalities. Most patients (73.6%) reported a meaningful improvement in their PFDI-20 score following their PT episodes of care. **Clinical Relevance:** Taking a comprehensive, systematic approach to patients’ physical and emotional conditions, customizing care, and utilizing the PFDI-20 QOL questionnaire has been a hallmark of our practice. Results of this chart review may be used to guide pelvic PT practice and justify to referring clinicians and insurance companies the value of care. Results suggest that PTs provide care that lessens the burden of symptoms of pelvic floor muscle dysfunctions and improves QOL.

TITLE: Is the Active Hip Abduction Test a Valid Assessment Tool for Lumbopelvic Control in Pregnant Women?

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ABSTRACT BODY:

Purpose/Hypothesis: Forty-five to 72% of women report low back pain (LBP) and/or pelvic girdle pain (PGP) during pregnancy, increasing to 85% to 94% with subsequent pregnancies. Developing a quick screening process for healthcare providers working with pregnant women may be useful in identification and management to identify and manage women who are “at risk” for LBP or increased disability during pregnancy. The Active Hip Abduction (AHAAbd) test

has been shown to have utility ($Sn = 0.73-0.85$) as a clinical assessment tool in patients with LBP, but has not been tested in pregnant women. The purpose of this preliminary study was to determine whether the AHAbd Test could discriminate between pregnant women with and without LBP. **Number of Subjects:** $N = 38$; $n = 21$ with LBP, $n = 17$ without LBP. **Materials/Methods:** Healthy, singleton pregnant women (28.9 ± 5.69 years), less than 37 weeks' gestation with no prior history of non-pregnancy-related LBP were recruited for this study. Subjects were videotaped as they performed the AHAbd test which entailed hip abduction in side-lying while attempting to maintain neutral frontal plane alignment. Tests were scored by 2 trained examiners on a scale of 0 to 3 (0 = no loss of control, 3 = severe loss of control). A score of > 2 on either side was considered a positive test. Contingency tables were used to calculate sensitivity (Sn), Specificity (Sp), Likelihood (+LR, -LR), and odds ratios (OR) for presence/absence of LBP. **Results:** Predictive statistics with 95% confidence intervals were: $Sn = 1.0$ (0.84, 1.0), $Sp = 0.17$ (0.06, 0.39), +LR = 1.2 (-.98, 1.5), -LR and odds ratios were unable to be calculated due to the absence of false (-) tests in this sample. **Conclusions:** The AHAbd test cannot adequately discriminate presence or absence of LBP in subjects who are pregnant. However, 100% of subjects with LBP and 83% without LBP had poor frontal plane control as assessed by this test. In previous studies, 18% of asymptomatic, nonpregnant subjects had (+) scores on the AHAbd test. Of these, 75% went on to develop LBP during a functional task, indicating that frontal control deficits may be a risk factor for LBP development. During pregnancy, decreased lumbopelvic control may be heightened due to normal pregnancy-related changes in hormonal and musculoskeletal systems leading to increased risk of LBP. **Clinical Relevance:** The results from this study revealed pregnant women demonstrate poor frontal plane control. Screening to identify lumbopelvic control deficits may be important as preventive measures, targeted toward specific control deficits, could be initiated early and potentially mitigate this LBP risk factor as pregnancy advances.

TITLE: Pelvic Floor Dry Needling in a Male Patient With Multiple Sclerosis and Urinary Urgency: A Case Report

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PRESENTER: Shannon McCarthy, PT, DPT

ABSTRACT BODY:

Background & Purpose: Multiple Sclerosis (MS) is a debilitating condition that can cause many quality

of life issues. One of these issues is urinary urgency, which is present in close to half of patients with MS. Treatment of urinary urgency can be limited in its effectiveness—surgery is rarely indicated, and pharmacological treatment can have side effects. Pelvic floor (PF) rehabilitation has been shown to be effective in a few studies, but research is limited. This case report presents a novel approach to the management of urinary urgency in patients with MS utilizing trigger point dry needling (TDN) and electrical stimulation and provides evidence to assist clinicians in the management of similar cases. **Case Description:** A 44-year-old male with a 7-year history of relapsing remitting MS presented with urinary urgency that began following a relapse 3 years prior. Previous physical therapy aimed at PF strengthening failed to produce changes. At initial evaluation he presented with hypertonicity of the PF and a manual muscle test of grade 1 (flicker). His Overactive Bladder Questionnaire (OAB-q) symptom severity score (OAB-q-SS) at intake was 75 (0-100 point transformed score, higher scores indicate greater severity). His health-related quality of life subscale (HQRL) of the OAB-q was 40 (100 point transformed score, higher scores indicate a better HQRL). According to his bladder diary recorded the week prior to treatment, he had an average of 7.2 urgency episodes per day causing him to excuse himself from meetings with clients, urinate beside the road, and leave his children's school activities. He awoke an additional 3 times per night to urinate. He was seen 3 times per week for 4 weeks. Treatment consisted of (1) TDN to the obturator internus, bulbospongiosus, ischiocavernosus, transverse perinei, levator ani, and electrical stimulation directed through a needle to the perineal body, and (2) TDN to the abdominal muscles. Treatment of the PF and abdominal muscles was performed during alternating visits. **Outcomes:** After 4 weeks of treatment, his OAB-q-SS score was 17.5 (decrease of 57.5 points) and HQRL score was 88 (increase of 48 points). For the week following, he had less than 1 episode of urgency per day (per bladder diary). He did not have to excuse himself from meetings with clients, was able to drive 2 hours without stopping, and could sit through children's activities without having to urinate. He slept through the night for 3 of 7 nights and awoke once per night during the other 4. His manual muscle test increased to a grade 3 and he was less hypertonic. Results were maintained at 3 months. **Discussion:** Urinary urgency is extremely common in patients with MS and can greatly affect quality of life. Here, we present a case of successful treatment of urinary urgency, using a novel approach of TDN to the PF and abdominal muscles. We hope that this case study will help clinicians to treat patients who have failed or choose not to utilize other forms of treatment.