Fall Risk Reduction Through PT Management of Incontinence

Fisher, Steve; Stanich, Starr; Hong, Ickpyo; McGaugh, Janna; Jang, Hyun-jeong; Galloway, Rebecca; Utsey, Carolyn Less Fall Risk Reduction in the Elderly Through the Physical Therapy Management of Incontinence Journal of Women’s Health Physical Therapy. 43(1):3-9, January/March 2019

Notable: Multiple PhD authors, incredibly well thought out and well-designed INTERVENTIONAL study using NIH standards and published as open access via JWHPT

This article has a Video Abstract at http://links.lww.com/JWHPT/A20

Background: Urinary incontinence as a target for fall risk reduction has not been extensively studied. The presence of OAB increases the likelihood of being injured from a fall while rushing to the bathroom. The more severe the symptoms, the more likelihood of a fall. In adults with OAB symptoms, the fear of finding oneself too far from a bathroom reduces out of home mobility in older adults. The consequences of low mobility include a debilitating spiral of deconditioning, decreased muscle strength, frailty, depression, loss of confidence, and falls. In 2018, the US government issued new Physical Activity Guidelines (PAGs). In pelvic health PT we are focused on QoL related to LUTS - yet Today, about half of all American adults—117 million people—have one or more preventable chronic diseases. Seven of the ten most common chronic diseases are favorably influenced by regular physical activity. Yet nearly 80 percent of adults are not meeting the key guidelines for both aerobic and muscle-strengthening activity, while only about half meet the key guidelines for aerobic physical activity. This lack of physical activity is linked to approximately $117 billion in annual health care costs and about 10 percent of premature mortality. Does UI lead to reduced PA????

New guidelines emphasize balance exercises for older adults. What is our responsibility as PTs to promote PA, and how does what we do as Pelvic Health PTs impact this?

Aim: To assess the effectiveness of a focused evidence-based physical therapy intervention for urinary incontinence in older women on reducing fear of falling. Authors designed a multiple baseline single-group pragmatic pilot study to assess the effectiveness of a focused evidence-based physical therapy (PT) intervention for UI in older women on reducing fear of falling. (proxy for risk of falling). Authors hypothesized that fear of falling would decrease along with improvement in UI.

Why is fear of falling a proxy for risk of falling? Behavioral fear of falling is a symptom. Similar to kinesiophobia- when people in pain are afraid of provoking pain, and so they may avoid
movement or an activity to avoid pain. The same is true with fear of falling they will avoid the activity to avoid the sensation of fear. Paradoxically, this behavior exacerbates fear of falling and increases risk of falling. (B. Werner, expert opinion (5-28-19))

**Study Design:** A multiple-baseline, quasi-experimental, single-group, pre-/post pilot study spanning 8 weeks, with a 1-month follow-up.

**Methods:** Twenty women 50 years and older with urge or mixed incontinence and a score of 20 or more on the Falls Efficacy Scale-International (FES-I) were recruited from 2 outpatient pelvic health clinics associated with a university health system in the southwestern United States. Men were excluded.

**Primary Outcomes:** FES-1 is a The Falls Efficacy Scale International (FES-I) and the Short Falls Efficacy Scale International (Short FES-I) are measures of “fear of falling” or, more properly, “concerns about falling”, which are suitable for use in research and clinical practice. I1Q-7 assesses the impact of incontinence on a variety of domains of functioning, including social, physical recreation, and emotional health.

**Interventions:** A digital pelvic examination established the parameters for contraction hold times, endurance, and repetitions (? PERFECT?). Biofeedback (electromyography [EMG]) was used during the early clinic visits to provide information on contraction quality in addition to promoting awareness of PFM and motivation for performing the exercises. Vaginal sensors were used. Physical therapy consisted primarily of a standardized program of progressive pelvic floor strengthening exercises. The PFM training progressed along a sequence of activities that initially emphasized increasing awareness and voluntary control, to more automatic reactions during functional activities. (EXCELLENT description of PT interventions that we all may learn from is on page 5!) VERY SIMILAR TO MY APPROACH

**Secondary Outcomes:** (Table 2) (Notably extensive, standardized, and NIH protocol)

- Short Physical Performance Battery –
  - includes 3 objective tests of lower body function: (1) a timed 12-ft walk; (2) 5-timed, repetitive chair stands; and (3) a hierarchical test of standing balance. For each test a 5-level summary scale (0-4) is assigned using established cut points. The individual summary scores are then summed, creating a total score range of 0 to 12. High scores indicate better functioning.
- PROMIS Patient-Reported Outcomes Measurement Information System (PROMIS) network measures of adult self-reported health for mental, social, sleep, and functional domains. The National Institutes of Health PROMIS network of measures consists of a repository of validated standardized tests intended to facilitate comparative effectiveness studies.
- Physical Activity- Step activity was assessed via ankle-worn accelerometry
Questionnaires and physical performance measures were administered at baseline 1; at the start of physical therapy (baseline 2); midpoint of therapy; and at discharge. The FES-I was administered by phone at a 1-month follow-up.

**Results:** There were statistically significant improvements from baseline for the FES-I ($P = .02$), the Incontinence Impact Questionnaire-7 (IIQ-7) ($P < .01$), and a measure of Life Satisfaction ($P = .01$). Most of the improvement in the primary outcomes (FES-I and IIQ-7) occurred in the first 4 weeks of therapy. (!!!!*********) (DON’T WE SEE THIS CLINICALLY? YES!) Changes in the FES-I and the IIQ-7 followed a similar trajectory.

Subjects walked an extra 943 steps/day Table 2

**Discussion:** Previous research on the association between function and UI also suggests that improvement in physical performance is not strongly linked to a reduction in UI symptoms. Tak et al found that better physical performance did not lead to a reduction in UI severity. Despite previously shown associations between poor function and UI, the authors suggested that there were possibly other more dominant causes that were not improved by traditional lower extremity strengthening and functional exercises.

The exercise component of intervention in the current study was focused on the pelvic floor and surrounding core musculature. Lower extremity strengthening was not a major part of the therapy course. Nor were specific exercises aimed at improving balance. Findings do lend support to the idea that it is activity restriction, and its consequences that mediate the relationship between UI and increased fall risk in this population. Restriction of life roles and activity has in fact been shown to be a stronger predictor of actual balance and mobility abilities than fear of falling in community-living older adults. (Allison 2013)

**Conclusions:** Findings suggest that physical therapy interventions for incontinence in older women may be an important treatment option for also addressing fear of falling.

**Questions for Participants:**
Do you assess and measure physical activity in your patients with UI?  
Do you discuss PAGs?  
How does your typical intervention compare to the intervention in this study?  
How can you capitalize on the results of this study to attract referrals and improve public health all at the same time?