CERTIFICATION IN PELVIC FLOOR REHABILITATION: A GUIDE FOR OCCUPATIONAL THERAPISTS

A Thesis submitted to the faculty at Stanbridge University in partial fulfilment of the requirements for the degree of Master of Science in Occupational Therapy

by

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Dedication

We are proud to dedicate our thesis to our advisor, Angela Baker, who has been a huge encouragement and support throughout this journey. Her passion for educating future occupational therapists shows through her dedication to cultivate excellent scholarship and academia in her peers and students. She has been an inspirational mentor whose unwavering support and enthusiasm have led to the success of this project. Dr. Baker's dedication to seek occupational justice for individuals who are marginalized is admirable and compels others to follow her vision. We would also like to dedicate our thesis project to our family and friends who have encouraged us to persevere through this process.

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Abstract

The prevalence of pelvic floor dysfunctions is on the rise, affecting one-third of adult women living in America. Occupational therapists (OTs) are underrepresented in the field of pelvic floor rehabilitation, yet other health professionals do not address the occupationally relevant psychosocial factors and environmental barriers. This project provides a description of the pelvic floor, OT's role in pelvic floor rehabilitation, and opportunities for OTs to become certified or receive additional education in pelvic floor rehabilitation.

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Certification in Pelvic Floor Rehabilitation: A Guide for Occupational Therapists

Pelvic floor dysfunction is a global term for a multitude of disorders and dysfunctions relating to the lumbopelvic myofascial and visceral structures located in and around the pelvic region (Messelink et al., 2005). The primary functions of the pelvic floor muscles are supportive, sexual, and sphincteric (Pool-Goudzwaard, Van Dijke, Van Gurp, Mulder, Snijders, & Stoeckart, 2004). Pelvic floor dysfunction includes sexual dysfunction (dyspareunia and vaginismus in women and erectile dysfunction in men), voiding problems, urinary incontinence, fecal incontinence, pelvic organ prolapse, and defecatory dysfunction (Sapsforda, 2004). Pelvic floor disorders are usually accompanied by pain, often resulting in chronic pelvic pain. The number of individuals in the United States with pelvic floor dysfunction is on the rise. Conservative estimates show that one-third of all adult women suffer from at least one pelvic floor dysfunction (Milsom, 2009). Pelvic floor dysfunctions "result in significant health care expenditures, and may lead to substantial disability and impaired quality of life," (National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health [NIDDK], 2016a, p. 1). These debilitating factors can create significant impairments in daily occupations.

Proposed Solution

The research question guiding this evidence-based project is as follows: For occupational therapists interested in pelvic floor rehabilitation practice, what range of options are available to gain successful entry into the field of pelvic floor rehabilitation? The final deliverable document is an information-based resource, titled: "Certification in Pelvic Floor Rehabilitation; A Guide for Occupational Therapists," from here forward referred to as the "guide." This guide serves as a "How-To" resource for occupational

therapists (OTs) interested in pursuing pelvic floor rehabilitation. The guide includes a list of programs that offer advanced education for certification in pelvic floor rehabilitation, as well as an introduction to pelvic floor rehabilitation and its relevance to the field of OT.

Significance of the Project to Occupational Therapy

Many health professions can specialize in the pelvic floor, although physical therapy is currently the predominate profession (Herman & Wallace, 2016). Occupational therapists (OTs) are underrepresented in the field of pelvic floor rehabilitation, yet they provide a unique vantage point in their approach. The most significant contribution that OTs bring to the table is expertise in the psychosocial aspects that coexists with pelvic floor dysfunction. Pelvic floor dysfunction has an immense effect on the mental wellbeing of patients. In 1982, Norton reported that 76% of women who had attended a urodynamic clinic believed that incontinence affects mental health (Hajjar, 2004). Occupational therapists are distinctly suited to fill this gap in healthcare provision to patients with pelvic floor dysfunction as they are trained to address these psychosocial barriers.

"Herman & Wallace Pelvic Rehabilitation Institute provides continuing education hours for medical professionals seeking to improve their practice skills for the treatment of pelvic floor/girdle dysfunction and numerous other conditions affecting patients' lives," (Herman & Wallace, 2016, p.1). Herman and Wallace (2016), as well as the *Occupational Therapy Practice Framework: Domain and Process*, 3rd ed., ([*Framework-III*]; American Occupational Therapy Association [AOTA], 2014), recognize that occupational therapists can treat pelvic floor dysfunction. However, there are limited

resources and related information for occupational therapists who wish to practice in this field.

Many health professions have a clearly stated document that summarizes their domain and scope of practice. Occupational therapists use the *Framework-III* (AOTA, 2014) to bring structure and vision to what OTs can do, called the *domain*, and how they implement treatment sessions, namely the *process*. The *Framework-III* (AOTA, 2014) outlines the major values, culture, and evidence-based knowledge of occupational therapy, driving the field of occupational therapy towards excellence. Both Herman and Wallace and the *Framework-III* recognize the positive contributions occupational therapists can have as pelvic floor health practitioners.

Statement of the Problem

The number of women with pelvic floor disorders is projected to increase from 28.1 million in 2010 to 43.8 million in 2050, according to a study completed by the U.S. Census Bureau (Wu, Hundley, Fulton, & Myers, 2009). The U.S population is also aging rapidly, due to the retirement of the baby boomer generation; therefore, the number of individuals impacted by urinary incontinence is projected to increase (Ko et al., 2005). Furthermore, 50%-70% of people experiencing incontinence do not seek help for their condition (Hajjar, 2004). There are several reasons that people do not seek treatment: denial, shame, concerns about surgery, adapting to the situation, or thinking it is an inevitable part of aging (Hajjar, 2004). “Many suffer in silence due to embarrassment and lack of knowledge about available treatment options,” (The National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health [NIDDK], 2016, p.1). Also, there is a lack of communication about the presence of urinary incontinence

(UI) in primary care facilities, with only 25% of doctors inquiring about the presence of symptoms of pelvic floor dysfunction (Hajjar, 2004).

The National Institute of Health cites recent clinical trials suggesting invasive and costly tests commonly performed in women with stress urinary incontinence (SUI) are unnecessary in many cases (NIDDK, 2012). Similarly, Wright (2014) proposed using conservative therapeutic interventions including, biofeedback, manual therapy, and behavioral modifications for treating UI in older women before consideration of surgical intervention. These conservative recommendations indicate a growing need for qualified healthcare professionals to enter into the field of pelvic floor opening the door for occupational therapists to enter this specialty area. Occupational therapists have a unique perspective in working with this population; therapeutic interventions are not only patient driven, but also occupation focused.

Significance of the Problem for Occupational Therapy

The *Occupational Therapy Practice Framework: Domain and Process*, *3rd* ed., ([*Framework-III*], AOTA, 2014), states that occupational therapy directly treats clients with "a distinct and valuable focus on the whole," (p. S4). An occupational therapist's primary objective is to treat the patient holistically. A holistic perspective allows each client to determine the meaning of life, based on of what activities and occupations they engage in across the lifespan. More specifically, OT practitioners give high priority to Activities of Daily Living (ADL's) within the domain of practice. ADL's are self-care skills that are personal, unique, and contextual ([*Framework-III*], AOTA, 2014).

Toileting tasks are a significant ADL associated with the pelvic floor. Unlike other professions, occupational therapists' scope of practice addresses the occupations of

toileting and bowel and bladder dysfunction. Toileting tasks involve transferring to and from the toilet, continence needs, and "intentional control of bowel movements and urination and, if necessary, using equipment or agents for bladder control," ([*Framework-III*], AOTA, 2014, p. S19).

Additionally, the ADLs of, sexuality and fertility are vital for many people throughout their lives. OTs are capable of supporting the occupations of sex and fertility throughout the lifespan ([*Framework-III*], AOTA, 2014). These taboo topics go beyond the medical model and implements holistic care using the client-centered care model. OTs are trained to empathetically and respectfully collaborate with a client to increase biopsychosocial, spiritual, and environmental wellness.

Activity analysis addresses the typical demands of an activity and the skills required to perform common occupations. OTs are trained holistically, taking into account the physiological, psychological, and environmental factors to address occupations such as social participation, work, and leisure ([*Framework-III*], AOTA, 2014). OTs can use pelvic floor rehabilitation therapy to educate clients on how to grade an activity, watch for external and internal barriers, and use assistive devices to increase independence ([*Framework-III*], AOTA, 2014).

The physiological effects of pelvic floor dysfunction can lead to increased depression and anxiety levels which can be detrimental to patient progress in pelvic floor intervention (Khan, Whittal, Mansol, Osborne, Reed & Emery, 2013). Shame and a lowered self-esteem are some of the psychological effects that negatively impact the client's sense of well-being (Khan et al., 2013). OTs are uniquely suited to deal with these mental health issues; the Accreditation Council for Occupational Therapy

Education (ACOTE) standards includes psychosocial training requirements in occupational therapy education (AOTA, 2016).

This project relates to the American Occupational Therapy Foundation (AOTF) research objectives through the AOTA research agenda under the category of health services research by addressing the following goal:

Identify where practice lags behind practice guidelines to provide evidence of the need for quality indicators; Identify, develop, and evaluate occupational therapy's role in community preparedness; Design and implement community-based participatory research to "increase the relevance, acceptability, and usefulness of evidence-based scientific findings in improving" occupational therapy (rehabilitation; AOTA & AOTF, 2011, p. S6)

Purpose and Anticipated Outcome of Project

The final project, "Certification in Pelvic Floor Rehabilitation; A Guide for Occupational Therapists" is a simple to follow guide describing the process required for an occupational therapist to become certified in pelvic floor rehabilitation. The purpose of this project is to provide an accessible document for occupational therapists (OTs) to discover certification routes available in pelvic floor rehabilitation. The guide may provide an opportunity to expand the number of OTs working in pelvic floor rehabilitation, in addition to providing a resource to OTs seeking continuing education units (CEUs) in pelvic floor. The guide has the potential to increase the comfort and competency of OTs in treating pelvic floor dysfunction.

Even for OTs who do not wish to become certified, the guide will present continuing education opportunities for OTs who wish to increase their pelvic floor

rehabilitation intervention repertoire and competency. OTs need to prove their place in this domain and ensure recognition of competency among other health professions. The guide will assist in communicating to multiple disciplines OT's unique role in pelvic floor rehabilitation. Most importantly, this guide may increase the number of OTs working in pelvic floor rehabilitation.

Need for Project

Only two out of ninety-seven certified rehabilitation practitioners who hold Pelvic Floor Practitioner Certification (PFPC) through Herman and Wallace are occupational therapists (Herman & Wallace, 2016). This low percentage demonstrates an opportunity for OTs to enter into the pelvic floor rehabilitation niche. Occupational therapists are eligible to sit for the PFPC exam; other eligible professions include physical therapists, physicians, registered nurses, advanced registered nurse practitioners, and physician's assistants (Herman & Wallace, 2016).

2017 marks the one-hundred-year anniversary of occupational therapy. The Centennial Vision emphasizes a "diverse workforce meeting society's occupational needs," (AOTA, 2016, p. 1). Occupational therapists may need to step into unknown territory to fill the current OT gaps in pelvic floor rehabilitation.

Needs Assessments

A formative needs assessment survey was sent to all, 167, accredited OT master's programs in the US to determine the factors contributing to the shortage of occupational therapists (OTs) in the field of pelvic floor rehabilitation (PFR) (See Appendix A). Fourteen OT programs responded to the Google survey. Results indicated that 57.1% of graduate level OT programs did not encompass anatomy or physiology of the pelvic floor

in the curriculum. Six programs (42.8%) incorporated the pelvic floor education in their program, 83.3% covered the topic in an anatomy or physiology course, while 66.7% covered the pelvic floor briefly in other courses. None (0%) of the programs provided any on-site learning opportunities in pelvic floor rehabilitation. Thirteen out of fourteen (92%) schools did not provide resources for students interested in information regarding how to obtain certification in pelvic floor rehabilitation. The majority of schools, 71.4%, reported interest in receiving additional information on the process of pelvic floor certification.

Target Population

Our target population consists of occupational therapists (OTs) wishing to become certified in pelvic floor rehabilitation. The guide is targeting OT students, entry-level OTs, and practicing OTs. This guide is a helpful resource for OTs who are interested in learning more about pelvic floor rehabilitation or want to earn continuing education units (CEUs). This guide would be beneficial to practitioners who work with pelvic floor disorders, such as in an acute care setting, skilled nursing facility, home health or outpatient clinic.

Literature Review

This comprehensive review of scholarly articles outlines the function of the pelvic floor region and common pelvic floor disorders. In addition, the most effective therapeutic methods for treating pelvic floor dysfunction are highlighted. The synthesis of these articles provides methods to increase the quality-of-life and personal satisfaction in clients using pelvic floor rehabilitation. Furthermore, explained in detail is occupational therapy's role in addressing psychosocial components.

Description of the Pelvic Floor

The pelvic floor region is vital in sexual, supportive, and sphincteric functioning (Pool-Goudzwaard et al., 2004). Within the supportive function, pelvic floor muscles (PFMs) help stabilize the structures and organs within the entire pelvic region. Sexual functions of the pelvic floor for males include erection and ejaculation, plus arousal and orgasm during sex (Rosenbaum, 2007). Sexual and sensual functions of the pelvic floor for females regulate fertility, lubrication, orgasm, and childbearing (Rosenbaum, 2007). Sphincteric functions assist in homeostasis of all bowel and bladder control.

The pelvic floor muscles (PFMs) are a group of muscles that act as one of the primary support systems to stabilize the pelvic region (Pool-Goudzwaard, et al., 2004). The primary muscles of the pelvic floor include the coccygeus, ischiocavernosus, bulbocavernosus, deep transverse perineal, superficial transverse perineal, and levator ani (Newman, 2014). The levator ani muscle is divided into three layers: 1) iliococcygeus and 2) pubococcygeus, which both elevate the pelvic floor and 3) puborectalis which pulls the distal rectum forward and superiorly (Newman, 2014). Some literature includes the ischiococcygeus in the levator ani. Various literature may categorize this levator ani muscle group differently, but universally these are all the muscles encompassed in the pelvic floor.

Pelvic floor muscles play a crucial role in maintaining continence. These muscles can become weakened by pregnancy, childbirth, the absence of use, a decline in estrogen, aging, surgery, and injury (Newman, 2014). Since these muscles hold a higher resting tone than other skeletal muscles, they are more prone to hypertonicity often induced by stress (Newman, 2014). When the PFMs increase in tone and become hypertonic, it

forces the sarcomeres to shorten and causes low levels of functioning (Newman, 2014). The medical field has moved to a more conservative approach, recommending rehabilitative services before surgery (Neumann, Tries, & Plummer, 2009). The *Occupational Therapy Practice Framework: Domain and Process*, *3rd ed*., recognizes that occupational therapists address client factors, including "structures related to the digestive, metabolic, and endocrine system", in addition to "structures related to the genitourinary and reproductive system," ([*Framework-III*], AOTA, 2014, p. S24). With the pursuit of advanced education in pelvic floor rehabilitation, occupational therapists are one of the few branches of allied health care services recognized as equipped to treat pelvic floor disorders (Herman & Wallace, 2016).

Quality-of-Life

The World Health Organization (WHO) defines health not merely as an absence of disease, but as a state of "physical, mental, and social well-being," (Office of Disease Prevention and Health Promotion [ODPHP], 2016, p. 1). Regularly, health and quality-of-life are one in the same. The American Office of Disease Prevention and Health Promotion (2016) set a goal in Healthy People 2020 to enhance national health; "improve health-related quality-of-life and well-being for individuals" (p. 1). Health-related quality-of-life (HRQOL) is a holistic concept encompassing mental, physical, emotional and social functioning (ODPHP, 2016). Persons with a pelvic floor dysfunction experience various symptoms and factors that impact daily life. For this reason, self-administered questionnaires are given to measure QOL in clinical treatment. An essential concept of HRQOL for occupational therapy is that it analyses the effects that health has

on an individual's personal satisfaction and well-being in their daily occupations (ODPHP, 2016).

Prevalence and Incidence

The two most prevalent pelvic floor disorders include urinary incontinence (UI) in women and prostatitis in men. Both disorders can lead to chronic disability if left untreated over time. Other pelvic floor dysfunctions include but are not limited to irritable bowel syndrome (IBS), interstitial cystitis (IC), bladder pain syndrome (BPS), chronic pelvic pain, and sexual dysfunctions. The high prevalence of these dysfunctions in the United States population indicates a need for competent practitioners trained in the most effective therapeutic interventions for pelvic floor dysfunctions.

Prostatitis

The most common urinary tract problem for men under 50 years of age is prostatitis (NIDDKa, 2016c, p. 1). This pelvic floor dysfunction accounts for approximately two million medical visits in the United States annually (NIDDKa, 2016). Prostatitis is a general term for inflammation of the prostate, which can be caused by a variety of reasons. The leading causes are bacterial infection, viral infection, and trauma (NIDDK, 2016c). Chronic prostatitis, also referred to as chronic pelvic pain syndrome, affects 10-15% of the United States population (NIDDK, 2016c). While chronic pelvic pain syndrome is more common for men, it remains the least understood type of prostatitis (NIDDK, 2016c).

Urinary incontinence

The high prevalence of UI, in conjunction with decreased functioning and participation, indicates the huge demand for therapists to specialize in this practice area.

According to the National Institute of Health (NIDDK, 2016a), 25 to 45 percent of women have some degree of [urinary incontinence] UI. In women ages 20 to 39, 7 to 37 percent report some degree of UI. Nine to 39 percent of women older than 60 report daily UI. Women experience UI twice as often as men. Pregnancy, childbirth, menopause, and the structure of the female urinary tract account for this difference. (p. 1)

The largest community-based study sent out a questionnaire to 27,937 Norwegian women in search of finding the prevalence of women over age 20 with urinary incontinence (UI; Hannestad, Rortveit, Sandvik, & Hunskaar, 2000). The study found 25% of women live with UI. Of those with UI, 50% reported symptoms of stress-induced urinary incontinence (SUI) alone, 10% urge urinary incontinence (UUI) alone, and 33% mixed urinary incontinence (MUI) alone (Hannestad, Rortveit, Sandvik, & Hunskaar, 2000). SUI is usually the result of "structural defects of the neuromuscular and connective tissues supporting the bladder neck and urethra, with the impact of the first vaginal delivery as the key etiological factor" (Brunstorm & Lose, 2008, p. 384). The structural changes often occur in women post-pregnancy and with aging (Brunstorm & Lose, 2008; Rortveit & Hunskaar, 2006; Viktrup, Rortveit, & Lose, 2006). UUI, known as bladder overactivity, is often the result of aging or acts as a comorbidity of various neurological disorders such as a stroke, Parkinson's, multiple sclerosis, and spinal cord injury (Brunstorm & Lose, 2008). MUI is categorized by a mix of both symptoms of SUI and UUI. Women are more likely than men to have symptoms of all types of UI (Brunstorm & Lose, 2008.) This study serves significant importance to pelvic floor rehabilitation practitioners because it assists in educating the therapists of both the causation and prevalence of clients with UI. Being aware and competent in identifying

the various types of UI can help the therapists choose a method of treatment that is most effective in addressing the individual's needs.

Maclennan, Taylor, Wilson, and Wilson (2000), conducted a study that measured the prevalence of urinary incontinence in diverse populations. The results showed that self-reported urinary incontinence (UI) was 4.4% in men while in women with UI peaked to 35.3%. Pelvic floor dysfunction is not gender specific; however, urinary incontinence is more prevalent in women. Women aged 70-74 reported pervasive rates of UI which spiked at 51.9%, according to a study by Maclennan et. al. (2000). The authors stated that women who experience pregnancy over 20 weeks or childbirth regardless of the delivery method increase the prevalence of pelvic floor dysfunction (Maclennan et. al., 2000). This first-generation comprehensive study conducted cross-sectionally on the general population, showed that 46.2% of women and 11.1% of men recognized some type of pelvic floor dysfunction (Maclennan et. al., 2000). The risk of acquiring pelvic floor dysfunction significantly increases with age and across the lifespan (Maclennan et. al, 2000).

Irritable bowel syndrome

Irritable Bowel Syndrome (IBS) is defined as "recurrent abdominal pain together with diarrhea, constipation or a combination of both" (Prott, Shim, Hansen, Kellow, & Malcolm, 2010, p. 764). This chronic disorder has astronomical healthcare costs along with financial deficits due to absent workdays (Prott et al., 2010). According to Harris, Hansel, DiBaise, and Crowell (2006), IBS can be caused by genetic, environmental, or stress factors. Approximately 20% of North Americans have self-reported or been diagnosed with IBS, just over half of whom seek treatment through primary care

physicians with 12% reaching out to their primary care doctor for treatment (Harris et al., 2006). IBS has no known cure; however, there is a need to understand more successful psychosocial and physical interventions specific to this chronic condition.

Mentioned in a large random population study, irritable bowel syndrome is associated with a low quality-of-life. IBS patients are mostly women that have coexisting diagnoses and are more likely to have interstitial cystitis, chronic pelvic pain, dysuria, fibromyalgia, chronic fatigue syndrome, anxiety, and depression (Wang et al., 2010). Occupational therapists work with various clients with IBS symptoms and should utilize evidence-based interventions to increase quality-of-life in daily activities.

Sexual dysfunction and chronic pelvic pain

There are nine sexual dysfunction disorders according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) which are categorized into four subgroups, namely; sexual desire disorders, arousal disorders, orgasm disorders, and pain disorders. Sexual dysfunction has an extremely high prevalence rate at 46% of the general population affected (Fruhauf, Gerger, Schmidt, & Barth, 2013). Sexual health is a vital part of overall health, well-being, and quality-of-life that clients experience, making sex as an occupation a crucial element to address in the realm of occupational therapy. According to the *Occupational Therapy Practice Framework III: Domain and Process* (AOTA, 2014), sexual activity is an activity of daily living (ADL) defined as, “Engage in activities that result in sexual satisfaction and/or meet relational or reproductive needs” (p. S19). Sexual dysfunction, often accompanied by sexual pain, remains a neglected topic due to the lack of knowledge, understanding, and often inhibition of the practitioner to address these needs.

Chronic pelvic pain (CPP) afflicts one in seven women in the United States, and often the cause remains undiagnosed (Zoorob et al., 2015). Sexual pain disorders in women consist of vaginismus, inability to allow vaginal penetration, and dyspareunia, pain experienced during sexual intercourse or any other vaginal penetration (Rosenbaum, 2013). Sexual pain disorders (SPDs) have a myriad of causes stemming from both physiological and psychological etiologies. Physiologically, there is often hypertonicity of the pelvic floor musculature and alterations in central pain processing. The characteristics of hypervigilance, lower self-efficacy, higher catastrophizing, and fear of pain directly associate increased pain with intercourse (Rosenbaum, 2013). Occupational therapists are uniquely equipped to treat clients with sexual dysfunction and pelvic pain, given the holistic nature of the profession.

Sexual intimacy and related dysfunction are often neglected topics in health care but remain an occupation beneficial to overall functional health. Recently, sexual dysfunction has been shown to have physiological and psychological etiologies. For this reason, occupational therapists are a perfect fit to tackle this prevalent and complex problem. Occupational therapists are trained in psychosocial interventions, specifically mindfulness, which makes them uniquely suited to move into this area of health care.

Treatment

Over the last ten years, the medical guidelines have moved from advising surgical and pharmacological intervention for pelvic floor dysfunction to behavioral techniques such as habit training, regular toileting, bladder and bowel retraining, diet and fluid regulations, and pelvic floor muscle training (Neumann, Tries, & Plummer, 2009). Occupational therapists are trained in intervention approaches that utilize the behavioral

frame of reference, making the occupational therapist distinctly qualified to treat patients with pelvic floor dysfunction. Behavioral therapy includes bladder drills, bladder training, habit training, timed voiding, and pelvic floor muscle training in combination with biofeedback. Bladder training is comprised of timed voiding habits and bladder function, whereas pelvic floor training includes control of the muscles at the bladder outlet and increased sphincter tone (Davila, Ghaniem, & Wexner, 2008.) The *Occupational Therapy Practice Framework: Domain and Process*, *3rd* ed., classifies education as, "Imparting of knowledge and information about occupation, health, well-being, and participation that enables the client to acquire helpful behaviors, habits, and routines that may or may not require application at the time of the intervention session", ([*Framework-III*], AOTA, 2014, p. S30). Due to an increase in demand for conservative treatments like behavioral interventions, there is a growing need for more pelvic floor practitioners. Occupational therapists could satiate this need by providing client-centered evidence-based treatment interventions.

Urinary Incontinence

The urology department at the University of Modena conducted a 27-month clinical study on sixteen patients with urinary incontinence (UI) to determine the effectiveness of using a comprehensive pelvic floor rehabilitation approach in treating women with UI (Rivalta, Sighinolfi, Micali, De Stefani, & Bianchi, 2010). This combined approach encompassed an intervention of functional electric stimulation (FES), biofeedback (BFB), pelvic floor muscle exercise (PFME) alone, and PFME using vaginal cones (PFME-VC). The study measured change in quality-of-life, female sexual functioning, and UI (Rivalta et al., 2010). The comprehensive PFR approach showed

clinically significant results in improving both the quality-of-life and female sexual function, in addition to decreased UI in 13 of 16 participants (Rivalta et al., 2010). Rivalta et al. (2010) is significant to the occupational therapy (OT) profession, as OTs are trained to use a holistic and comprehensive approach with clients. Occupational therapists are equipped to treat body structures including the genitourinary system and reproductive systems, as indicated in the domain of practice ([*Framework-III*], AOTA, 2014). Rivalta et al. (2010) provides valuable information for occupational therapists, with statistically significant results indicating that using a comprehensive approach improves quality-of-life and sexual functioning in females.

Sangeetha and Rao (2010) found statistically significant evidence that a comprehensive pelvic floor rehabilitation approach improves a patient's quality-of-life. This study conducted a randomized controlled trial on twenty women with a diagnosis of stress-induced urinary incontinence (SUI) in an outpatient rehabilitation setting (Sangeetha & Rao, 2010). The control group participated in pelvic floor muscle exercise alone, while the experimental group participated in a comprehensive pelvic floor rehabilitation program (Sangeetha & Rao, 2010). The results of the study indicated statistical significance for improving quality-of-life, but not for reduction of incontinence and pelvic floor strength; however, there was a greater improvement of incontinence and pelvic floor strength in the experimental group compared to the control group (Sangeetha & Rao, 2010).

According to a study by Hung, Hsiao, Chih, Lin, and Tsauo (2010), a systematic approach using comprehensive pelvic floor rehabilitation (PFR) reveals statistical significance in improving the quality-of-life in patients with UI. This randomized control

trial found that an intervention retraining the diaphragm and abdominal muscles to work in unison with the PFMs not only improved the quality-of-life, but cured UI in 96.7% of participants in the experimental group (Hung, Hsiao, Chih, Lin, & Tsauo, 2010). Occupational therapists are skilled in educating clients how to use diaphragmatic breathing, which this study has shown to be a clinically effective method of not only treating, but curing UI in most patients.

The statistical significance of the results of the above studies indicates that a comprehensive pelvic floor rehabilitation approach is an effective evidence-based treatment in improving the quality-of-life of people with UI compared to pelvic floor exercises alone. These studies also showed that a comprehensive approach, compared to PFME alone, significantly decreased urinary leakage during sex, decreased pain, and resulted in a higher percentage of resolution with incontinence. Occupational therapists (OTs) utilize evidence-based interventions to address quality-of-life issues from a holistic perspective. Consequently, OTs have the potential to be exceptional practitioners in pelvic floor rehabilitation by being able to utilize comprehensive treatment plans effectively.

Sexual Dysfunction and Chronic Pelvic Pain

Mindfulness to treat sexual dysfunction has been addressed in the literature by Brotto, Basson, and Luria (2008) and has a major role to play in anxiety reduction and the treatment of chronic pain. Rosenbaum (2013), wrote a clinical paper in which he criticized the biopsychosocial model and the traditional approaches to treating sexual dysfunction, and accompanied pain disorders, advocating for a mindfulness-based approach (Rosenbaum, 2013). Addressing sexual dysfunction and pelvic pain as ‘only’ a

pelvic floor dysfunction is problematic in that pelvic floor dysfunction is not an isolated mechanical syndrome, but may be the emotional state expressed in the physical state. Pelvic floor muscle activity is reactive in response to anxiety, fear of pain or penetration, and even non-sexual scary films. In a study by Basson (2012), results show that mindfulness intervention may reduce sexual pain perception via a neurophysiological mechanism. In Rosenbaum's review, mindfulness is used as a treatment approach that addresses perceptions, feelings, attitudes and thoughts particularly as they relate to sexual intimacy. Mindfulness treatment allows clients to attend to and accept feelings and perceptions, physical pain or emotional feelings of shame and frustration, and thoughts that can be watched rather than followed. The mindfulness-based approach can be used to break the cycle of pain by encouraging the client to experience the present without preconceived notions or expectations based on experience. Mindfulness treatments by practitioners support client autonomy, a de-pathologizing approach not focused on dysfunction. Guarding and tightening of the muscles is the body's reaction to pain which often perpetuates the experience and increases the perception of pain. Mindfulness addresses the pain response providing a tool for clients to utilize to change and break the cycle of pain.

The ability to *thought watch* is a fundamental concept of mindfulness, known as metacognition, which has been directly associated with a decrease in distress and suffering (Teasdale et al., 2002). Brotto, Seal, Rellini (2012) conducted a study to compare a brief cognitive based therapy (CBT) intervention with a mindfulness-based treatment (MBT) intervention. The findings in this study are similar to previous results showing that mindfulness-based treatments enhance sexual functioning (Brotto, et al.,

2008). Mindfulness encouraged women to allow negative thoughts and associated feelings to come and go from awareness instead of suppressing them. The concept of 'acceptance of negative affect' was not addressed in the CBT group, which is known for its changing approach toward negative thoughts. Women in the MBT group may have been better able to focus and pay attention to pleasurable sexual feelings by letting go of distracting negative thoughts.

Basson's systematic review in 2012, states that the experience of pain is multifaceted and involves physical sensations accompanied by emotions and thoughts. The anterior cingulate gyrus and anterior insula influence the motivational aspects of pain; anticipating reward and making decisions (Basson, 2012). The prefrontal cortex and the amygdala process the emotional aspects of pain while the somatosensory cortex and posterior insula process the sensory aspects of pain. Pain perception; therefore, originates in numerous parts of the brain. The allodynia and hyperalgesia associated with chronic pelvic pain disorders and sexual dysfunction could reflect changes of central sensitization in the CNS (Basson, 2012). Recent case controlled studies found that women with provoked vestibulodynia, one of the leading causes of dyspareunia (a sexual pain disorder) were ten times as likely to have a comorbid anxiety disorder (Basson, 2012). Mindfulness practice for chronic pain attends to the location and characteristics of the pain rather than on the unpleasant, noxious stimuli (Basson, 2012).

As of late, more research is available on an approach called mindfulness-based cognitive therapy (MBCT) which is a combination of cognitive-based therapy (CBT) and mindfulness used to treat provoked vestibulodynia. MBCT may be more effective in treating pelvic pain than CBT or mindfulness alone as the two complement each other as

treatments (Basson, 2012). CBT identifies maladaptive or catastrophic thinking patterns, and mindfulness reinforces present focus rather than future focus. Both types of therapy address the anxiety associated with the pain, which is an essential step in decreasing and eliminating the pain (Basson, 2012). Occupational therapists are adequately trained in the principles of MBCT, shown to be the most effective therapy intervention for sexual dysfunction and chronic pelvic pain. Consequently, OTs are well equipped to tackle the complexity of a pelvic floor dysfunction diagnosis.

Chronic pelvic pain often coexists with other forms of chronic pain. There is also an increase in data linking psychological stressors reported by women with provoked vestibulodynia (PVD), in conjunction with new evidence on the central sensitization of the brain in pain. Consequently, there is ample evidence showing the effectiveness of psychological therapies for chronic pelvic pain. MBCT is specifically effective in lessening both the sexual dysfunction and the pain. Brain imaging is starting to divulge the mechanisms behind the benefits of CBT and mindfulness (Basson, 2012). Therefore, MBCT is highly effective in treating not only sexual dysfunction but in accompanying pelvic pain as well. In theory, mindfulness-based cognitive therapy (MBCT) may be more successful than either treatment alone due to the similarities between the two interventions. Sexual dysfunction and chronic pelvic pain is very complex and can stem from a myriad of different causes. The complexity of these dysfunctions indicates the need for occupational therapists who are trained in psychological interventions to move into this treatment area. Appropriate psychological treatment interventions can initiate physiological changes in the brain resulting in improved sexual dysfunction and decreased chronic pelvic pain (Basson, 2012).

Mapp

Multidisciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network is a research organization in which researchers work together on a common goal, to broaden research findings in pelvic pain (Alger et al., 2016). A MAPP study conducted by Huang et al. (2016) found urological chronic pelvic pain syndrome (UCPPS) has been linked to abnormal brain structures and functioning. Additionally, Huang et al. (2016) presents the first evidence of a positive correlation of axonal abnormalities in white matter in people with UCPPS, compared to those with irritable bowel syndrome (IBS). This new evidence will assist therapists and doctors in improving treatment and increasing understanding of UCPPS and IBS. The results indicate that pelvic pain is a systemic condition, which consolidates the importance of using a holistic approach in treatment and therapy.

Another MAPP study by Schrepf, O'Donnell, Luo, Bradley, Kreder, and Lutgendorf (2016) conducted research on interstitial cystitis (IC) and bladder pain syndrome (BPS). IC is defined as: A condition that results in recurring discomfort or pain in the bladder and the surrounding pelvic region...In recent years, scientists have started to use the terms bladder pain syndrome (BPS) or painful bladder syndrome (PBS) to describe cases with painful urinary symptoms that may not meet the strictest definition of IC. (NIDDK, 2016b, p. 1) Results in this study also indicate IC or BPS patients have a decrease in pain thresholds and tolerance when up against healthy controls.

IC is a painful and debilitating condition that affects approximately 3.3 million women in the Unites States (NIDDKb, 2016). This MAPP study sought to find the inflammatory factors which influence the symptoms of IC. The study tested the

correlation between toll-like receptors (TLR) stimulation in peripheral blood mononuclear cells (PBMCs) and diurnal cortisol rhythms to changes in pain and urinary symptoms (Schrepf et al., 2016). The results of the study found that high levels of both PBMCs and flattened diurnal slope had a positive correlation with less improvement in genitourinary pain over time and associated less improvement in urinary symptoms (Schrepf et al., 2016). The results of this study provide essential knowledge on ways OTs can help their clients manage symptoms. For instance, occupational therapists can help clients manage their cortisol levels by teaching stress management techniques such as mindfulness practice.

Best Evidence

Three high-quality systematic reviews looked at the effectiveness of various interventions for treating pelvic floor dysfunction (Koh, Young, Young, & Solomon, 2008; Hsu, Liao, Lai, Tsai, 2016; Oblasser, Christie, & McCourt, 2015). The pelvic floor dysfunctions ranged from chronic constipation, bowel incontinence, radical prostatectomy, and urinary incontinence. While the diagnoses varied, effectiveness of a specific treatment method was clinically significant. The findings indicate that pelvic floor practitioners would greatly benefit from utilizing biofeedback in conjunction with general pelvic floor exercises, such as kegels, when treating patients with a pelvic floor dysfunction (Koh, Young, Young, & Solomon, 2008; Hsu, Liao, Lai, Tsai, 2016). The effectiveness of biofeedback as an adjunct method in conjunction with conservative pelvic floor treatment was statistically significant in treating urinary incontinence after a radical prostatectomy, in addition to treating chronic constipation (Koh, Young, Young, & Solomon, 2008; Hsu, Liao, Lai, Tsai, 2016). Furthermore, using assistive devices, such

as vaginal cones or balls can decrease the symptoms; however, there is a lack of high-quality evidence supporting this (Oblasser, Christie, & McCourt, 2015). There is a high need for further research in all areas of interventions for pelvic floor rehabilitation. Many studies focusing on interventions, other than biofeedback, are of low quality or present a bias in the methodology and results of the study.

Physical Therapy versus Occupational Therapy

Many health professionals believe that pelvic floor rehabilitation is a specialty only physical therapists (PT) should practice; however, research is proving occupational therapists (OTs) do have a place in PFR. A study using a cross-sectional design was conducted in Canada to determine if physical therapists and occupational therapists reflect best practice in identifying, assessing and treating UI (Dumoulin, Korner-Bitensky, & Tannenbaum 2007). The results of the study found occupational therapists were more likely to identify stress urinary incontinence (SUI) and functional urinary incontinence (FUI) than physical therapists (Dumoulin et al., 2007). Physical therapists were more likely to identify an urge urinary incontinence (Dumoulin et al., 2007). For both professions, the number of hours spent working daily with stroke patients increased the likelihood of best practice assessment (Dumoulin et al., 2007). Further results indicated occupational therapists scored higher percentages on utilizing best-practice UI assessment, compared to physical therapists (Dumoulin et al., 2007). Occupational therapists showed a higher rating on community intervention and best practice, while physical therapists rated higher on acute care and rehabilitation in intervention and best-practice (Dumoulin et al., 2007). The various educational background of occupational therapists and physical therapists did not lead to a significant difference in problem

identification, assessment, or intervention in treating UI (Dumoulin et al., 2007). While each profession scored higher in certain areas, this study proves that both OTs and PTs possess the knowledge and practice skills to work with patients experiencing UI.

Physical therapists and occupational therapists are more similar than different according to a study by McCombie, O'Connor, and Schumacher (2015). The study compared answers from members of the national professional associations, American AOTA and American Physical Therapy Association (APTA) (McCombie et al., 2015). The study was conducted to determine the different characteristics attributed to OTs and PTs. Results indicated that OTs rated themselves higher than PTs rated themselves based on openness and agreeableness (McCombie et al., 2015). Both OT and PT rated PT slightly more assertive, but PT rated themselves slightly higher in assertiveness than OT rated PT (McCombie et al., 2015). PT additionally rated themselves higher than OT rated them in empathy. OTs rated themselves significantly greater in levels of empathy than they rated PT. PTs rated OTs higher in empathy (McCombie et al., 2015). The conclusion of this study indicated the majority of therapists from each profession rate OTs as more empathic and PTs as more assertive; however, all other personality traits were very similar in rating (McCombie et al., 2015). OTs show a high level of empathy, a crucial quality to possess when addressing emotional and psychological factors associated with pelvic floor dysfunctions.

Occupational Therapy's Role in Pelvic Floor Rehabilitation

Although doctors, nurses, physical therapists, and occupational therapists (OTs) can treat people with pelvic floor disorders (Herman & Wallace, 2016), there is a need for an increased collaborative approach between these disciplines, especially in women's

health (Davis & Kumar, 2003). OTs bring an individualized skill set of client-centered care that attends to all aspects of human needs (Hajjar & Twiss, 2013). Furthermore, OTs skillfully assist patients in becoming independent in their Activities of Daily Living (ADL's; Hajjar &Twiss, 2013). Toileting is one of the ADL's that OTs are consistently working to improve. OTs encounter the issue of urinary incontinence (UI) regularly but may not be competent in performing pelvic floor interventions (Hajjar & Twiss, 2013). Currently, interventions for pelvic floor disorders are primarily conducted by physical therapists as the American Physical Therapy Association (APTA) offers training to specialize in this area (Pannulb, Dichsen, Johnson, & Peterson, 2016). The APTA is the governing organization of physical therapy in the United States that makes certification in pelvic floor available for physical therapists only (Pannulb, Dichsen, Johnson, & Peterson, 2016). The equivalent organization for OTs, The AOTA, provides no certification in pelvic floor rehabilitation. The lack of certification opportunities may contribute to the absence of OTs practicing in the field of pelvic floor rehabilitation.

Since pelvic floor disorders overlap with many activities of daily living (ADLs), and the treatment fits the holistic model of care delivered by OTs, it would be beneficial to incorporate this training as a specialty for occupational therapists. The *Occupational Therapy Practice Framework: Domain and Process*, *3rd* ed., ([*Framework-III*], AOTA, 2014) states: "Occupational therapy practitioners recognize that health is supported and maintained when clients can engage in occupations and activities that allow desired or needed participation in home, school, workplace, and community life" (p. S1). Urinary incontinence has a direct impact on instrumental activities of daily living (iADLs), leisure and participation in social activities (Hunjan & Twiss, 2013). Research indicated that

women who suffered from pelvic pain had a reduced ability to perform daily activities, lower self-esteem, increased levels of depression and anxiety and worked fewer hours during the week compared to those women who did not suffer from pelvic pain (Elden, Gutke, Wendt, Fagevik-Olsen, & Ostgaard, 2016).

It would be beneficial to patients if OTs could address urinary incontinence and provide interventions during sessions to improve further participation in occupations which is the end goal of occupational therapy. Neumann, Tries, and Plummer (2009) referenced the *Domain and Process*, *2nd* ed., ([*Framework-II*], AOTA, 2014) stating, "conservative treatment of pelvic floor disorders is within the domain of occupational therapy as it is related to supporting performance and engagement in occupations and activities targeted for intervention" (p. 10). Occupational therapy (OT) is a holistic profession that focuses on promoting independence in functional activities by removing barriers to performance (Hajjar & Twiss, 2013). Occupational therapists dissect one's environmental barriers, cultural beliefs, and values. The central focus of OT is to analyze and improve how a patient engages in self-care and independence (Sacco-Peterson & Borell, 2004).

The older adult accepts incontinence as a normal part of aging; therefore, they often manage symptoms rather than get treatment to improve incontinence (Hunjan & Twiss, 2013). Interventions need to be part of a comprehensive management program where the physical, environmental and behavioral factors relating to a client are all taken into consideration. Incontinence is often caused by all three factors combined. The occupational therapist is one of the only professionals that addresses all these factors adequately to improve function in all areas (Hajjjar & Twiss, 2013). Pelvic Floor

Disorders (PFD) have a disastrous effect on the areas of occupation, bowel and bladder management, sexuality, mobility, participation, leisure, sleep and job performance (Sabel & Gallagher, 2015). The occupations and roles of patients affected by PFD are greatly diminished.

Interdisciplinary UI management programs that focus on pelvic strength, behavior modification, and focused rehabilitation are more effective than conventional treatment (Neumann, Tries & Plummer, 2009). OTs recognize the need to change performance patterns and habits looking past the musculoskeletal deficits to identify how the context and activity demands are related to the problem (Neumann et al., 2009). OTs also possess the skills to educate and teach loved one's about their family member's condition in a way that does not shame the individual who is going through UI, sexual dysfunction, or other pelvic floor dysfunction (Neumann et al., 2009). Importance is placed on social relationships, roles, and family dynamics (Neumann et al., 2009). Furthermore, autonomy and the importance of what the client deems as meaningful guides the OT profession (Neumann et al., 2009).

There are vast possibilities for occupational therapists to increase their role by using behavioral modifications and cognitive assessments to remove obstacles to improving function, health, and participation (Hunjan & Twiss, 2013). OTs can address the psychosocial, sexual and social impact of pelvic floor dysfunction (PFD) as they lead to decreased quality-of-life (Sabel & Gallagher, 2015).

Licensed occupational therapists (OTs) can provide treatment to a patient with pelvic floor dysfunction without additional certification (Neumann, Tries & Plummer 2009). Some interventions that OTs can perform without additional knowledge are stress

reduction through diaphragmatic breathing, progressive muscle relaxation, and mindfulness-based training. Other interventions include educating the patient about dietary modifications, fluid intake, scheduled voiding, healthy bowel habits, plus sexual and sensual functioning. Additionally, a newly graduated OT can use biofeedback principles to create an awareness of the pelvic floor region and to help the patient consciously release and contract these muscles (Neumann, Tries & Plummer 2009). Lastly, mindfulness-based cognitive therapy has shown to be very effective in treating sexual dysfunction and pelvic pain disorders (Basson et al., 2012), an intervention that OTs are trained to perform.

Advanced therapeutic interventions that require certification in pelvic floor dysfunction begins with a functional assessment of bladder, bowel, and sexual function, analyzing habits, routines, and behaviors (Neumann, Tries & Plummer 2009). The advanced pelvic floor assessment identifies muscular strength, tone, coordination, and isolation as they relate to bladder and bowel function (Neumann et al., 2009). It is imperative that OTs specializing in pelvic floor understand the urinary, digestive, reproductive, and lumbopelvic musculoskeletal system and gain competence in performing interventions to treat pelvic floor disorders (Neumann et al., 2009). This additional education is only available through certification in pelvic floor as it is not covered specifically or comprehensively during OT school.

Psychosocial Components of Pelvic Floor Rehabilitation

Occupational therapists are unique in the sense that interventions accommodate the holistic approach to the human soul. Within pelvic floor rehabilitation, one's psychosocial needs must be a priority. Pelvic floor disorders have multiple complex

psychological factors that accompany it. For example, a study done to improve UI treatment showed that the dysfunction exhibits embarrassment, frustration, and complex set of emotions (Serga & Marcos-Gragera, 2013). Frequently clients experience a decrease in social participation, self-efficacy, and autonomy without proper psychosocial interventions (Serga & Marcos-Gragera, 2013).

Often depression and anxiety are more prevalent in the pelvic floor disorder population than the general population (Khan et al., 2013). Success in treatment is directly related to coexisting conditions, particularly psychological characteristics of patients. In a study conducted by Khan et al., (2013) the researchers measured depression and anxiety levels in 124 women who participated in pelvic floor muscle training. The researchers found a positive relationship between the degree of depression and anxiety, and the severity of the pelvic floor disorder (Khan et al., 2013). Furthermore, only the women in the group with normal to mild anxiety improved following a pelvic floor muscle training (PFMT) intervention, while the women with moderate and severe levels of depression and anxiety showed no improvement (Khan et al., 2013). The results highlight the impact that psychological characteristics have on the efficacy of treatment. Anxiety and depression are symptoms that occupational therapists have the expertise to treat. In effect, these skills can greatly increase the likelihood of successful treatment outcomes (Khan et al., 2013).

Depression is an independent variable that leads to poor outcomes in physical therapy interventions for pelvic floor disorders (Khan et al., 2013). Treatment will not be successful if the depression is not addressed. When depressed, patients exhibit poor compliance and motivation, a determining factor for the outcome of therapy (Khan et al.

2013). OTs are able to establish therapeutic relationships with clients with the ability to harness an individual's internal drive and motivation; therefore, they are invaluable in this specialty area.

Many studies indicate incontinence has an enormous effect on the psychological health of an individual (Khan et al., 2013). The most common effect is social isolation as patient's activities out of the home are greatly restricted (Khan et al., 2013). The embarrassment and shame of leaking in public are ultimately unbearable (Khan et al., 2013). Social events become limited which often affects significant relationships with family and friends (Khan et al., 2013). The 'aging adults' population may develop elaborate rituals that are performed throughout the day to conceal urine leakage (Khan et al., 2013). Occupational therapists are trained to adapt the environment to fit the psychosocial and physical needs of clients.

Hujjar (2004) conducted a study with 101 Canadian women who participated in a behavioral/education intervention for urinary incontinence (UI), the researchers found that the treatment group reported an increase in positive psychosocial adjustment compared to the control group (Hujjar, 2004). Occupational therapists can provide an environment of trust and support by showing compassion and empathy, both qualities that would serve this population well. OTs are trained to dig deeper into a client's psyche and bring empathy, compassion, and most of all, acceptance of needs. Throughout the assessment and intervention an individual's autonomy and quality-of-life are taken into consideration (Hujjar, 2004). Patients must be made aware that the comprehensive interventions will improve psychosocial and physical symptoms of UI (Hujjar, 2004).

The extensive literature review encompasses a description of pelvic floor and the common dysfunctions associated with the area. Evidence and rationale of research pertaining to the most successful therapeutic interventions for pelvic floor dysfunction is included. There is significant evidence linking occupational therapy's (OT's) pertinent role in this emerging area of practice. Occupational therapists are holistic practitioners who are well versed in psychosocial techniques and biomechanical methods of treatment intervention. OT graduate programs do not cover pelvic floor education thoroughly; therefore, a guide that educates OTs in the field of pelvic floor rehabilitation will prove advantageous to the growth of the occupational therapy profession.

Statement of Purpose

The "Certification in Pelvic Floor Rehabilitation; A Guide for Occupational Therapists," provides a solution to assist occupational therapists (OTs) in obtaining pelvic floor certification. The specific objectives in creating the guide were to ensure the OT can: (a) Demonstrate foundational knowledge of the pelvic floor; (b) Demonstrate knowledge of occupational therapy's role in pelvic floor dysfunction; (c) Analyze the current certification options available for occupational therapists in pelvic floor rehabilitation. The goal upon completion of the project is that occupational therapists interested in pelvic floor rehabilitation will have access to a guide showing comparisons of certifications to facilitate their decision-making process.

Theoretical Framework

Occupational therapy practice uses different frameworks and models to achieve specific evidenced-based outcomes. There are two theories implemented in this project, the Ecology of Human Performance model (EHP) and the Humanistic Learning Theory.

The EHP model is an occupational therapy-based model; whereas the Humanistic Theory is a learning theory encompassed in many professions.

Ecology of Human Performance Model

This project utilizes an occupational-based model, Ecology of Human Performance (EHP), which places a significant role in the way people interact and live. The EHP model was created by Winnie Dunn and her colleagues at the University of Kansas Medical Center (Cole & Tufano, 2008). The creators of this model highly value the relationship between occupational therapists and educators (Cole & Tufano, 2008). The definition of ecology is, "a science that deals with the relationships between groups of living things and their environments" (Merriam-Webster.com, 2016, p. 1). This is essential in understanding humans and their occupations. "Human occupations" define what people do and who they are. The environment determines how people choose to engage in their surroundings and behaviors they demonstrate. Occupational therapists have created multiple models involving ecology to better assess all contexts of a person's life (Lee, 2010).

Ecology of Human Performance model was created due to the lack of context in other theories of occupational therapy. Ecology of Human Performance uses the environment as the primary context (Dunn, Brown & McGuigan, 1994). This model analyzes the correlation between the person, context, task, and performance. The person and environment work as an open-system, affecting each other equally (Lee, 2010). The person is defined by their experience, skills, and abilities (Lee, 2010). Context encompasses the social, cultural, physical, and temporal elements (Lee, 2010). Task, is the action one does in their environment that is goal-oriented, bottomless, and molded by

one's ability, roles, and organizational variables (Cole and Tufano, 2008). The task is the "doing" segments of activity that creates performance.

The overarching theme of the guide relates directly to AOTA's Centennial Vision which states, "We envision that occupational therapy is a powerful, widely recognized, science-driven, evidence-based profession with a globally connected and diverse workforce meeting society's occupational needs," (AOTA, 2016, p. 1). The Centennial Vision is meant to encourage occupational therapists to utilize environmental resources, with personal context and background in mind, to continue in scientifically proven evidence-based practice. AOTA's Centennial Vision has been a long-term goal developed by occupational therapists over the past 100 years. The guide is designed to address the goals of the Centennial Vision by being acknowledged and scientific while meeting the demand of society. Implementation of this guide addresses the vision by using the temporal context in the EHP model (Dunn, Brown & McGuigan, 1994, p. 595). The EHP model shows that through temporal context, OTs can find concrete steps that answer how, when, where, and why the pelvic floor career path and education is a good fit for OTs (Cole & Tufano, 2008). The EHP context of time ties into the Centennial Vision in that 'now is the time' to show that OTs have a path and a voice in the emerging field of pelvic floor rehabilitation.

Humanistic Learning Theory

The holistic development of an individual is the primary goal in the humanistic philosophy of education. The main purpose of selecting this learning theory is that it encompasses development of the whole person. The humanistic philosophy of learning attempts to create opportunities to develop self-awareness, self-understanding, and

insight (Bloss-Brown, and Schoening, 1983). The guide provides occupational therapists the necessary information to stimulate self-reflection and perspective to enable new thinking and possibly increase internal motivation for pursuing a specialty. One of the learning procedures in the humanistic approach includes exploring inner feelings an individual may have about oneself (Bastable, Gramet, Jacobs, & Sopczyk 2011). By addressing these feelings directly, an occupational therapist is encouraged to choose the most appropriate path to certification.

The needs a person has affects learning and change. For behavioral change to occur, an individual must be able to change their feelings, self-concept, and needs (Bastable et al., 2011). Occupational therapists are well versed in psychosocial theories, including behavioral change, making this an excellent learning theory to apply to a guide targeted towards OTs.

The assumption about the learner in humanistic learning theory is that the learner is actively engaged in self-actualization and positive self-concept (Bastable et al., 2011). The target audience of occupational therapists is involved in self-growth and self-understanding, making it the ideal theory to utilize. In this theory the learner is spontaneous, creative, and playful (Bastable et al., 2011), making it necessary for the guide to be attractive especially in design and content.

Methodology

The "Certification in Pelvic Floor Rehabilitation; A Guide for Occupational Therapists," specifically tailored to occupational therapists (OTs), was developed as a tool to address the lack of OTs working in the field of pelvic floor rehabilitation. The guide is an easy to follow resource that defines pelvic floor dysfunction, OT's role, and

shows a comparison of the various certifications available for OTs in pelvic floor rehabilitation. The guide offers a solution to the identified problem addressed in the needs assessment and literature review.

Building the Guide

The first portion of the guide is a description of the pelvic floor. This detail includes the following information about the pelvic floor region: definition, incidence and prevalence, function, and dysfunction. The information was gathered through various scholarly articles to reflect a strong base of knowledge for the audience to understand the importance of the pelvic floor region.

The second section of the guide includes a description of occupational therapy's (OT's) role in pelvic floor rehabilitation. The information utilized in this section is taken directly from the literature review and the *Occupational Therapy Practice Framework: Domain and Process*, *3rd ed.,* (*Framework-III*). The information is displayed in a short narrative followed by two tables, the former a comparison of the top two certification organizations and the latter showing additional education available to become competent in pelvic floor rehabilitation. The narrative describes OT's unique role in treating pelvic floor dysfunction holistically. It includes the benefit of OTs addressing psychosocial factors, the environment, and educating the client. The table directly links aspects of pelvic floor rehabilitation to domains in the *Framework-III*. The domains are located on the left, and a description of how each domain addresses pelvic floor dysfunction is on the right.

The last portion of the guide is a comparison of the various certification options offered by Herman and Wallace, Biofeedback Certification International Alliance

(BCIA), and Evidence in Motion in a short narrative form followed by a comparative table. Both offer certifications in pelvic floor rehabilitation to licensed occupational therapists. Initially, information concerning the pelvic floor certifications was obtained from Brenda Neumann, a registered occupational therapist (OT), who is certified and currently works in the field of pelvic floor rehabilitation. In this section, information is directly taken from the Herman and Wallace, BCIA, and Evidence in Motion website. The comparison is displayed in a chart that helps the audience differentiate the programs' costs, length, details, and title of certification. By displaying this information in a visually pleasing manner, it will allow the opportunity for OTs to choose the best possible route of certification for them.

Permission to Use Content

The team obtained written authorization to use material straight from the organization's web page for Herman and Wallace (*See Appendix B*), Biofeedback Certification International Alliance (BCIA) (*See Appendix C*), and Evidence in Motion (*See Appendix D*). The team made contact with the executive director of BCIA, Judy Crawford, via email after obtaining her contact information provided on the BCIA website. Additionally, the team reached out to Herman and Wallace in the same manner and received consent from the employee Mykhanh Pham. The program director of Evidence in Motion provided written consent to use information on their website for the guide. Permission to use images in the guide were obtained via licensure with Kenhub and two images were purchased via Shutterstock.

Advantages of Using a Guide

There are many benefits to creating a guide for occupational therapists. First, the information can be easily downloaded by the consumer, allowing the information to be saved. The information will be displayed in a succinct manner, making the process of identifying the most appropriate certification easier for an occupational therapist. Education professionals indicate that using a visual guide to deliver information is an effective method to teach or convey information to an audience (Bastable, Gramet, Jacobs, & Sopczyk, 2011).

Reaching the Target Population

In order to reach occupational therapists interested in obtaining certification in pelvic floor rehabilitation, the guide will be published on an accessible website. The team has been eagerly looking for an organizational website that can link a significant number of occupational therapists to this new resource guide. Pending ideas of publication include national and state occupational therapy organizations, social media groups, and a personal website. By creating the guide in a PDF and publishing it on a website, the link to the web page can be shared via word of mouth, social media, and in publication of this article. The team presented a poster at the AOTA Specialty Conference on Chronic Conditions Conference in Orlando on December 4th, 2016. The team also presented at the Occupational Therapy Association of California (OTAC) Spring Symposium on March 5th, 2017. The attendees' response to this emerging field within occupational therapy was very positive with many practitioners eager to receive the guide on completion.

Evaluation

The project was successful as the guide addresses all the concerns identified in the literature review and formative needs assessment, and displays a clear comparison of each pelvic floor rehabilitation certification. The project clearly outlines the process of becoming certified in pelvic floor rehabilitation. Additionally, the guide is beneficial to the audience as it's able to provide clarity in occupational therapy's role in pelvic floor and identifies a clear and concise method of easily determining the best certification.

Ethical and Legal Considerations

Verbal or written informed consent was obtained for all human subjects that participated in the formal needs assessment. All identifiers of the participants were secured on a locked and private data storage mechanism. Data collected was translated into codes for publication to keep participants anonymous. Permission to use information from Herman and Wallace (*See Appendix B*), Biofeedback Certification International Alliance (BCIA) (*See Appendix C*), and Evidence in Motion (*See Appendix D*) has been obtained via email. The information on these organizations' websites was used as content in the guide depicting how occupational therapists (OTs) can be certified in pelvic floor rehabilitation. Consent was obtained for images utilized in the guide.

A potential conflict of interest is that the AOTA historically has not been supportive in advocating for OTs in the field of pelvic floor rehabilitation. This information was gathered during numerous interviews with OTs that specialize in treating pelvic floor during the narrative needs assessment (*See Appendix E*). Furthermore, current pelvic health practitioners from different allied health backgrounds may believe that OTs should not work in pelvic floor rehabilitation. Physical therapists and other

health professions have numerically greater recognition within the PFR field, which can add competition rather than collaboration.

Results

A formative and narrative needs assessment were completed in order to enhance the guide's applicability to the target OT audience. The formative needs assessment survey included all accredited master of science in occupational therapy programs via Google Forms. Fourteen schools replied indicating that pelvic floor anatomy and physiology was not taught in detail within the graduate level program. In addition, only 7.1% of participants stated that they provide resources for their students wishing to practice in pelvic floor rehabilitation. Lastly, 71.4% expressed that their program would utilize informative resources to help assist students interested in pursuing pelvic floor rehabilitation. Overall, the results indicated the necessity for resources to be made available to occupational therapists; specifically, information on function, interventions, and guidance for competency training to treat pelvic floor dysfunction.

The narrative needs assessment was conducted via video and audio recordings with experienced working professionals in pelvic floor rehabilitation. Thematic codes were developed to help format important information and advice to newcomers in the field. The results highlighted the following important themes: Educational Experience, Occupational Therapy & Biofeedback, Relevant Practice Settings, Barriers for Occupational Therapists in Pelvic Floor Rehab, Institutions that Offer Certifications, Continuing Education Unit (CEU) Courses, The Field of PFR and Clinical Experience in Pelvic Floor Rehab. These coded themes and discussions with experienced professionals

gave the creators of the guide a platform in which to make the information relevant to occupational therapists.

Discussion and Application to Occupational Therapy

With data gathered from the needs assessments, occupational therapists do not possess the foundational knowledge necessary to be competent in the field of pelvic floor rehabilitation without advanced education. For occupational therapists (OTs) to overcome underrepresentation in the field, OTs must pursue additional education from a recognized pelvic floor institution. While certification of all OTs who wish to become pelvic floor practitioners is ideal, it is not a legal requirement at this time. Available literature provides practical ways OTs can contribute to the field such as addressing psychosocial factors, educating clients, behavior modification, mindfulness training, biofeedback, and pelvic floor exercises. The creation of the guide provides a solution to bridge the gap for OTs seeking additional educational resources in the field. OTs must be proactive in seeking continuing education in pelvic floor rehabilitation to keep this practice area in OT's domain.

Limitations

There are possible limitations to the project. The guide is solely geared toward occupational therapists (OTs) and therefore does not completely generalize to all health professionals. However, other health professionals may find the information is relevant and addresses their needs to some extent. Another possible limitation is the time constraint that pertains to the project. Time constraints may prevent the guide from partnering with an organization that offers a free and easily accessible publication to the body of occupational therapists, hindering the proposed target audience of OTs. Lastly,

pelvic floor is considered a taboo topic in many allied health professions, so there is a possibility that OTs may not want or be interested in the guide.

Concluding Statement

"Certification in Pelvic Floor Rehabilitation; A Guide for Occupational Therapists," is a complete guide for occupational therapists wishing to pursue certification in pelvic floor rehabilitation. The guide was developed in response to the limited resources available for occupational therapists to compare the certification programs for pelvic floor rehabilitation. The target population includes experienced occupational therapists, entry-level occupational therapists, and occupational therapy students. The guide includes evidenced-based research, occupational therapy's role in the field, and a visual comparison of various certification routes. Comparisons of the length of the program, certifications available, total cost, topics, and program specifics are provided.

The guide successfully meets multiple objectives in the research agenda set forth by the AOTF and AOTA. The accessible guide that was created to help OTs gain competency in the pelvic floor field accomplished this. The objectives met include:

Identify where practice lags behind practice guidelines to provide evidence of the need for quality indicators; Identify, develop, and evaluate occupational therapy's role in community preparedness; Design and implement community-based participatory research to "increase the relevance, acceptability, and usefulness of evidence-based scientific findings in improving" occupational therapy (rehabilitation). (AOTF & AOTA, 2011, p. s6)

Two main theories inspire the project; the Environment of Human Performance (EHP) and the Humanistic Learning Theory. The EHP model is used to enhance the professional development of occupational therapists by changing the environment of the occupational therapy community to reflect the Centennial Vision. In Humanistic Learning Theory, the educator is responsible for encouraging the learner to achieve positive self-growth through freedom of choice (Bastable, Gramet, Jacobs, & Sopczyk, 2011). The goal of the guide is to convey the facts about the different certification programs in pelvic floor rehabilitation to allow the therapist to choose the best route. The therapist can then facilitate their positive self-growth in professional development.

The main limitation of the guide is that the information may not generalize to other health professions. However, other health professions could benefit from the information provided in the guide, especially information on pelvic floor certification. Furthermore, there may be a potential conflict of interest because AOTA has historically not enthusiastically supported OTs in pelvic floor rehabilitation and other disciplines may not understand OTs role.

The "Certification in Pelvic Floor Rehabilitation; A Guide for Occupational Therapists" bridges the gap in resources available to OTs by providing a guide with certification options in pelvic floor rehabilitation. The guide is an essential tool that empowers occupational therapists to emerge in the field of pelvic floor rehabilitation by providing a visual of the process and options available.

Future Implications for Occupational Therapy

Due to time constraints, a pilot study to test the effectiveness of the "Certification and Licensure in Pelvic Floor Rehabilitation; A Guide for Occupational Therapists," was

not possible. Seeking feedback on the content and design of the guide may improve its relevance to the occupational therapy community. In future projects, piloting the guide must be considered as a crucial part of the process. Once piloted and revised, it may be advantageous to have the guide published on occupational therapy websites, such as national or state organizations. It may also be beneficial to provide a link to the guide as a PDF attachment that could be emailed to inquiring parties. The guide is intended to be free, accessible, and comprehensive.

References

Alger, J. R., Ellingson, B. M., Ashe-Mcnalley, C., Woodworth, D. C., Labus, J. S., Farmer, M., & Mayer, E. A. (2016). Multisite, multimodal neuroimaging of chronic urological pelvic pain: Methodology of the MAPP Research Network. *NeuroImage: Clinical, 12*, 65-77. https://doi.org/10.1016/j.nicl.2015.12.009

American Occupational Therapy Association (2016). *Centennial Vision.* Retrieved from http://www.aota.org/aboutaota/get-involved/bod/2016-centennial-vision.aspx#sthash.AK5tpq0J.dpuf

American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy, 68*(Suppl. 1), S1-S48.

American Occupational Therapy Association. (2016). *2011 Accreditation council for occupational therapy education (ACOTE)- Standards and interpretive guide (effective July 31, 2013)- April 2016 interpretive guide version*. Retrieved from http://www.aota.org/~/media/Corporate/Files/EducationCareers/Accredit/Standards/2011-Standards-and-Interpretive-Guide.pdf?la=en

American Occupational Therapy Association & American Occupational Therapy Foundation. (2011). Occupational therapy research agenda. *American Journal of Occupational Therapy, 65*(Suppl.), S4–S7. https://doi.org/10.5014/ajot.2011.65S4

American Physical Therapy Association (2016). *Womens health*. Retrieved from http://www.womenshealthapta.org

Basson, R. (2012). The recurrent pain and sexual sequelae of provoked vestibulodynia: A perpetuating cycle. *Journal of Sex Medicine*, *9*, 2077-2092. https://doi.org/10.1111/j.1743-6109.2012.02803.x

Bastable, S. Gramet, P. Jacobs, K. & Sopczyk, D. L. (2011). *Health professional as educator: Teaching and learning*. Boston, MA: Jones and Bartlett.

Bloss-Brown, S. L., & Schoening, M. R. (1983). Application of humanistic learning theory in an associate degree program for occupational therapy assistants. *The American Journal of Occupational Therapy*, *37*(6), 392-398.

Brostrom, S., & Lose, G. (2008). Pelvic floor muscle training in the prevention and treatment of urinary incontinence in women-what is the evidence? *Acta Obstetricia Et Gynecologica Scandinavica, 87*(4), 384-402. https://doi.org/1080/00016340801938806

Brotto, L., Seal, B., & Rellini, A. (2012). Pilot study of a brief cognitive behavioral versus mindfulness-based intervention for women with sexual distress and a history of childhood sexual abuse. *Journal of Sex & Marital Therapy, 38*, 1–27.

Cole, M. B., & Tufano, R. (2008). *Applied theories in occupational therapy: A practical approach.* Thorofare, NJ: SLACK.

Davila, G.W., Ghaniem, G.M., & Wexner, S.D., (2008). *Pelvic floor dysfunction: A multidisciplinary approach*. London: Springer. https://doi.org/10.1007/978-1-84628-010-8

Davis, K., & Kumar, D. (2003). Pelvic floor dysfunction: a conceptual framework for collaborative patient-centered care. *Journal of Advanced Nursing*, *43*(6), 555-568. https://doi.org/10.1046/j.1365-2648.2003.02754.x

Dumoulin, C., Korner-Bitensky, N., & Tannenbaum, C. (2007). Urinary incontinence after stroke identification, assessment, and intervention by rehabilitation professionals in Canada. *Stroke*, *38*(10), 2745-2751.

Elden, H., Gutke, A., Wendt, G. K., Fagevik-Olsen, M., & Ostgaard, H. C. (2016). Predictors and consequences of long-term pregnancy-related pelvic girdle pain: a longitudinal follow-up study. *BMC Musculoskeletal Disorders, 17,*Article 276. https://doi.org/10.1186/s12891-016-1154-0

Fisher, A. G. (2009). *Occupational therapy intervention process model: A model for planning and implementing top-down, client-centered and occupation-based interventions*. Fort Collins, CO: Three Star Press Inc.

Fruhauf, S., Gerger, H., Schmidt, H. M., and Barth, J. (2013). Efficacy of psychological interventions for sexual dysfunction: A systematic review and meta-analysis. *Arch Sex Behavior*, *42*, 915-933.

Hajjar, R. R. (2004). Psychosocial impact of urinary incontinence in the elderly population. *Clinics in Geriatric Medicine*, *20*(3), 553-564.

Hajjar, R. & Twiss, K. L. (2013). Urgent interventions: Promoting occupational engagement for clients with urinary incontinence. *OT Practice*, *18*, 8-12. Retrieved from www.aota.org

Hannestad, Y. S., Rortveit, G., Sandvik, H., & Hunskaar, S. (2000). A community-based epidemiological survey of female urinary incontinence. *Journal of Clinical Epidemiology, 53*(11), 1150-1157. https://doi.org/10.1016/s0895-4356(00)00232-8

Harris, L. A., Hansel, S., DiBaise, J., & Crowell, M. D. (2006). Irritable bowel syndrome and chronic constipation: emerging drugs, devices, and surgical treatments. *Current Gastroenterology Reports, 8*(4), 282-290.

Herman & Wallace. (2016). *Certified Pelvic Rehabilitation Practitioners.* Retrieved from https://hermanwallace.com/list-of-certified-pelvic-rehabilitation-practitioners

Hsu, L., Liao, Y., Lai, F., & Tsai, P. (2016). Beneficial effects of biofeedback-assisted pelvic floor muscle training in patients with urinary incontinence after radical prostatectomy: A systematic review and metaanalysis. *International Journal of Nursing Studies*, *60,* 99-111. https://doi.org/10.1016/j.ijnurstu.2016.03.013

Huang, L., Kutch, J. J., Ellingson, B. M., Martucci, K. T., Harris, R. E., Clauw, D. J., . . . Farmer, M. A. (2016). Brain white matter changes associated with urological chronic pelvic pain syndrome. *Pain, 157*(12), 2782-2791. https://doi.org/10.1097/j.pain.0000000000000703

Hung, H., Hsiao, S., Chih, S., Lin, H., & Tsauo, J. (2010). An alternative intervention for urinary incontinence: Retraining diaphragmatic, deep abdominal and pelvic floor muscle coordinated function. *Manual Therapy*, *15*(3), 273–279. https://doi.org/10.1016/j.math.2010.01.008

Khan, Z. A., Whittal, C., Mansol, S., Osborne, L. A., Reed, P., & Emery, S. (2013). Effect of depression and anxiety on the success of pelvic floor muscle training for pelvic floor dysfunction. *Journal of Obstetrics and Gynaecology, 33*, 710-714.

Ko, Y., Lin, S. J., Salmon, J. W., & Bron, M. S. (2005). The impact of urinary incontinence on quality of life of the elderly. *American Journal of Managed Care*, *11*(4 Suppl.), S103-111.

Koh, C. E., Young, C. J., Young, J. M., & Solomon, M. J. (2008). Systematic review of randomized controlled trials of the effectiveness of biofeedback for pelvic floor dysfunction. *The British Journal of Surgery*, *95*(9), 1079-1087. https://doi.org/10.1002/bjs.6303

Lee, J. (2010). Achieving best practice: A review of evidence linked to occupation-focused practice models. *Occupational Therapy in Health Care, 24*(3), 206-222. https://doi.org/10.3109/07380577.2010.483270

MacLennan, A., Taylor, A., Wilson, D. H., and Wilson, D. **(**2000). The prevalence of pelvic floor disorders and their relationship to gender, age, parity and mode of delivery. *International Journal of Obstetrics and Gynaecology, 107*(12), 1460-1470. https://doi.org/10.1111/j.1471-0528.2000.tb11669.x

McCombie, R. P., O'Connor, S. S., & Schumacher, S. D. (2015). A comparative investigation of personality traits between two allied health professions: Occupational therapy and physiotherapy. *International Journal of Therapy & Rehabilitation*, *22*(8), 377-384.

Melton, J., Forsyth, K., & Freeth, D. (2010). A practice development programme to promote the use of the Model of Human Occupation: Contexts, influential mechanisms and levels of engagement amongst occupational therapists. *British Journal Of Occupational Therapy*, *73*(11), 549-558. https://doi.org/10.4276/030802210X12892992239350

Merriam-Webster.com. (2016). Ecology. Retrieved from https://www.merriam-webster.com/dictionary/ecology

Messelink, B., Benson, T., Berghmans, B., BÖ, K., Corcos, J., Fowler, C., . . . Van Kerrebroeck, P. (2005). Standardization of terminology of pelvic floor muscle function and dysfunction: Report from the pelvic floor clinic assessment group of the international continence society. *Neurourology and Urodynamics*, 24, 374-380. Retrieved from https://hermanwallace.com/download/Standardisation_of_Terminology_of_Pelvic_Floor_Muscle_Function_and_Dysfunction_Report_from_the_Pelvic_Floor_Clinical_Assessment_Group_of_the_ICS.pdf

National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health. (2012). *Specialized bladder tests before urinary incontinence surgery in women may be unnecessary*. Retrieved from https://www.niddk.nih.gov/news/research-updates/Pages/specialized-bladder-tests-before-urinary-incontinence-surgery-in-women-way-be-unnecessary.aspx

National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health. (2016a). *Urinary incontinence in women.* Retrieved from https://www.niddk.nih.gov/health-information/health-topics/urologic-disease/urinary-incontinence-women/Pages/facts.aspx#common

National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health. (2016b). *Interstitial cystitis/painful bladder syndrome*. Retrieved from https://www.niddk.nih.gov/health-information/health-topics/urologic-disease/interstitial-cystitis-painful-bladder-syndrome/pages/facts.aspx

National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health. (2016c). *Prostatitis: Inflammation of the prostate*. Retrieved from

https://www.niddk.nih.gov/health-information/health-topics/urologic-disease/prostate-problems/pages/facts.aspx

National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health. (2016d). *Urologic disease.* Retrieved from https://www.niddk.nih.gov/about-niddk/research-areas/urologic-disease/pages/urologic-diseases.aspx

Neumann, B., Tries, J. & Plummer, M. (2009). The role of OT in the treatment of incontinence and pelvic floor disorders. *OT Practice,* 10-13. Retrieved from www.aota.org

Newman, D. K. (2014). Pelvic floor muscle rehabilitation using biofeedback. *Urologic Nursing*, *34*(4), 193-202. https://doi.org/10.7257/1053-816X.2014.34.4.193

Oblasser, C., Christie, J., & McCourt, C. (2015). Vaginal cones or balls to improve pelvic floor muscle performance and urinary continence in women postpartum: A quantitative systematic review and meta-analysis protocol. *Journal of Advanced Nursing*, *71*(4), 933-941. https://doi.org/10.1111/jan.12566

Office of Disease Prevention and Health Promotion. (2016). Health-related quality of life & well-being. In *Healthy People 2020*. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/health-related-quality-of-life-well-being

Pool-Goudzwaard, A., Gilbert, H. V. D., Marcel, V. G., Paul, M., Chris, S., & Stoeckart, R. (2004). Contribution of pelvic floor muscles to stiffness of the pelvic ring. *Clinical Biomechanics 19*(6) 564 - 571. https://doi.org/10.1016/j.clinbiomech.2004.02.008

Prott, G., Shim, L., Hansen, R., Kellow, J., & Malcolm, A. (2010). Relationships between pelvic floor symptoms and function in irritable bowel syndrome. *Neurogastroenterology and Motility: The Official Journal of the European Gastrointestinal Motility Society*, *22*(7), 764-769. https://doi.org/10.1111/j.1365-2982.2010.01503.x

Rivalta, M., Sighinolfi, M. C., Micali, S., De Stefani, S., & Bianchi, G. (2010). Sexual function and quality of life in women with urinary incontinence treated by a complete pelvic floor rehabilitation program (Biofeedback, functional electrical stimulation, pelvic floor muscles exercises, and vaginal cones). *Journal of Sexual Medicine*, *7*(3), 1200-1208. https://doi.org/10.1111/j.1743-6109.2009.01676.x

Rortveit, G., & Hunskaar, S. (2006). Urinary incontinence and age at the first and last delivery: The Norwegian HUNT/EPINCONT study. *American Journal of Obstetrics and Gynecology, 195*(2), 433-438. https://doi.org/10.1016/j.ajog.2006.01.023

Rosenbaum, T. Y. (2007). Pelvic floor involvement in male and female sexual dysfunction and the role of pelvic floor rehabilitation in treatment: A literature review. *Journal of Sexual Medicine*, *4*(1), 4-13. https://doi.org/10.1111/j.1743-6109.2006.00393

Rosenbaum, T. Y. (2013). An integrated mindfulness-based approach to the treatment of women with sexual pain and anxiety: promoting autonomy and mind/body connection. *Sexual and Relationship Therapy*, *28*(1–2), 20–28, https://doi.org/10.1080/14681994.2013.764981

Sabel, R. & Gallagher, B. (2015). Occupational therapy interventions for pelvic floor disorders. *OT Practice,* 20-21. Retrieved from www.aota.org

Sacco-Peterson, M., & Borell, L. (2004). Struggles for autonomy in self-care: The impact of the physical and socio-cultural environment in a long-term care setting. *Scandinavian Journal of Caring Sciences*, *18*(4), 376-386.

Sangeetha, J. M., & Rao, S. (2010). The efficacy of a comprehensive pelvic floor muscle rehabilitation program of stress urinary incontinence in women. *Indian Journal of Occupational Therapy*, *42*(1), 3-6.

Sapsford, R. (2004). Rehabilitation of pelvic floor muscles utilizing trunk stabilization. *Manual Therapy*, *9*(1), 3-12.

Serdà, B. F., & Marcos-Gragera, R. (2014). Urinary incontinence and prostate cancer: A progressive rehabilitation program design. *Rehabilitation Nursing*, *39*(6), 271-280, https://doi.org/10.1002/rnj.110

Schrepf, A., O'Donnell, M. A., Luo, Y., Bradley, C. S., Kreder, K. J., & Lutgendorf, S. K. (2016). Inflammation and symptom change in interstitial cystitis or bladder pain syndrome: A multidisciplinary approach to the study of chronic pelvic pain research network study. *Urology, 90*, 56-61. https://doi.org/10.1016/j.urology.2015.12.040

Viktrup, L., Rortveit, G., & Lose, G. (2006). Risk of stress urinary incontinence twelve years after the first pregnancy and delivery. *Obstetrics & Gynecology, 108*(2), 248-254. https://doi.org/10.1097/01.aog.0000226860.01127.0e

Wang, J., Varma, M. G., Creasman, J. M., Subak, L. L., Brown, J. S., Thom, D. H., & van den Eeden, S. K. (2010). Pelvic floor disorders and quality of life in women

with self-reported irritable bowel syndrome. *Alimentary Pharmacology & Therapeutics, 31*(3)*,* 424-431. https://doi.org/10.1111/j.1365-2036.2009.04180.x

Wright, J. (2014). Urinary Incontinence in Older Women: A Review of Conservative Therapeutic Interventions. *Reviews in Clinical Gerontology, 24,* 93-104.

Wu, J. M., Hundley A. F., Fulton, R. G., & Myers, E. R., (2009). Forecasting the prevalence of pelvic floor disorders in U.S. Women: 2010 to 2050. *Obstetrics and Gynecology, 114*(6), 1278-83. https://doi.org/10.1097/AOG.0b013e3181c2ce96

Zoorob, D., South, M., Karram, M., Sroga, J., Maxwell, R., Shah, S., & Whitside, J. (2015). A pilot randomized trial of levator injections versus physical therapy for treatment of pelvic floor myalgia and sexual pain. *Internatinal Urogynecoly Journal, 26*, 845-852. https://doi.org/10.1007/s00192-014-2606-4

Appendix A

Survey Questions for Formative Needs Assessment

Pelvic Floor Survey for Needs Assessment

Greetings Fellow Accredited Occupational Therapy Programs,

We are Occupational Therapy Students at Stanbridge University who are conducting a survey on the role of Occupational Therapists in pelvic floor rehabilitation in completion of our MSOT degree. Would you please take 2 minutes to complete this survey to help us learn how OTs can be more involved in this specialty area. All results will remain confidential and used only for a needs assessment for our project. Thank you in advance.

Deadline for completion: Thursday, July 14th, 2016 at 11:59pm

1. I consent to participate in this survey and allow the information I provide to be used in a thesis project. Yes _

2. Does your Occupational Therapy Program encompass anatomy and/or physiology of the pelvic floor?

3. To what extent do you cover pelvic floor? (Please select all that apply)

Anatomy/physiology course

Covered briefly in multiple courses

Covered in an optional elective course

Covered in an educational workshop hosted by your program

4. Does your Occupational Therapy Program provide resources to guide students wanting to pursue additional education in pelvic floor rehabilitation?

5. Would your school be interested in receiving additional information on how to specialize in pelvic floor rehabilitation?

6. If so, please provide your email in the box below to receive a copy of our resource guide at the completion of our study (Estimated completion date of May 2017).

Appendix B

Permission From Herman and Wallace

Hi Kathryn,

You are welcome to use the information on our website as long as it is for non-commercial purposes.

Warm Regards,

Mykhanh Pham

Herman & Wallace | Pelvic Rehabilitation Institute

mykhanh.pham@hermanwallace.com

www.hermanwallace.com

(646) 355-8777

Appendix C

Permission From BCIA

Hi Kathryn,

Thank you for reaching out to BCIA. I hope that our website will provide the information you seek for your project. You have our permission to copy and use the information as shown.

If you would like to speak to any OTs who already carry our credential – BCB-PMD, I would be happy to help you connect with one.

Please do not hesitate to ask me if you can think of anything else to assist your project.
Cordially,

Judy Crawford

Executive Director
BCIA
5310 Ward Rd, #201

Appendix D

Permission From Evidence in Motion

Good afternoon Tiffani,

Thank you for reaching out! I apologize for the delay. I have reached out to our programs directors, and you are welcome to use the information from our website. If you would please send us a copy of your final draft for the final approval, I will send it to our Program Director for the final approval.

Thank you again and please let me know if I can be of any further assistance. Have a wonderful day!

Monica Fielding
Customer Excellence Manager
888-709-7096

Appendix E

The Guide

Certification in Pelvic Floor Rehabilitation: A Guide for Occupational Therapists

Authors:
Angie Baker, OTD, PhD, OTR/L, CTRS; Whitney Boetel, OTS; Kathryn Powell, MPhil, MAMFT, OTS; & Tiffani Washburn, OTS

Introduction to: *The Guide*

Occupational therapists (OTs) can be involved in numerous aspects of pelvic floor rehabilitation that impact activities of daily living such as toileting, rest, sleep, and sexual activity according to the *Occupational Therapy Practice Framework: Domain and Process*, *3rd ed*., ([*Framework-III*], AOTA, 2014). Over the last ten years, the American medical guidelines have moved away from advising surgical and pharmacological intervention for pelvic floor dysfunction to behavioral techniques such as habit training, regular toileting, bladder and bowel retraining, diet and fluid regulations, and pelvic floor muscle training (Neumann, Tries & Plummer, 2009). Interdisciplinary urinary incontinence (UI) management programs that focus on pelvic strength, behavior modification, and focused rehabilitation are more effective than conventional treatment (Neumann, Tries & Plummer, 2009). The purpose of this guide is to provide adequate prerequisite information necessary to make informed decisions concerning the pursuit of continuing education and certifications in pelvic floor rehabilitation.

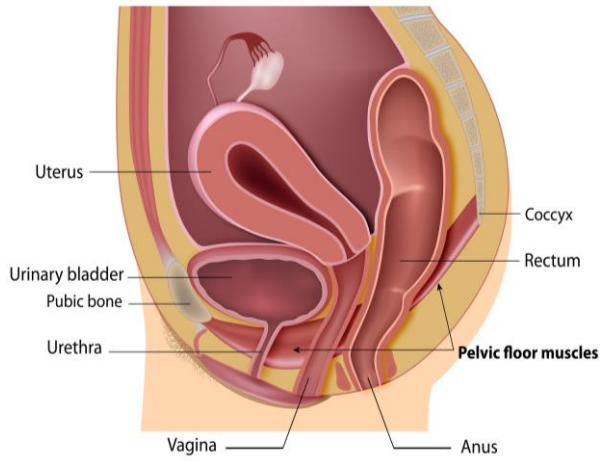
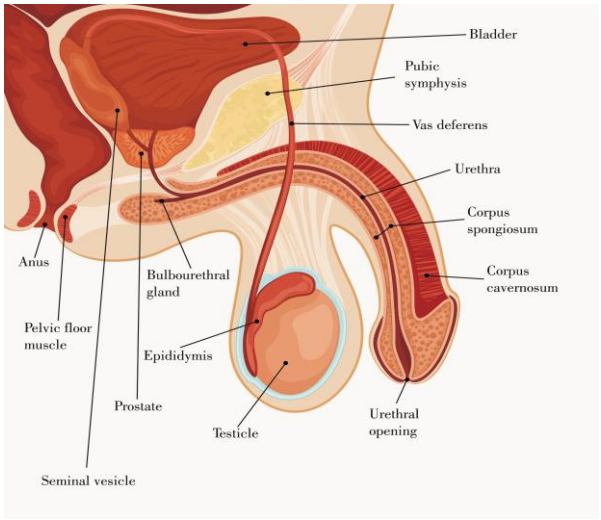
> According to the National Institute of Health ([NIH] 2016),
>
> 25 to 45 percent of women have some degree of UI. In women ages 20 to 39, 7 to 37 percent report some degree of UI. Nine to 39 percent of women older than 60 report daily UI. Women experience UI twice as often as men. Pregnancy, childbirth, menopause, and the structure of the female urinary tract account for this difference. (p.1)

OTs are currently underrepresented in the field of pelvic floor rehabilitation, yet other health professionals do not address the occupationally relevant psychosocial factors and environmental barriers. This guide provides a description of the pelvic floor, OT's

role in pelvic floor rehabilitation, and opportunities for OTs to become certified or receive additional education in pelvic floor rehabilitation.

Description of the Pelvic Floor

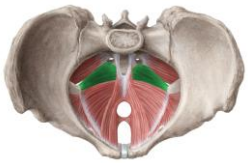
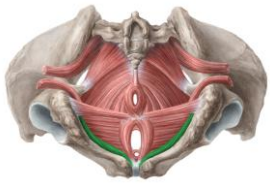
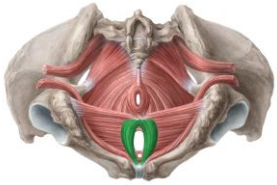
Pelvic floor dysfunction is a global term for a multitude of disorders and dysfunctions relating to the lumbopelvic myofascial and visceral structures located in and around the pelvic region (Messelink et al., 2005). The pelvic floor muscles' (PFMs) main functions are supportive, sexual, and sphincteric (Pool-Goudzwaard, Van Dijke, Van Gurp, Mulder, Snijders, & Stoeckart, 2004). Pelvic floor dysfunction refers to a group of clinical conditions that include sexual dysfunction (dyspareunia and vaginismus in women and erectile dysfunction in men), voiding problems, urinary incontinence, fecal incontinence, pelvic organ prolapse, and defecatory dysfunction (Sapsforda, 2004).

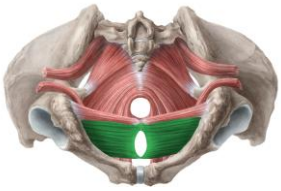
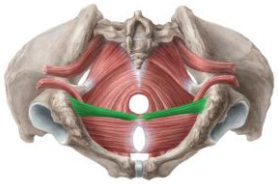
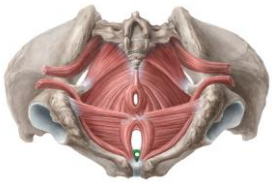
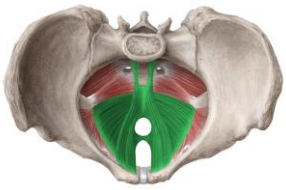
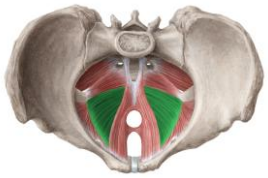
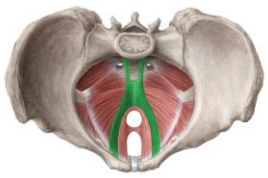
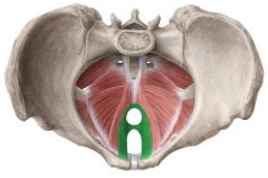
Healthy Female	Healthy Male
	

Images obtained from Shutterstock, 2016

Pelvic Floor Primary Muscle Chart

The pelvic floor muscles (PFMs) are a group of muscles that act as one of the primary support systems to stabilize the pelvic region (Pool-Goudzwaard, et al., 2004). Although various literature may categorize the levator ani muscle group differently, universally these are all the muscles encompassed within the pelvic floor.

Muscle & Innervation	Inferior or Superior View	Origin	Insertion	Function
Coccygeus **S4, S5, or S3-S4**		**Both sexes:** Spine of ischium, sacrospinous ligament	**Both sexes:** Coccyx bone, sacrum	**Both sexes:** Elevates the pelvic floor, pulls posteriorly after defecation, and closes the posterior part of the outlet of the pelvis
Ischiocavernosus **Perineal nerve**		**Males:** Tuberosity of ischium **Females:** Ramus of ischium	**Males:** Crus of penis **Female**s: Corpus Cavernosum of clitoris	**Both sexes:** Contracts the anus **Males:** Stabilizes erect penis, compresses the crus penis, delays the return of the blood through the veins, and serves to maintain the organ erect **Females:** Compresses crus of clitoris and contracts vagina during orgasm
Bulbospongiosus (bulbocavernosus in older texts) **Deep branch of pudendal nerve**		**Both sexes:** Central tendon of perineum, median raphe	**Both sexes:** Inferior fascia of the urogenital diaphragm	**Males:** Contracts to expel the last drops of urine or semen, assists in erection, facilitates ejaculation, and controls feelings of orgasm **Females:** Contracts to expel the last drops of urine, constricts the vagina, promotes clitoral erection, and controls feelings of orgasm

Deep Transverse Perineal **Pudendal nerve**		**Both sexes:** Ramus of ischium	**Both sexes:** Deep transverse perineal muscle of the opposite side	**Both sexes:** Supports fixation of the central tendon of the perineum, promotes pelvic floor function, and expels last drops of urine **Males:** Expulses semen
Superficial Transverse Perineal **Perineal nerve**		**Both sexes:** Tuberosity of ischium	**Both sexes:** Central tendon of perineum	**Both sexes:** Supports fixation of central tendon of perineum and promotes pelvic floor functions
Sphincter Urethrae **Deep branch of perineal nerve**		**Both sexes:** Junction of inferior rami of pubis & Ischium and the neighboring fasciae	**Both sexes:** Isiopubic rami	**Both sexes:** Constricts urethra and maintains urinary continence
Levator Ani **Divided into 3 layers:** **1. Iliococcygeus** **2. pubococcygeu** **3. puborectalis** **(see below)**		NA	N/A	**Both sexes:** Elevates the pelvic floor, mid-urethral vagina vault and anus
1. Iliococcygeus **Pudendal nerve**		**Both sexes:** Inner side of ischium & posterior part of the tendinous arch of the obturator fascia	**Both sexes:** Coccyx bone & anococcygeal body	**Both sexes:** Elevates the pelvic floor, elevates and closes anus
2. Pubococcygeus **S3, S4**		**Both sexes:** Pubic bone	**Both sexes:** Central tendon of perineum, anococcygeal body, and coccyx bone	**Both sexes:** Elevates the pelvic floor, controls urine flow, and contracts during orgasm
3. Puborectalis **S3, S4**		**Both sexes:** Lateral from pubis symphysis	**Both sexes:** Anorectal junction	**Both sexes:** Pulls the distal rectum forward and superiorly, and inhibits defecation

Adapted from Britannica (2016), Corton (2009), Kenhub (2016), & Newman (2014).

Images obtained in license with Kenhub (2016)
https://www.kenhub.com

Occupational Therapy's Role

Occupational therapists (OTs) are uniquely suited to address environmental barriers and psychosocial factors in addition to neuromuscular concerns in all patients. This holistic approach is especially helpful in treating pelvic floor dysfunction, as no other profession in this field has extensive training in these combined areas. The physiological effects of pelvic floor dysfunction can lead to increased depression and anxiety levels which can be detrimental to making progress in pelvic floor intervention (Khan et al., 2013). OTs can offer conservative solutions by promoting occupational engagement before surgical considerations (Neumann, Tries, & Plummer, 2009). OT is a holistic profession that focuses on promoting independence in functional activities by removing barriers to help the client achieve optimal performance (Hajjar & Twiss, 2013).

The number of individuals in the United States with pelvic floor dysfunction is on the rise. OTs may come across clients with pelvic floor dysfunction regardless of practice area. Pelvic floor dysfunctions do not discriminate by age, gender, or health status. Primarily, pelvic floor dysfunctions affect urinary, bowel, sexual, and physiological structures. The variety of pelvic floor dysfunctions has similar effects client's occupations. Impacted occupations include toileting, sexual relationships, social engagement, and psychological and physical wellbeing. The *Occupational Therapy*

Practice Framework: Domain and Process, *3rd ed*., ([*Framework-III*], AOTA, 2014), addresses OT's domain in rehabilitating people from these conditions (*See occupations*). The *Framework-III* acknowledges that OTs are equipped to address activities of daily living (ADLs) such as toileting and sexual activity. OTs can additionally address health management, maintenance, and education. These skills are essential to ensure clients with a pelvic floor dysfunction are able to improve their quality of life by eliminating symptoms of the dysfunction. The *Occupational Therapy Practice Framework: Domain and Process*, *3rd ed*., recognizes that occupational therapists address client factors, including "structures related to the digestive, metabolic, and endocrine system", in addition to "structures related to the genitourinary and reproductive system," ([*Framework-III*], AOTA, 2014, p. S24). With pursuit of advanced education in pelvic floor rehabilitation, OTs are one of the few branches of allied health care services recognized as equipped to treat pelvic floor disorders (Herman & Wallace, 2016). The chart below directly links occupational therapy's role in pelvic floor rehabilitation as defined by the *Framework-III,* in addition to various OT models and evidence-based interventions.

Occupational Therapy Practice and Domain

Pelvic Floor Conditions	Occupational Therapy Practice Framework-III Occupations	Frame of References and Models	Pelvic Floor Rehabilitation Interventions
Urinary Concerns ● Urinary Incontinence (UI) ● Stress Urinary Incontinence (SUI) ● Multiple Urinary Incontinence (MUI) ● Interstitial Cystitis (IC) ● Bladder Pain Syndrome (BPS) **Bowel Concerns** ● Fecal Incontinence ● Irritable Bowel Syndrome (IBS) **Sexual Dysfunction** ● Female ● Male ● Nonbinary **Pelvic Pain** ● Chronic Prostatitis ● Urological Chronic Pelvic Pain Syndrome (UCPPS) **Structural Integrity** ● Prolapse ● Congenital Urologic Disorders **Physical/Psychological Trauma** ● Rape ● Physical Injury ● Battle Wounds **Postmenopausal** ● Low Estrogen **Surgical Complications** ● Hysterectomy ● Gender Change Surgery ● Genitourinary Cancer ● Cancer Surgery and Scarring **Neurological Trauma** ● Spinal Cord Injury (SCI) ● Cerebrovascular Accident (CVA) **Sensual Wellness**	**Activities of Daily Living (ADLs)** ● Toileting ● Toilet Hygiene ● Functional Mobility ● Personal Device Care ● Sexual Activity ● Personal Hygiene and Grooming **Instrumental Activities of Daily Living (iADLs)** ● Community Mobility ● Health Management and Maintenance **Rest and Sleep** ● Rest ● Sleep Preparation/ Participation **Education** ● Informal Personal Educational Needs or Interest Exploration **Work** ● Job Performance **Play** ● Play Participation **Leisure** ● Leisure Participation **Social Participation** ● Community ● Family ● Peer, Friend	**Cognitive Behavioral Therapy** (CBT) **Ecology of Human Performance** (EHP) **Behavioral** **Model of Human Occupation** (MOHO) **Person-Environment-Occupation Model** (PEO) **Person-Environment-Occupation- Performance Model** (PEOP) **Permission, Limited Information, Specific Suggestion, Intensive Therapy** (PLISSIT) **Biomechanical** **Psychosocial** **Quadraphonic**	**Environmental Modifications** **Behavioral Training** **Biofeedback** **Neuromuscular Re-education** **Dietary Modification** **Education on Proper Bowel Mechanics** **Healthy Sexual Functioning** **Vaginal Renewal Program** **Visceral Manipulation** **Manual Therapy** **Mindfulness** **Medication Management** **Pain Management** **Habit Training**

Interventions

OT Practitioner Intervention	Purpose	Resource
Diaphragmatic Breathing & Progressive Muscle Relaxation	• Strengthen pelvic floor muscles • Stress management	http://www.psychology.uga.edu/sites/default/files/CVs/Clinic_Diaphragmatic_Breathing.pdf
Kegel Exercises	• Strengthen pelvic floor muscles	https://www.niddk.nih.gov/health-information/health-topics/urologic-disease/urinary-incontinence-women/pages/insertc.aspx
Self-Regulation Techniques	• Biofeedback • Increase proprioception of pelvic floor muscles	http://learninginaction.com/PDF/SRS.pdf
Behavioral Modification	• Habit training	Habit Training Worksheet
Cognitive Behavioral Therapy	• Eliminate irrational thoughts • Improve self-esteem and meaningful participation	http://www.abct.org/Information/?m=mInformation&fa=_Videos
Environmental Modification	• Easier, quicker, and safer bathroom use	https://www.squattypotty.com
Mindfulness Techniques & Relaxation Techniques	• Stress management • Self-awareness	http://www.therapistaid.com/therapy-worksheet/relaxation-techniques/none/none
Client Education	• Inform client about condition and environmental equipment available	http://femaniwellness.com/sex-education-downloads/

Pelvic Floor Practitioner Intervention	Purpose	Resources
Biofeedback with Pelvic Floor Exercise	• Decrease urinary incontinence, strengthen pelvic floor muscles, and decrease constipation	http://www.bcia.org/i4a/pages/index.cfm?pageid=3690
Visceral Manipulation (VM)	• Address musculoskeletal, vascular, nervous, urogenital, respiratory, digestive, and lymphatic dysfunction • Address structural and functional imbalances, and treat dynamics of motion	www.barralinstitute.com
Pelvic Floor Manual Therapy (PFMT)	• Internal and external soft tissue massage • Trigger point release and decrease pain	http://www.pelvicphysiotherapy.com/manual-therapy/

Best Evidence

Clinical scenario: *A therapist walks into work at a rehabilitation hospital. To her surprise, a man is hospitalized after radical prostatectomy and experiencing urinary incontinence. The therapist does not typically work with clients who have a pelvic floor dysfunction, so she begins to panic because she is unaware of the most effective interventions. The therapist asks, "What is the most effective treatment method for treating the multitude of pelvic floor dysfunctions?"*

Current evidence states that the use of biofeedback in conjunction with traditional pelvic floor rehabilitation is the most effective treatment in treating a multitude of pelvic floor disorders (Koh, Young, Young, & Solomon, 2008; Hsu, Liao, Lai, & Tsai, 2016). Additionally, research has shown that an approach called Mindfulness-Based Cognitive Therapy (MBCT), a combination of Cognitive-Based Therapy (CBT) and mindfulness, may be more effective in treating pelvic pain than CBT or mindfulness alone. Both types of therapy address the anxiety associated with the pain which is an essential step in decreasing and eliminating the pain (Basson, 2012). Furthermore, Mindfulness-Based Stress Reduction (MBSR) is an intervention that targets the biopsychosocial aspect of a person using a combination of meditation, hatha yoga stretches, and breathing techniques. MBSR in an effective intervention used to relieve chronic pain, stress, mood, and depression for patients with irritable bowel syndrome (IBS) and irritable bowel disease (IBD) (Zernicke, Campbell, Blustein, Fung, Johnson, Bacon, & Carlson 2013).

Certifications and Additional Education

At this time, no single certification is required to treat pelvic floor dysfunction; however, to be a competent pelvic floor therapist, further education is recommended. Based on anecdotal evidence, Herman and Wallace and Biofeedback Certification International Alliance (BCIA) are the two most recognized certifications available to support competency in treating pelvic floor dysfunction; however, new certifications, such as Evidence in Motion are on the rise.

Evidence in Motion has created a new certification program in pelvic floor rehabilitation as of 2016. They have created a one-year certification program for pelvic health. This course offers the option for physical therapists and occupational therapists to earn a doctorate while completing their certification in a cohort setting. Herman and Wallace is a comprehensive certification course series addressing manual therapy to treat pelvic floor dysfunction and pelvic pain. 2,000 patient contact hours are needed to complete this certification with an associated capstone project. Biofeedback Certification International Alliance (BCIA), a less rigorous course, requires 18 mentoring hours in addition to their courses. Evidence in Motion is offering a program to obtain certification in pelvic floor rehabilitation geared towards occupational therapists. This one-year program offers an optional Post-Professional Doctorate of Occupational Therapy (OTD) in conjunction with pelvic health certification. Therapists can take individual courses for Herman and Wallace, BCIA, and Evidence in Motion without pursuing a certification. The purpose of this section is to provide the facts so that occupational therapists can choose further education that best fits their needs. The certifications and additional education options are broken up into three sections: certification in pelvic floor

rehabilitation, certifications related to pelvic floor, and educational courses that do not have a certification, yet offer essential knowledge in the field.

Certification in Pelvic Floor Rehabilitation

	Herman & Wallace	Biofeedback Certification International Alliance (BCIA)	Evidence in Motion
Certification Title	Pelvic Rehabilitation Practitioner Certification (PRPC)	Pelvic Muscle Dysfunction Biofeedback Certification (PMDBC)	Pelvic Health Certification (PHC)/ Post-Professional Doctorate of Occupational Therapy (OTD)
Purpose	"To recognize expertise in the treatment of patients of any gender and age experiencing pelvic pain, pelvic girdle dysfunction, conditions of bowel, bladder, and sexual dysfunction that relate, in whole or in part, to the health and function of pelvic structures and the pelvic floor."	"BCIA is recognized as the certification body for the clinical practice of biofeedback by the Association of Applied Psychophysiology and Biofeedback (AAPB), the Biofeedback Federation of Europe (BFE), and the International Society for Neurofeedback and Research (ISNR)."	"Evidence In Motion's new Pelvic Health Certification (PHC) will enable you to understand the structure and function of the pelvic floor and prepare you to incorporate it into practice. You will learn how to incorporate the pelvic floor into your treatment for your hip, back, and SI joint patients, and you will also receive valuable instruction on a variety of topics related to the pelvic floor in men and women."
Type of Learning	**COURSES** • **Pelvic Floor Level 1** Introductory course on female pelvic floor function, dysfunction, and treatment interventions • **Pelvic Floor Level 2A** Intermediate-level seminar on comprehensive evaluation and treatment of female and male pelvic floor dysfunction. Overview of 3 bowel dysfunctions • **Pelvic Floor Level 2B** Intermediate-level that further defines skills and knowledge and provides advanced examination techniques in urogynecologic conditions with a specific focus on prolapse and pelvic organ descent, and various pelvic pain diagnoses. • **Capstone Project** 3-day extensive course designed to build on the skills learned in Pelvic Floor Levels	**COURSES** • **24-hour didactic** 1. Applied Psychophysiology & Biofeedback 2. Pelvic Floor Anatomy, Surface EMG Assessment, Treatment Planning & Ethics 3. Clinical Disorders I Bladder Dysfunction 4. Clinical Disorders II Bowel Dysfunction 5. Clinical Disorders III Chronic Pelvic Pain • **4-hour practicum** EMG pelvic floor muscle assessment, surface EMG pelvic floor biofeedback training, and a relaxation exercise **MENTORING** • 12 contact hours spent with a BCIA-approved mentor to learn to apply the clinical	**COURSES** • EBP 6100 – Evidence Based Practice I • Therapeutic Neuroscience Education (TNE) • PHPT 6510 – Pelvic Floor 1 – Applications for Orthopaedic Physical Therapists** • PFHPT 6520 – Pelvic Floor 2 – Advanced Topics and Internal Techniques** **TOPIC COURSES/ ELECTIVES (PT & OT)** Elective Courses: student must take 2 of the 5 electives provided • PHPT 6110 – Lifestyle Considerations • PHPT 6120 – Sexuality Considerations • PHPT 6130 – Pelvic Floor Post-op/Pharmacology • PHPT 6140 – Special Populations

	1, 2A, and 2B and covers advanced topics in women's health including endometriosis, infertility, and polycystic ovarian syndrome (PCOS), **CONTACT HOURS** • **Full PRPC Certification** Requires an additional 2000 patient contact hours **EXAM** • A comprehensive exam covering both internal and external treatments for pelvic floor dysfunction.	biofeedback skills through 30 patient/client sessions and case conference presentations, with an additional 6 hours spent with your mentor to enhance the clinical skills designed as needed for each candidate. (Check BCIA website for certified mentor near you) **EXAM** • Covering 5 core topics	• ORPT 6110 – Diagnosis and Management of Chronic Spinal Pain **CAPSTONE COURSE & EXAM** • PHPT 7170 – Certification Virtual Rounds & Case Presentations • PHPT 7080 – PFPTC ** Capstone Examinations: Includes a 2-day onsite lab intensive hosted at various locations nationwide
Length	Time is dependent upon course times available **Level 1:** 3-day seminar **Level 2A:** 3-day seminar **Level 2B:** 3-day seminar **Capstone:** 3-day seminar	3-4 day didactic courses are only offered a few times/yr Time is dependent upon course time available and 12 additional mentor contact hours (18 mentor hours if not taken with courses)	A 12-month cohort setting that builds lasting professional relationships with fellow students 2 on-site trainings that are 2 days each
+Cost *** These are the costs per the website as of 1/24/17**	**Course**: **Level 1:** $695 **Level 2A:** $695 **Level 2B:** $695 **Capstone :** $695 **All Courses:** $2,780 **Exam:** $950 **Application Fee:** $250 **Mail-in Fee:** $100 **TOTAL COST** **$4,080**	**Course**: $500-$1,000 **Mentoring**: Averages ($15-$24/hr)(18) = $360-$432 **Exam**: **Special Exam Online:** $50 **Special Paper/Pencil:** $100 **CPE Special Online:** $25 **Application Fee:** $245- affiliated professional (member of AAPB, SUNA, APTA, AOTA, etc.) $295 for a non-affiliated professional, $195 if this is your second BCIA certification. **TOTAL COST** **$1,080-$1,827**	**TOTAL COST** **OT Cert:** $6,400 **PT Cert:** $6,700 **Cert+DPT:** $9,425 **Cert+OTD:** $11,625
Websites	https://hermanwallace.com/continuing-education-courses	http://bcia.org/i4a/pages/index.cfm?pageid=1	http://www.evidenceinmotion.com/educational-offerings/course/pelvic-health-certification/

Adapted from Herman and Wallace (2016), BCIA (2016) & Evidence in Motion (2016)

Certifications Related to Pelvic Floor Rehabilitation

Phoenix Core Solutions & Pelvic Rotator Cuff Institute	Barral Institute
PRC Institute Certification Includes: **4 Webinar Courses** (PPT and kit included) • Pelvic Muscle, Bladder & Bowel Dysfunction • Pelvic Rotator Cuff: Low back, SI, Hip, Knee & Ankle • 2 Elective Courses **4 Course Exams** **Post-Exam** **2 Written Case Studies** **Website:** http://www.phoenixpub.com/index.php?page=webinar-information	**Techniques Certification Level (CVTP) Includes:** **Seminar Courses** • Visceral Manipulation: Abdomen 1 (VM1) • Visceral Manipulation: Abdomen 2 (VM2) • Visceral Manipulation: The Pelvis (VM3) • Visceral Manipulation: The Thorax (VM4) **At-home objective exam**: covers VM1-VM4. **10 Written Case Analyses** **Website:** http://www.barralinstitute.com

Additional Education and CEU Courses

Company	Contact Info	Website
Maitland Australian Physiotherapy Seminars (MAPS)	1(800) 828-0738 USA meghan@ozpt.com	https://www.ozpt.com/
Pelvic Floor First	03 9347 2522 AU fitness@continence.org.au	https://members.fitnessnetwork.com.au/pages/eshop/products/pre-and-post-natal
Cross Country Education	1(800) 397-0180 USA customerservice@CrossCountryEducation.com	https://www.crosscountryeducation.com/cce/continuing-education/index.jsp
The Prometheus Group	1(800) 442-2325 USA info@theprogrp.com	http://theprogrp.com/continuing-education/
Medbridge	1(206) 216-5003 USA support@medbridgeed.com	https://www.medbridgeeducation.com/courses - /
Biofeedback Incontinence Solutions	tiffanylee@centurytel.net	http://www.pelvicfloorbiofeedback.com/courses.html
Marquette University	1(414) 288-5053 USA	http://www.marquette.edu/health-sciences/continuing-ed.php
Herman & Wallace	1(646) 355-8777 USA	https://hermanwallace.com/continuing-education-courses

Final Note

We hope that after digesting this manual, occupational therapists (OTs) feel more knowledgeable about the connections between OT, pelvic floor rehabilitation, and the options available to explore this exciting field. It is our hope that OTs take action to increase the quality of life of each patient experiencing a pelvic floor dysfunction. Whether you are an OT student or have been practicing for many years, there is a need for continued occupational therapy education to provide evidence-based interventions for patients who have been impacted by pelvic floor dysfunction.

We recommend that our readers consider joining related social media groups that address pelvic floor concerns. For example, “WomensHealth4OT” is a Facebook group with 812 members working or interested in the education of healthcare for women. The topics covered deal with evidence-based research interventions, upcoming events, and an opportunity to ask questions about the subject.

Our group would like to thank our contributors Dr. Desiree Pabin (PT, DPT), Donnamarie Krause (MS, OTR/L) and Dr. Brenda Neumann (OTR/L, BCB-PMD) for their time, knowledge, and professional advice to help us make this guide. Each contributor shaped our passion and interest in pelvic floor rehabilitation throughout this journey. Thank you to our audience who took the time to read our guide. If you have any questions, concerns, or additional information regarding the guide, please contact us at: pelvicfloorot@gmail.com.

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PRESENTATIONS

Baker, A., Powell, K., & Washburn, T. (2017, March). Certification in pelvic floor rehabilitation; A guide for occupational therapist. Speaker session presented at the Spring Symposium of the Occupational Therapy Association of California (OTAC), San Diego, CA.

Baker, A., Boetel, W., Powell, K., & Washburn, T. (2016, December). Certification in pelvic floor rehabilitation; A guide for occupational therapist. Poster session presented at the Chronic Conditions Specialty Conference of the American Occupational Therapy Association (AOTA), Orlando, FL.

References

American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy, 68*(Suppl. 1), S1-S48.

Basson, R. (2012). The recurrent pain and sexual sequelae of provoked vestibulodynia: A perpetuating cycle. *J Sex Med*, *9*, 2077-2092. DOI: 10.1111/j.1743 6109.2012.02803.x

Corton, M. M. (2009). Anatomy of pelvic floor dysfunction. *Obstetrics Sr Gynecology Clinics of North America, 36*(3), 401-419. Continuing education programs for physical therapists. (n.d.). Retrieved from http://www.evidenceinmotion.com/

Female Pelvic Floor Labeled [Photograph]. (2016). Alila Medical Media, Shutterstock, New York.

Hajjar, R. & Twiss, K. L. (2013). Urgent interventions: Promoting occupational engagement for clients with urinary incontinence. *OT Practice*, *18*, 8-12. Retrieved from www.aota.org

Hsu, L., Liao, Y., Lai, F., & Tsai, P. (2016). Beneficial effects of biofeedback-assisted pelvic floor muscle training in patients with urinary incontinence after radical prostatectomy: A systematic review and meta-analysis. *International Journal of Nursing Studies*, *60*99-111. doi:10.1016/j.ijnurstu.2016.03.013

Kenhub. (2016) *Pelvic floor muscles*. Retrieved from https://www.kenhub.com/en/videos/pelvic-floor-muscles

Khan, Z. A., Whittal, C., Mansol, S., Osborne, L. A., Reed, P., & Emery, S. (2013). Effect of depression and anxiety on the success of pelvic floor muscle training for pelvic floor dysfunction. *Journal of Obstetrics and Gynaecology, 33*, 710-714.

Koh, C. E., Young, C. J., Young, J. M., & Solomon, M. J. (2008). Systematic review of randomized controlled trials of the effectiveness of biofeedback for pelvic floor dysfunction. *The British Journal of Surgery*, *95*(9), 1079-1087. doi:10.1002/bjs.6303

Male Reproductive System [Photograph]. (2016). Logika600, Shutterstock, New York.

Messelink, B., Benson, T., Berghmans, B., BÖ, K., Corcos, J., Fowler, C., . . . Van Kerrebroeck, P. (2005). Standardization of terminology of pelvic floor muscle function and dysfunction: Report from the pelvic floor clinic assessment group of the international continence society. *Neurourology and Urodynamics*, *24*, 374-380. Retrieved from https://hermanwallace.com/download/Standardisation_of_Terminology_of_Pelvic_Floor_Muscle_Function_and_Dysfunction_Report_from_the_Pelvic_Floor_Clinical_Assessment_Group_of_the_ICS.pdf

National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health. (2016). *Urinary incontinence in women*. Retrieved from https://www.niddk.nih.gov/health-information/health-topics/urologic-disease/urinary-incontinence-women/Pages/facts.aspx#common

Neumann, B., Tries, J. & Plummer, M. (2009). The role of OT in the treatment of incontinence and pelvic floor disorders. *OT Practice,* March 23rd, 10-13. Retrieved from www.aota.org

Newman, D. K. (2014). Pelvic floor muscle rehabilitation using biofeedback. *Urologic Nursing*, *34*(4), 193-202 10p. doi:10.7257/1053-816X.2014.34.4.193

Oblasser, C., Christie, J., & McCourt, C. (2015). Vaginal cones or balls to improve pelvic floor muscle performance and urinary continence in women postpartum: a quantitative systematic review and meta-analysis protocol. *Journal of Advanced Nursing*, *71*(4), 933-941. doi:10.1111/jan.12566

Pool-Goudzwaard, A., Gilbert, H. V. D., Marcel, V. G., Paul, M., Chris, S., & Stoeckart, R. (2004). Contribution of pelvic floor muscles to stiffness of the pelvic ring. *Clinical Biomechanics, 19*(6), 564 - 571. http://dx.doi.org/10.1016/j.clinbiomech.2004.02.008

Sapsford, R. (2004). Rehabilitation of pelvic floor muscles utilizing trunk stabilization. *Manual Therapy*, *9*(1), 3-12.

The Editors of Britannica Encyclopedia. (1998). *Bulbocavernosus muscle*. Retrieved from https://www.britannica.com/science/bulbocavernosus-muscle

Zernicke, K. A., Campbell, T. S., Blustein, P. K., Fung, T. S., Johnson, J. A., Bacon, S. L., & Carlson, L. E. (2013). Mindfulness-based stress reduction for the treatment of irritable bowel syndrome symptoms: a randomized wait-list controlled trial. *International Journal of Behavioral Medicine*, *20*(3), 385-396. doi:10.1007/s12529-012-9241-6