

MALE URINARY INCONTINENCE: A CRITICAL APPRAISAL OF THE LITERATURE
WITH PRACTICE RECOMMENDATIONS

By

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Abstract

Urinary Incontinence (UI) is a debilitating medical condition that affects individuals' quality of life. People with this condition describe decreased enjoyment of sexual activity, as well as increased risk of experiencing depression, and anxiety. Data show that incontinence is less prevalent in men than women, which may explain the dearth of studies focusing specifically on men. As men age, their rate of suffering from UI increases from 4.8% at ages 19 to 44 to over 21% by the age of 65 years. Additionally, men who suffer from permanent UI are more likely to be institutionalized compared to those without UI and have increased risk for suicide, infections, falls, social isolation, loss of independence and may suffer from life-altering fractures. For many patients, UI may be reversible with medical intervention. A critical appraisal of UI literature found many non-surgical male UI treatments that were effective. The evidence-based information was utilized to provide primary care providers with up to date male-specific interventions for UI.

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Male Urinary Incontinence: A Critical Appraisal of the Literature with Practice Recommendations

The International Continence Society (ICS) defines Urinary Incontinence (UI) as involuntary loss of urine which is a demonstrable, social, and hygienic problem (Kececioglu, 2015). It is a common condition in the general population, especially in the elderly (Teunissen, Bosch, Weel & Lagro-Janssen, 2015). Previous research by Markland, Goode, Redden, Borrud, and Burgio (2010), showed that UI increased with age in both men and women. The frail elderly had the highest prevalence of UI of any group other than those with spinal cord injury. Causes of UI include physical stress, prostate enlargement, involuntary contraction of the bladder muscles, overfilling of the bladder, or a combination of stress and urge incontinence (Gibson & Wagg, 2015).

Within the medical community, UI has been recognized as an under-reported problem. The reasons for this are typically embarrassment and stigma associated with the inability to control bladder function. For older people, the perception that incontinence is natural part of the aging process leads to lack of reporting. This makes identification of the scope of the problem difficult (Pellatt, 2012). A UI cost study by Coyne et al. (2014) reported more than 22 million US residents have daily UI, which the authors feel may be an underestimation, as some patients may not report incontinence to their primary care providers due to shame or misconceptions regarding treatment. Reporting reluctance can also stem from other psychological factors such as intimacy concerns and loss of relationship spontaneity (Saiki, 2015).

Background and Literature Review

Urinary incontinence is more common in women than men, with the short length of the female urethra, pregnancy, childbirth, and menopause being contributing factors. The majority of research and clinical articles in UI focus on women (Pellatt, 2012). Markland et al. (2010)

concluded the following, “Sadly, many men with UI do not have the emotional and physical ability to adapt to these stressful situations and, instead, choose to suffer silently” (p. 1026). A variety of conditions may lead to male UI such as prostate and cardiac disease, neurological injuries, diabetes, medications, and depression (Markland et al., 2010). According to Chau, Maxson, Joswiak and Elliott, (2013), male UI is one of the main complications for men following surgical intervention to treat prostate diseases. Additionally, men may experience dysfunction of the bladder or the urethral sphincter. As age increased in men, so did the incidence of UI; increasing from 0.7% for ages 20-34 years, to 16.0% for ages 75 and older (Markland et al., 2010). Even though most UI can be improved or cured by medical care, studies have shown 45% (Utomo et al., 2015) to 54% (Pakgohar, Sabetghadam, Rahimparvar & Kazemnejad, 2016) of women with UI spoke to their doctor about incontinence symptoms and while there is no literature to confirm that men did not speak to their provider about UI, we suspect the rate is either similar to or less than the rate for women. The literature points to a high prevalence of UI in the elderly population, with some research on the impact of UI on women but little on men.

Urinary Incontinence Prevalence

Gibson and Wagg (2015) found that UI prevalence in those under 40 years of age was 9.7% compared to more than 30% for those over 60 years of age. Among men aged 41-60 years seen in primary care clinics in the United States Department of Veterans Affairs facilities, 4.8% experienced daily UI. The prevalence increased to 8.9% for those older than 60 (Markland et al., 2010). Twenty-nine percent of community-dwelling adult males age 65 years and older report UI (Lobchuk & Rosenberg, 2014). Although aging is not a direct cause of incontinence, the key risk factor for UI in both men and women is increasing age; up to 46% in women and 34% in

men over 80 years of age experience UI (Pellatt, 2012). In males undergoing prostate cancer surgery, almost 84% of men undergoing a radical prostatectomy experience UI postoperatively (Pellatt, 2012).

By comparison, an estimated 8.2% of the worldwide population (352 million) has been affected by UI. By 2018, almost 423 million individuals will be affected, a 21.6% increase (Irwin, Kopp, Agatep, Milsom, & Abrams, 2011). Estimates in Canada indicate that 3.3 million individuals (10% of the total population) are affected by UI; moreover, 16% of men and 33% of women over 40 years of age describe symptoms of UI (Lobchuk & Rosenberg, 2014). As UI prevalence continues to increase worldwide, costs for incontinence supplies and treatment will also increase. The literature identifies trends in prevalence with age and higher incidence in women than men for all ages and ethnic groups.

Economic Burden of UI

As a highly prevalent medical condition, UI also drives a corresponding cost associated with treatment. UI has been estimated to account for approximately 2% of healthcare costs in the United States (Kececioglu, 2015). According to Coyne et al. (2014), the total US national cost of UI in 2010 was \$66 Billion (\$49 billion direct medical, \$2.3 billion indirect medical such as patient lost work time, and \$14.6 billion overhead). The cost to manage UI in the community and nursing homes exceeded pneumonia, influenza, and breast cancer in cost per year (Stenzelius et al., 2015). A 2014 study of employees with UI reported significantly increased medical, pharmacy, and sick leave costs; members used more short-term disability days when compared to the control group (Kleinman, Chen, Atkinson, Odell & Zou, 2014). UI is also associated with medical comorbidities that impact the patient's life.

Other Impacts of UI

As a health condition, UI has received surprisingly little attention despite its documented prevalence, cost, and associated morbidity. UI may also be associated with other chronic medical conditions further impacting patient overall health and well-being (Alappattu, Neville, Beneciuk & Bishop, 2016). Just as importantly, psychological and social implications are felt by many UI sufferers; it affects their quality of life as much as the medical condition itself.

Available evidence suggests that while UI may occasionally be a standalone disorder, it is also associated with some medical and musculoskeletal conditions commonly treated by physical therapists. For example, 78% of patients who sought care in an outpatient physical therapy clinic with a primary complaint of lower back pain, also reported the presence of UI (Alappattu, et al., 2016). Although age-related conditions and change in bladder function contribute to the loss of bladder control in older adults, other medical correlates were often present. Some of the identified correlates were; neurological conditions, cognitive impairment, and the presence of lower-urinary-tract symptoms. UI was also associated with increased risks of falls and fractures which add to the financial burden of the disorder (Vaughan, Goode, Burgio, & Markland, 2011).

The psychological consequences of UI may reduce the likelihood that patients will actively seek treatment (Pakgohar et al., 2016). For some older people, the ability to hold their urine was reduced to less than two minutes, making "accidents" virtually inevitable. One-third of sampled, independently living incontinent people reported that they had never mentioned their incontinence to a physician, and when they did, interactions with some health professionals may have sent the message that UI is a regular, irreversible part of the aging process (Dawane, Pandit & Rajopadhye, 2014). According to Ernst et al. (2015), while UI was three times more common in people over 60, it was also often neglected when they consulted their health care provider.

This neglect occurred even though UI was associated with numerous health and social consequences that impact quality of life, as well as costs. All primary care providers should become more familiar with this common condition (Ernst et al., 2015) and realize that, per Dawane et al. (2014), it is likely that older adults will not bring this kind of problem up during a health care encounter. Additionally, men who suffered from permanent UI were more likely to be institutionalized compared to those without incontinence (Roig, Souza, & Lima, 2015). Males were also at increased risk for suicide, infections, falls, social isolation, loss of independence, and may have suffered from life-altering fractures (Vaughan et al., 2011). The shame and constant embarrassment associated with UI were thought to be likely barriers to treatment (De Vries, Northington, & Bogner, 2012).

According to Fritel, Lachal, Cassou, Fauconnier and Dargent-Molina (2013), significantly more people with incontinence experienced some difficulty with mobility, more so than continent respondents. Additionally, people with incontinence were less employable than those in the general population; it could also affect their social, work, personal, and sexual relationships (Mathur, Mathur & Soni, 2016). In many cases, men with UI experienced worse emotional health than women, specifically the effects on their social activity participation leading to social isolation and its sequelae (Pellatt, 2012). Older adults with UI describe feelings of vulnerability, powerlessness, and humiliation as well as increased symptom burden over time (De Vries et al., 2012). Many of these psychological complaints were a direct result of aging.

Aging and UI

Ernst et al. (2015) stated that incontinence in younger people and those in early adulthood typically resulted from conditions like spinal cord injury, neurological deficit, or birth defects. In this younger population, UI was aggressively treated and managed. Conversely, the causes of

incontinence in the elderly have been multiple and complex, including environmental, iatrogenic, and behavioral factors as well as impairments of neurological and muscular control. Some older people reported diurnal frequencies of 16 to 20 or having to urinate every 20 to 30 minutes. In many such cases, people said they were being controlled by their bladder condition (Ernst et al., 2015). Unlike their younger sufferers of UI, treatment and management were often less aggressive.

Urinary Incontinence Gender Differences

Evidence suggested that women were better than men at adapting to emotional and life changes associated with UI. Men were more likely to be embarrassed and may experience a decline in their quality of life and were less liable to seek care. A study by Utomo et al. (2015) has shown men sought medical treatment of their UI symptoms at rate of about 22%. Research suggests that men may have felt that society expected them to be strong and not show signs of weakness; UI made them felt vulnerable (Felde, Ebbesen & Hunskaar, 2015).

According to Teunissen et al. (2015), men are also fearful of the medical system and have difficulty discussing their health problems with others. The literature also reveals that incontinent men, compared with incontinent women, reported more restrictions on social and sexual activities. Teunissen et al. (2015) also found that because of incontinence, men felt more out of control and experience greater emotional challenges compared to women. The authors suggested that when affected by UI, men used more passive-emotional-oriented strategies, such as avoiding situations and feeling angry or frustrated, which is contrary to general male coping strategies. The explanation for this discrepancy might be that women associate UI with pregnancy and childbirth, and they considered UI a normal part of being female. Moreover,

women have acquired skills while managing menstrual bleeding, and that might explain their more frequent and less inhibited use of incontinent pads (Teunissen et al., 2015).

According to Pellatt (2012), Incontinence may have a major effect on many parts of a human's well-being as it can cause emotional distress which may result in suicide risk, falls, infections and other psychological effects such as social isolation, loss of independence. Additionally, men with the same condition were more apt to forego social events, suffer from depression, and were less likely to seek medical care. A coping mechanism often used by men was to wait and see if their health issues will work themselves out or go without treatment (Pellatt, 2012). In fact, social isolation and psychological distress were often mentioned in nursing journal articles when discussing UI. Indeed, the potential for UI to diminish social and emotional well-being has been well-documented. Studies show that a majority of respondents indicated that UI negatively affected their social and emotional well-being. Half to one-third of the patients felt nervous/anxious, embarrassed, or frustrated because of their incontinence (De Vries et al., 2012).

A study of the effect of urinary incontinence on the elderly used a questionnaire to describe the impact of UI on their lives. The results of the survey showed that fear, anger, embarrassment, and sleeping problems were significantly higher in men than in women. Fear that someone could "see" their incontinence (e.g. leakage, absorbent clothing, etc.), scored higher than the other impacts as reported by 20% of the male and 10% of the female patients (Teunissen et al., 2015). UI also has a profound effect on quality of life as it may result in fear of humiliation, social isolation, and loss of self-esteem. Older males experiencing UI describe experiencing feelings of vulnerability, powerlessness, and humiliation as well as increased symptom burden over time. In fact, incontinence was a classic case of a stigmatizing condition

in that it discredited a person's social identity and provoked responses of fear, stereotyping, and social control (Mathur et al., 2016). With appropriate intervention, those receiving care could have better UI management, creating a positive impact on the UI suffering community.

Treatment of UI

For many patients, UI may be reversible with medical intervention while others may require long-term management with catheters, incontinence pads or penile clamps. Men may experience a decrease in UI with treatment including medications, peri-urethral bulking, bladder slings, and behavioral modifications (Chau et al., 2013). Teamwork between affected individuals and support persons commonly involves complex management of medications, pessary devices (those placed into the vagina to support the uterus or bladder and rectum), lifestyle (type and timing of fluid intake) and behavior changes (e.g., toileting schedule, timed voiding, or pelvic floor muscle exercises), surgery, or use of containment devices. (Lobchuk & Rosenberg, 2014). Suffering from UI makes many patients dependent upon family members or medical personnel for supportive care.

UI Support

Support persons described UI as a “complicated” problem for them to manage as they often have to do so with minimal assistance from health care professionals to help ensure they were meeting affected individuals’ needs (Lobchuk & Rosenberg, 2014). Healthcare providers should make sure that clients and their family members know what community services are available for incontinence and who they can contact so clients can make informed choices about seeking help for their condition. People suffering from UI are higher users of health and social services, and this increased use is related to their health status, and social situations. However, only a minority of sufferers use these services and therefore, it is important to target and deliver

appropriate services to them following a social needs assessment. Healthcare professionals should not minimize the impact of incontinence as this would suggest it is a normal part of aging, but there are effective treatments that should be offered (Lobchuk & Rosenberg, 2014).

In their research into anxiety and depression that results from UI, Felde et al. (2015) stated that “anxiety, depression and UI are all common health problems and it is possible these conditions are related. They found there was a significant association between depression and UI both at baseline and upon development of UI. For Nurse Practitioners “it is important to be aware of the association between the conditions, both as a public-health priority and for physicians in their management of such patients” (Felde et al., p. 6).

Medical Support in Rural Alaska

UI is a health problem that affects men across the United States. States with expansive rural regions often experience an unequal distribution of physicians between rural and urban communities and tend to rely on Nurse Practitioners as an essential resource in providing needed health services in rural areas (Myhre, Adamiak, Turley, Spice & Woloschuk, 2014). Alaska has substantial challenges for providing access to health care in remote communities; sixty percent of Alaska's people live in small villages of 20–1700 people scattered across the state (Golnick et al., 2012). Most of these villages are not accessible by road, and can be reached in the summer only by airplane, boat or all-terrain vehicle (ATV) and in the winter only by airplane or snow machine in the winter (Joanna Briggs Institute, 2011). Before the inception of the Community Health Aide Program in the 1950s, residents of Alaska village communities waited for infrequent visits from itinerant physicians and nurses, they made costly trips to larger towns, or they relied on self-care. Medical intervention by Community Health Aides accounts for 90% of the coverage of health care in rural Alaska. (Golnick et al., 2012).

Relevance to Nurse Practitioners in Alaska

The fact that Alaska is overwhelmingly rural with a total land mass nearly one-third as large as the contiguous United States creates health care challenges for Alaskans residing in isolated villages. It becomes difficult for men to receive medical support at facilities with higher levels of care and a broad range of services. Community Health Aides provide care on a basic level; more advanced care, such as that provided by Nurse Practitioners is needed within the state (Golnick et al., 2012). Making clinic visits as efficient as possible utilizing the most current evidence will allow UI sufferers to promote their self-sufficiency and decrease the risk associated with long distance travel and as well as unnecessary costs to the health care system. This project sought to identify the most current interventions and provide nurse practitioners with up to date evidence-based care for males experiencing UI.

In summary, the incidence of UI increases with age for both men and women. This prevalence places an economic burden on those providing care. Research has shown that UI has a greater impact on men than women, physically and psychologically. These impacts may be reduced with early intervention by providers versed in the current best practices for treating UI. This is especially true in rural Alaska, where urological specialist support is minimal and providers, especially Nurse Practitioners are the front line of medical care. Developing easy-to-use handouts for both providers and patients can potentially benefit the UI sufferers in Alaska.

Purpose and Question

This project included a critical appraisal of research literature for the most current evidence-based practices related to the treatment of male UI. By identifying the best practice interventions specific to men this research can enhance the treatment and management of this patient population in the family practice setting. The question this project answered was: What

are the best evidence-based treatments for males with UI? A critical appraisal of the literature determined the most beneficial approaches to managing and treating male UI in a family practice setting.

Ethical Considerations

An IRB Determination of Human Subjects Research for this critical appraisal project was completed and submitted for review. (Appendix C). The UAA compliance office determined this research project did not meet the definition of human subjects' research and was exempt from IRB review.

Theoretical Framework

According to Dearholt and Dang (2012), non-research evidence encompasses a broad range of categories. Evidence includes personal, aesthetic, and ethical knowledge domains, which are reflected through the expertise, experience, and values of individual practitioners as well as the lived experiences and values of patients and their families. Opinions of recognized experts in the field (individual and collective professional authorities or consensus groups), as well as discoveries made through human and organizational (both personal and collective) experiences, add depth and breadth to the evidence review (Dearholt & Dang, 2012).

Dearholt and Dang's (2012) framework of literature appraisal was used to summarize research evidence related to male UI. Utilizing this framework, the synthesis of evidence for this paper employed comprehensive search strategies and a rigorous, appraisal method. These systematic methods helped minimize bias. This literature search used explicit, well-defined, and reproducible strategies to identify, retrieve, and appraise research for relevance and validity (quality), for data extraction, and for interpretation to synthesize a conclusion.

Proposed Study Method and Design

A critical appraisal of the literature sought to determine best practices in the treatment of male UI. An evidence table served as a guide to answer the study question “What are the most current and best evidence-based practice treatments for males with Urinary Incontinence?” The elements within the table included evidence type, sample size, study findings that helped answer the research question, limitations, and evidence rating (Appendix A). The table in Appendix A expanded and refined a synthesis matrix as described in the Johns Hopkins Nursing Evidence Based Practice Toolkit (2016) and Dearholt and Dang’s (2012) Quality Guide. The critical appraisal used Dearholt and Dang’s (2012) Quality Guide for data evaluation. Only Evidence levels I through V and “good” or “high” quality was included in the data synthesis.

The sources included Medline (PubMed), Cumulative Index to Nursing and Allied Health Literature (CINHAL), PsycINFO, Cochrane Library, ProQuest, DynaMed, GOOGLE Scholar, Arctic Health Publications Database, and Nursing Commons. The search terms were Male Urinary Incontinence, Urinary Incontinence Treatments, Urinary Incontinence Medication, Urinary Incontinence Outcomes, Elderly Male Urinary Incontinence, Male Urinary Health, Elderly Urinary Incontinence Impacts, Male Urinary Incontinence Intervention, Urge Incontinence, Overflow Incontinence, Dribbling Incontinence, Urgency, Lower Urinary Tract Symptoms and Alaska Public Health. Reference lists were also checked to ensure all relevant sources were identified.

A review of leading online patient education libraries was also conducted; the Staywell company literature contained information on urinary incontinence for women but none for males (Staywell Company Online, 2016). Similarly, Wolters Kluwer Health Online (2016) provided education to men suffering from UI but mainly instructed them to speak with their medical

provider. And finally, the American Urological Association Guidelines library was reviewed; the only information presented was for females (American Urological Association, 2016).

Literature Search and Inclusion Criteria

Inclusion criteria focused on articles published between 2010-2016, UI therapies, UI therapy reviews/expert opinions, articles written in the English language, and pertained to male subjects. Only studies that fell within these criteria were analyzed and included in the synthesis of evidence. These criteria were used to exclude data that was outside the scope of this research.

A literature search relating to the above terms via the UAA Consortium Library Quicksearch yielded 5,568 results when limited to articles within the last ten years and in the English language. A similar search on GOOGLE Scholar yielded 16,600 results. Both these searches listed results by relevance to the search criteria. It was evident after a review of the first 100 results, that the appropriateness for this research fell off quickly or became repetitive. A subjective review using the inclusion criteria of the abstracts from both lists produced 14 (Quicksearch) and 16 (GOOGLE Scholar) articles respectively. More refined searches produced very similar results, therefore the same search terms were used within the CINAHL database.

The CINAHL database allowed more appropriate refining of the results. The initial search on CINAHL using the phrase “male urinary incontinence” produced six articles, all of which met the inclusion criteria. A further search using “urinary incontinence treatments”, resulted in 57 articles, of which eight met the inclusion criteria as described above. Another search using “urinary incontinence medication” yielded 8 results, of which 5 met the criteria. Finally, a search using “male urinary health”, yielded 18 results, of which 3 met criteria.

To expand the search PubMed was used and any duplicates with CINAHL were excluded. An initial search using “male urinary incontinence” in PubMed resulted in 70 articles,

of which 4 met criteria and were not duplicates. Additionally, a search using “urinary incontinence treatments” resulted in 54 articles, of which 3 met criteria and were not duplicates. Another search using “urinary incontinence medication” yielded 13 articles, of which none were usable. And finally, a search using “male urinary health” resulted in 23 articles, of which 1 was usable.

Finally, ProQuest was searched and any duplicates with PubMed and CINAHL were excluded. An initial search using “male urinary incontinence” in ProQuest resulted in 33 articles, of which 2 met criteria and were not duplicates. Additionally, a search using “urinary incontinence treatments” resulted in 17 articles, of which 1 met criteria and was not a duplicate. Another search using “urinary incontinence medication” yielded 26 articles, of which all were duplicates. And finally, a search using “male urinary health” resulted in 93 articles, of which none were usable.

PsycINFO and DynaMED searches yielded non-relevant articles. Searches in the Cochrane Library yielded duplicate information to the CINAHL and PubMed results. The qualified data provided sufficient sources for a critical appraisal. Most of the research found was literature reviews, expert opinions of UI articles and systematic reviews of quasi- and non-experimental studies. Although several of the articles were clinical experimental studies, most evidence provided were expert opinions and literature reviews that were very broad and not specific enough to determine difference in research evidence between men and women. This project evaluated Evidence Levels I (highly controlled studies) through V (expert opinions and literature reviews) and Quality Levels A (clear, consistent results and objectives) and B (clear, credible, broader objectives) results and as defined by Dearholt and Dang (2012).

The different therapies included in the critical appraisal are shown in Figure 1. The frequency chart shows all the therapies from articles that met the inclusion criteria. Behavior Modification by far the most frequent treatment source that was found. By this chart, Behavior Modification appears to be the treatment of choice.

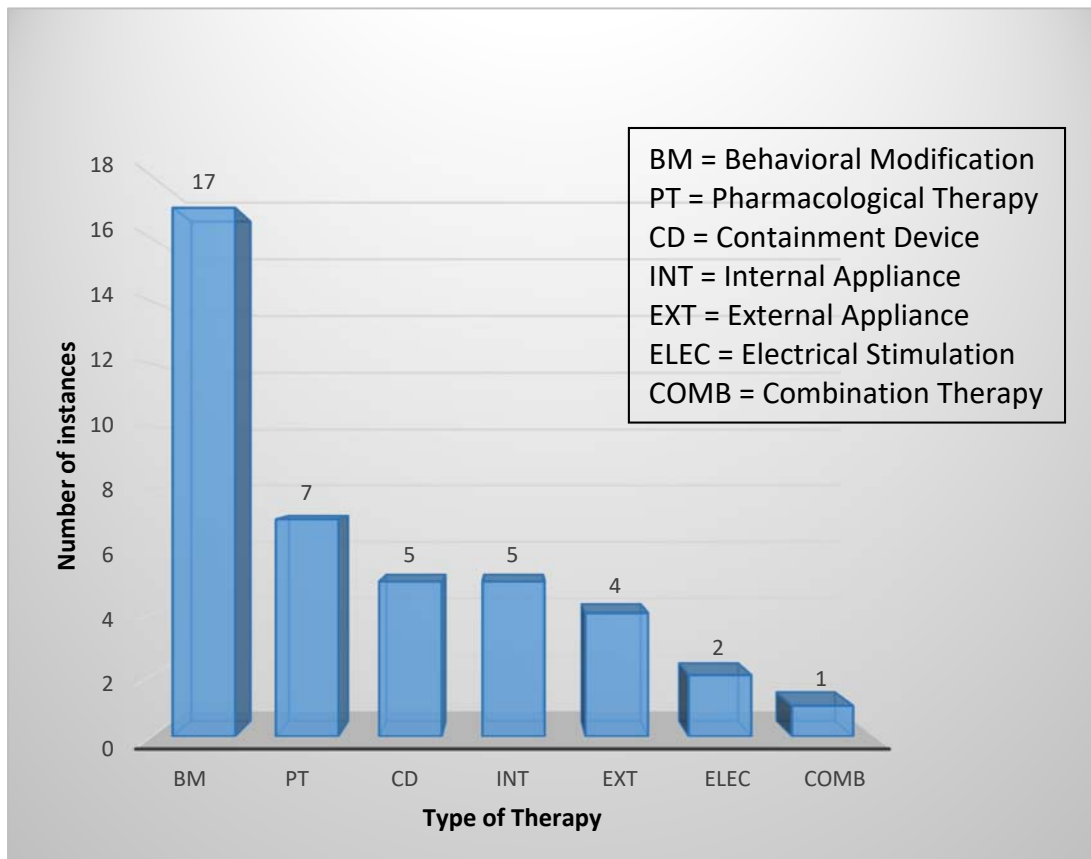


Figure 1. Frequency chart of therapies found in literature review for male urinary incontinence, by type.

To exhaust all possible sources, a search using the term “male urinary incontinence”, was used on the American Urological Association (AUA) and Krames Staywell educational supply websites (both considered highly qualified Subject Matter Expert resources within the Urological community) and did not produce results within the parameters defined above.

Critical Appraisal Results and Synthesis

The articles meeting the criteria for inclusion in this appraisal were evaluated and entered into the Synthesis Matrix. The study findings that answered the research question were assessed and grouped into therapies. There were two categories of therapies; surgical and non-surgical. While there was much information on surgical UI interventions, these interventions fall outside the scope of a Nurse Practitioner and were excluded. Armed with knowledge of non-surgical UI interventions, the Nurse Practitioners would be better able to treat their male patients effectively. According to Moore and Lucas (2010), non-surgical therapy should be the first line treatment in the management of early (i.e. the first 6-12 months) of incontinence UI for both males and females. The most common of those non-surgical therapies are behavioral in nature.

Behavioral Therapies

Much of the literature substantiates the use of Behavioral Therapy as first-line treatment of UI in males. These treatments have been found to be the least invasive and have few side effects (Stothers et al., 2010). Behavioral interventions for UI in men with prostate diseases were examined in ten studies. The continence rates in the control groups increased to more than 62% across all trials after the intervention (Markland et al., 2010). A treatment plan starts with lifestyle modifications; reducing caffeine and carbonated drinks, avoiding constipation by eating well, and establishing a predictable bowel pattern that would also avoid straining (Fawcett, 2014).

Despite the documented usefulness of Behavioral Therapies, these lifestyle modifications may not be enough. Considering another strategy, Pelvic Floor Exercises (PFE) can be taught to men with leakage or over-activity symptoms (Fawcett, 2012). Moore and Lucas (2010) found that PFE reduced the frequency and amount of UI and the time to reach a continent state.

However, Moore and Lucas also concluded that PFE has limited benefits in patients with severe UI and there is no long-term benefit of PFE training as continence rates leveled after one year. According to Shelly (2016), individualized PFE training can significantly improve symptoms of prolapse and incontinence, but it can be difficult for patients to learn how to isolate these muscles to exercise them properly. Therefore, many patients who are affected by Pelvic Floor Muscle dysfunctions, requiring skilled therapy for successful rehabilitation (Shelly, 2016).

Besides PFE, Stothers et al. (2010) found biofeedback and bladder training to be useful as additional noninvasive, behavioral options. They may be used both for cognitively impaired/institutionalized patients and for independently living, cognitively-aware geriatric patients able to participate in learning new skills. There is a considerable body of scientific evidence supporting the effectiveness of behavioral therapy, but most subjects in the studies were women (Stothers et al., 2010). Another method of training included timed or scheduled voiding. According to Testa (2015), voiding empties the bladder before incontinence can occur and limits the amount of urine in the bladder affected by stress movements. Voiding on a routine schedule, allows the bladder to fill while avoiding distention and resulting UI. Timing of the void can be individualized to best match an individual's habits and schedule (Testa, 2015).

Finally, adjustments in lifestyle can significantly impact the incidence of UI in adults. Testa (2015) further stated that weight loss has shown to improve UI in obese women because extra abdominal weight places greater force on the bladder. Smoking tobacco contributed to UI through irritating effects on the bladder and increased abdominal pressure during times of respiratory infections and cough. Balancing fluid intake involved achieving appropriate daily consumption while limiting fluids before bedtime; however, older individuals with UI should not be severely fluid restricted due to risk of dehydration and hypotension (Testa, 2010). First-line

management plans should include behavioral therapy with lifestyle adjustments followed by pharmacologic treatment (Testa, 2015).

Pharmacological Therapy

Stothers et al., (2010) found that anticholinergic drugs such as oxybutynin and tolterodine were effective in treating incontinence. Anticholinergic medications, which competitively bind to muscarinic cholinergic receptors (M2/M3) on the bladder, decreased the intensity of bladder contractions and urgency (Testa, 2010). While these medications improved UI symptoms, inhibition of M receptors outside of the bladder may cause unwanted side effects in the older adult, such as blurred vision, dry eyes, dry mouth, constipation, tachycardia, and cognitive impairment. Therefore, anticholinergic medications should be strictly regulated in the geriatric patient, started at the lowest possible dose and discontinued if poorly tolerated (Testa, 2010).

Other pharmacologic treatments for UI included antidepressants, muscarinic antagonists, and adrenergic antagonists (Markland et al., 2010). Medications with alpha agonistic properties have been shown to mildly increase the tone of the urethral sphincter. However, such medications have been used off-label because the clinical efficacy of these drugs in UI is limited (Testa, 2010). And recently, a new class of medication for overactive bladder (OAB) has been approved by the FDA. While anticholinergics work by blocking the muscarinic receptors of the detrusor muscle, these medications often have bothersome systemic side effects, including dry mouth, constipation, and confusion. The bladder also contains β -3 adrenoreceptors that promote active relaxation of the detrusor muscle. A β -3 agonist, mirabegron, has been developed and has been approved for use and has an indication for OAB (Hollander & Gonzalez, 2012).

The drug duloxetine with proven efficacy in females with UI seems to be effective in male UI as well (Tsakiris, Jean, Michel, & Oelke, 2008). Duloxetine, a selective serotonin-

noradrenalin reuptake inhibitor, is a recognized pharmacological therapy used in the management of UI (Moore and Lucas, 2010). Although studies of duloxetine are limited, evidence does suggest that there might be a place for this drug in the management of men with stress UI in the future. Duloxetine does not have FDA approval for SUI and has been used off label. (Tsarkis et al, 2008). Additionally, some patients complained of severe side effects, mainly massive fatigue or insomnia (Moore and Lucas, 2010).

Containment

Containment is a necessary aspect of incontinence care, and at times it is the only management option (Fawcett, 2014). Containment is necessary where other treatments have failed, and skin integrity is at risk (Stoher, 2010). Where containment is the only option to manage male urinary incontinence, options available include the following:

- Washable boxer shorts/YFronts (Fawcett, 2014)
- Body-worn pad (Fawcett, 2014)
- Mesh Pants (Moore and Lucas, 2010)
- Dribble Pouches (Moore and Lucas, 2010)
- Conduction Aids (Moore and Lucas, 2010)

In her opinion article, Wilson (2016) described incontinence pads as preventing urine from contaminating clothing, furniture, and bedding, thereby allowing the individual to keep the symptoms private. Pad selection depended on the amount of urine loss and when, during the day and night, it is experienced. She posited “it is the role of the assessor, guided by the patient, alongside the information gathered during the assessment, to make the appropriate choice” (p. 222). The patient should use the smallest pad that is suitable for urine loss. Another option is washable pads and pants; they are particularly appropriate where patients experience skin

reactions to disposable pads. For men, there are various disposable and washable dribble pouches, worn over the penis. There are also disposable pads and washable, stay-dry sheets available, for the bed and the chair (Wilson, 2016).

Internal Appliances

The use of internal appliances in the treatment of UI becomes more invasive than previous options. Barrie (2016) and Smart (2014) suggest internal appliances, such as various forms of catheterization (indwelling or suprapubic catheters and Intermittent Self-Catheterization (ISC)), should only be used as a last resort when conservative treatment measures have failed as they often cause complications. This is because indwelling catheters, in particular, can cause infection, blocking, bypassing and discomfort along with an increased risk of urosepsis and symptomatic UTIs. Suprapubic catheterization eliminated trauma and was more acceptable to those who were sexually active, but this was often not appropriate for those with cognitive impairment as there was a tendency to pull at the catheter. ISC was the most suitable option for those with incomplete bladder emptying (Barrie, 2015).

According to Hollander and Gonzalez (2012), men who suffered from UI that was non-obstructed but had high post-void residuals included groups with detrusor underactivity and impaired contractility. The new β -3 adrenoreceptor agonists might also be effective in this population, although this has not been investigated (Hollander and Gonzalez, 2012). Although indwelling catheters are the last resort for managing UI, they are necessary for problems in bladder emptying, where intermittent catheterization is not an option, and allow urine drainage, thus managing overflow UI (Wilson, 2016).

External Appliances

Penile clamps and condom catheters are occasionally used but are not considered socially acceptable and can be a source of anxiety and discomfort (Moore & Lucas, 2010). Alternatively, Wilson (2014) showed external appliances such as urinary sheaths could be a viable option. They offered a practical, cost-effective alternative to pads, pants, and the indwelling catheter. They were suitable for men with moderate-to-severe urinary incontinence, and those who experienced urgency and frequency and found it difficult to get to the toilet in time. Although latex sheaths are still available, the majority are made of latex-free (silicone) material. They come in one- or two-piece types and have variable penile circumference sizes and standard and short lengths, so individual measurement is essential (Wilson, 2015). Smart (2014) states that the urinary sheath, if used correctly, is a safe, discreet, convenient and comfortable method of managing male incontinence and compares favorably with pads and indwelling catheters. Compared with pads, the urinary sheath was more hygienic, comfortable, cost-effective and more environmentally friendly. As the sheath directed urine away from the body, there was less likelihood of skin excoriation and infection, and there was less urine odor, as it is not exposed to air when the pad is full or has leaked onto clothing. Compared with indwelling catheters, the risk of urinary tract infection (UTI) is substantially reduced. A study involving 75 hospitalized men aged over 40 years old, without dementia, concluded that patients with an indwelling catheter were five times more likely to develop bacteriuria, symptomatic UTI or to die as those who used a urinary sheath (Smart 2014).

Smart (2014) stated that some men, although eager to use a sheath, were unable to do so because of allergy or retraction. An alternative to the utilization of a sheath is CliniMed's Bioderm; a product also appropriate for men experiencing frequent erections. Manufactured

from hydrocolloid and latex free, it can remain in place for three days; one size fits all, and it connects to the urine drainage bag. Bioderm is appropriate for both circumcised and uncircumcised men, providing the foreskin will retract. Also available are body-worn urinals. Pubic pressure urinals are fitted when the patient has a retracted penis; the application of pubic pressure, exerted by a flange held firmly over the pubic area by groin and waist straps, extends the penile length. The appliance may have its own urine-collecting cone, or allow attachment of a non-adherent sheath. In her experience, some men wear an appliance only for going out and then do not have to remove an adhesive sheath on returning home (Smart, 2014).

Electrical Stimulation

Among the various conservative treatments that can be used to treat urinary incontinence, Functional Electrical Stimulation (FES) has been proposed as a promising alternative (Terzoni et al., 2015). This treatment is administered through anal probes or surface electrodes placed in the perineal area. Electrical impulses are produced by a dedicated machine, relayed by the probe or the electrodes, and transmitted to the muscles through afferent nerve fibers (Terzoni et al., 2015).

According to Hollander and Gonzalez (2010), electrical stimulation of the sacral nerve roots (S3–S4) is approved by the Food and Drug Administration (FDA) for urinary urge incontinence, urinary frequency syndrome, and incomplete and complete non-obstructive retention. Additionally, Terzoni et al. (2015) stated that when UI was present after radical prostatectomy, FES could be used to reduce urine leakage. When some patients had difficulty in performing PFE, and did not obtain clinically significant results, FES was helpful. There is a need to verify if FES can reduce urine leakage in patients who do not benefit from PFE as obtained mid-term data regarding the persistence of the results through was mixed (Terzoni et al., 2015).

Combined Therapies

Stoother (2010) suggested that using combinations of strategies in men following prostatectomy has yielded inconsistent results. In some cases, where researchers studied PFE alone and in combination with electrical stimulation versus no treatment following prostatectomy they found no difference in UI among groups. In a randomized controlled trial of electrical stimulation followed by biofeedback and PFM exercises versus no treatment in 30 men with detrusor hyperreflexia associated with multiple sclerosis, there was a significant improvement in subjective symptoms in the male group only, providing another option in specialized circumstances (Stoother, 2010).

Evidence-Based UI Recommendations

This project provides an overview of male UI treatment strategies and their effectiveness: To treat a male with UI in the outpatient setting, a comprehensive history and physical exam is the first step. The exam should include a 72-hour bladder diary, completion of the International Prostate Symptom Score (I-PSS), and a Post Void Residual (PVR) test. This information will provide the basis for recommendations for future treatment options. Diagnostic work up includes a comprehensive urinalysis and basic metabolic panel (BMP), and a prostate specific antigen (PSA) test will be added if the patient is over 50 or demonstrates overflow incontinence or has an abnormal prostate exam. The results of these tests will determine the UI type and the treatment options.

If the patient has a PVR over 200 mL, overflow incontinence is diagnosed. However, a PVR greater than 200 to 300 mL does not in itself require treatment in the absence of symptoms or recurrent infection. Management typically involves an indwelling urinary catheter or clean

intermittent catheterization in addition to medication management. A referral to urology is the best course of action for overflow incontinence.

A patient may also present with complications such as recurrent or total incontinence or they admit to UI mixed with pain, hematuria, recurrent infection, prostate irradiation or radical pelvic surgery. In this situation, they must be referred to a Urologist. Any other abnormality should also be referred.

The results of the patient history will determine if the UI is stress, urge, or mixed. A diagnosis of stress, urge or mixed incontinence will lead to a discussion of treatment options with the patient specific to the etiology. Urological experts suggest lifestyle changes as the first option as they have shown great promise in male UI treatment. These changes include weight loss, dietary changes, biofeedback, bladder training and PFE. Other options may be considered, but less desirable are containment products or medications such as antimuscarinics, or α -adrenergic antagonists.

Failure of any of these treatment options requires a more specialized treatment approach. Once again, referring to the patient's history, if patients present with post-prostatectomy incontinence or with urgency/frequency, then the NP may consider referral to a Urologist for urodynamics and imaging of the urinary tract to further refine the source of the issue. urethrocytoscopy is an option if indicated.

If the results of these tests show stress incontinence due to sphincteric incompetence, then an appliance such as an artificial urinary sphincter or male sling is indicated. If urgency incontinence is diagnosed due to detrusor over-activity, then there are several options. First, with no other reported symptoms, electrical stimulation is first line. Secondly, if the detrusor over-activity coexists with bladder outlet obstruction, then α -blockers, antimuscarinics, or

referral to a urologist for surgery correction of the bladder outlet obstruction is indicated. And finally, if the detrusor over-activity coexists with underactive detrusor during voiding, then intermittent catheterization or antimuscarinics are called for. Signs of mixed incontinence should lead to treating the major component first.

These treatment options are within the scope of practice for the nurse practitioner in primary care. Trying first line options allows the patients to consider or implement treatment options before seeing a specialist. Often family practitioners are asked for low-cost options during the patient discussion; the nurse practitioner can provide viable options.

This research, as demonstrated in Appendix A, shows only six sources with data coming from experimental studies. The remaining 35 sources contained either summaries of other bodies of work or expert opinion. The recommendations in this section were developed mainly from those non-experimental sources. While the evidence-based recommendations were from high-quality sources and resulted in accurate, useful information for Nurse Practitioners, it was not based on experimental data.

The recommendations, based on the strength of evidence, showed behavioral modification as the most widely used and most successful therapy. Prescribing medication was shown to be a viable (although less common) alternative treatment option. Containment devices, internal and external appliances were recommended at a similar rate, but were shown to be used even less often. Finally, the use of electrical stimulation and combined therapies were shown to be the least proven.

Dissemination of Information

The evidence found as a result of the critical appraisal of the literature will be submitted as a manuscript to the Journal of the American Association of Nurse Practitioners (JAANP).

JAANP is a scholarly journal that provides; original peer-reviewed clinical articles containing medical insights, and professional news on the latest developments regarding care of patients in the primary, acute and long-term care settings. The manuscript will serve to increase awareness and nurse practitioner understanding of the best practices for male UI treatment. The information will also be distributed as a poster presentation at the local Alaska Association of Nurse Practitioners Conference (AANP). The AANP Conference is held each year and disperses up to date information for Nurse Practitioners from around the state. The poster presentation will bring the issue of male incontinence to the forefront, provide current evidence-based care recommendations and community health care education for a topic that has been overlooked for too long.

Conclusion

UI is a socially, medically, psychologically and financially costly health condition. A variety of conditions may lead to male UI such as prostate and cardiac disease, neurological issues, diabetes, medications, and depression. Many men do not report UI as a problem as they feel embarrassment, or there is a stigma attached with being unable to control bladder functions. Incontinence may have a major effect of physical, social, sexual, psychological and domestic well-being as it can cause discomfort, shame, and isolation. Treatment of UI may be reversible or improved with medical intervention. The effectiveness of therapy may rely on support from others such as spouses or family members. The treatment effectiveness becomes very important in Alaska as most of the population reside in rural areas and have limited professional medical support.

Research shows that with proper diagnosis and an in-depth discussion between provider and patient about UI treatment options, most of the patient needs can be met by the nurse

practitioner. Furthermore, in most cases, patient needs can be satisfied with simple lifestyle changes. Medications also show promise in most cases, but require a more concerted effort on the patient's part to keep current. Other, more specialized UI types may require containment or appliances. While surgical interventions may show great promise for combating UI, they strictly reside in the realm of specialized providers, not Family Practice.

Evidence-based recommendations provided a practical outline to guide Alaskan family practitioners in the treatment of male UI. Furthermore, men in Alaska are at a disadvantage due to the remoteness and limited health care resources. Much research has gone into advancing the body of knowledge for women with this complaint, but is limited as it pertains to men. This project highlights the need for additional research to address new treatment options and the effectiveness of current options for men with UI. The project results show a surprisingly lack of Levels I and II evidence for practice recommendations. Providing the available evidence-based information to Family Practitioners in Alaska could potentially provide substantial benefits to men with UI improving both provider and patient outcomes of care.

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Appendix A

Synthesis Matrix for Male Urinary Incontinence

Article #	Author & Date	Evidence Type	Level of Evidence /Quality	Sample Size	Study Findings that Answer the Question	Main Idea
1	Hollander & Gonzalez, 2012	Literature Review	V/A	N/A	Electrical stimulation of the sacral nerve root treatment affective in increasing detrusor pressure and function. PTNS is also an option to stimulate sacral nerves thereby decreasing UI	Electrical Stimulation
2	Hollander & Gonzalez, 2012	Literature Review	V/A	N/A	Last resort for retention UI and decreased detrusor activity.	Internal Appliances
3	Moore & Lucas, 2010	Meta-Synthesis	IV/A	4979	Non-Invasive therapy should be the 1 st line of mgt; Pelvic Floor Exercises, Pharmacological Therapy, Electrical Stimulation, and External Appliances	Behavioral Therapies
4	Fawcett, 2014	Expert Opinion	IV/B	N/A	If management methods do not help to resolve incontinence, there are a variety of containment methods available, and these can be very useful where skin integrity is at risk	Containment Devices
5	Fawcett, 2014	Expert Opinion	IV/B	N/A	If management methods do not help to resolve incontinence, there are a variety of containment methods available, and these can be very useful where skin integrity is at risk	Behavioral Therapies
6	Lee, Fumi, & Hoe, 2013	Retro cross-sectional study	II/A	725	Reducing coffee consumption can decrease UI	Behavioral Therapies
7	Markland et al., 2010	Systematic Review-Non-Exper	III/A	5297	Continence rates increased 62% with behavioral modifications	Behavioral Therapies
8	Hollander & Gonzalez, 2012	Literature Review	V/A	N/A	The evaluation of and most current treatment regimens for incontinence in men, w/ attention being paid to newer therapies such as phosphodiesterase-5 inhibitors (PDE5i), β -3 agonists, botulinum toxin injection, and peripheral and sacral nerve stimulation.	Pharmacological Therapies

Article #	Author & Date	Evidence Type	Level of Evidence /Quality	Sample Size	Study Findings that Answer the Question	Main Idea
9	Nazarko, 2015	Expert Opinion	IV/A	N/A	Correctly assessing a patient’s type of continence and selecting the appropriate type of continence pad is necessary when treating patients living with urinary incontinence.	Limited scope
10	Wilson, 2016	Expert Opinion	V/B	N/A	Containment devices allow patient to keep their symptoms private. Use of the least expensive and obvious one preferred	Containment devices
11	Miller & Miller, 2011	Literature Review	V/A	N/A	Pharmacotherapy is associated with moderate improvements in symptoms and quality of life, whereas surgery can provide total symptom relief; however, some patients are not willing to risk surgical complications.	Pharmacological Therapy
12	Appleyard & Bastone, 2015	Expert Opinion	IV/A	N/A	Changes in population demographics — in particular, a rise in older people — mean that the demand for containment products such as pads from patients with continence problems in the community will only increase.	Containment Devices
13	Resel-Folkersma, et al.,2014	Literature Review	V/A	N/A	Initial results with peri-urethral injection of autologous myoblast/fibroblast at the striated sphincter in 63 patients with PPUI were very promising	Pharmacological Therapy
14	Moore & Lucas, 2010	Meta-Synthesis	IV/A	4979	Antidepressant Duloxetine may also be used to decrease UI symptoms	Pharmacological Therapy
15	Smart, 2014	Systematic Review	V/B	58	A thoughtful approach to UI can lead to an appropriate assessment of the problem which in many cases can be improved or resolved without the need for containment products. Many lives can be considerably enhanced using a urinary sheath.	External Appliances

Article #	Author & Date	Evidence Type	Level of Evidence /Quality	Sample Size	Study Findings that Answer the Question	Main Idea
16	Smart, 2014	Expert Opinion	IV/B	N/A	The urinary sheath has the potential to be used in a residential home setting for the benefit of carefully selected men.	External Appliances
17	Wilson, 2016	Expert Opinion	V/B	N/A	Internal appliances are necessary in patients who have retention, overflow UI and are unable to perform intermittent catheterization	Internal Appliances
18	Wilson, 2015	Expert Opinion	IV/B	N/A	Urinary sheaths are a viable option to treat male UI, these are soft & flexible. These are also cost effective, hygienic & environmentally friendly. Less skin excoriation	External Appliances
19	Shelly, 2016	Expert Opinion	IV/B	N/A	Home trainers can be helpful in treating pelvic floor dysfunction	Behavioral Therapies
20	Testa, 2015	Expert Opinion	V/A	N/A	Anticholinergics decrease urgency, but have many side effects	Pharmacological Therapy
21	Barrie, 2015	Literature Review	V/B	N/A	The choice of continence-related treatments, products and medicines have never been greater, and there is plenty of advice and support available such as continence advisory services	Internal Appliances
22	Moore & Lucas, 2010	Meta-Synthesis	IV/A	4979	Mesh pants, dribble pouches & conductions aids are available containment devices	Containment Devices
23	Fawcett, 2014	Expert Opinion	IV/B	N/A	Strict pelvic floor exercises decrease UI	Behavioral Therapies
24	Neumann, Fuller & Sutherland, 2015	Randomized control study	I/A	31	The TPUS assessment found that all the men in this group could elevate the bladder neck in a cranial direction after verbal instruction, which suggests the correct action of their PFMs.	Behavioral Therapies

Article #	Author & Date	Evidence Type	Level of Evidence /Quality	Sample Size	Study Findings that Answer the Question	Main Idea
25	Roe, Flanagan, & Maden, 2015	Expert Opinion	IV/A	N/A	Toileting programs, PV with or without exercise and use of incontinence pads, for managing UI in older people in care homes is effective in the short term	Behavioral Therapies
26	Terzoni, et al., 2015	Expert Opinion	IV/A	N/A	Use of surface electrodes on the perineal area or anal probes that use electrical impulse to stimulate muscle action	Electrical Stimulation
27	Schardt, 2015	Expert Opinion	V/B	N/A	Men who did regular moderate or heavy exercise were 26 percent less likely to develop lower urinary tract symptoms than sedentary men	Behavioral Therapies
28	Terzoni, et al., 2015	Expert Opinion	IV/A	N/A	Pelvic floor muscle training (PFMT) and functional electrical stimulation (FES) can be used to reduce urine leakage.	Behavioral Therapies
29	Barrie, 2016	Case Study	V/B	N/A	Internal appliances should be used as a last option, not optimal in patients who have cognitive impairment. Suprapubic and indwelling catheters can cause infection, and trauma. Indwelling catheters hinder sexual functioning	Internal Appliances
30	Testa, 2015	Expert Opinion	V/A	N/A	A stepwise treatment approach should be utilized, beginning with behavioral therapies, lifestyle modifications, pharmacologic interventions, and lastly, a consultation for surgical options	Behavioral Therapies
31	Stothers, Thom & Calhoun, 2010	Literature Review	V/A	N/A	Pelvic floor exercises, biofeedback & bladder training are less invasive & lower rate of side effects. Timed voiding decreases incontinence symptoms	Behavioral Therapies
32	Stothers, Thom & Calhoun, 2010	Literature Review	V/A	N/A	Anticholinergic meds more effective than placebos	Pharmacological Therapy

Article #	Author & Date	Evidence Type	Level of Evidence /Quality	Sample Size	Study Findings that Answer the Question	Main Idea
33	Weber & Roberts, 2015	Records Review	III./A	22	For men, a standard of care needs to be established that includes the provision of information relevant to non-invasive ways of dealing with urinary and erectile symptoms after radical prostatectomy.	Behavioral Therapies
34	Stothers, Thom & Calhoun, 2010	Literature Review	V/A	N/A	PFM with electrical stimulation offer effective results in males following prostatectomy& decreases detrusor hyper-reflexia	Combined Therapies
35	Stothers, Thom & Calhoun, 2010	Literature Review	V/A	N/A	In general, treatment options for incontinence are based on the type of incontinence rather than the gender of the patient.	Behavioral Therapies
36	Glazener, et al., 2011	Quasi - Experimental	II/A	472	There was no corresponding difference in rates of UI between groups with training and without.	Behavioral Therapies
37	Moore & Lucas, 2010	Meta-Synthesis	IV/A	N/A	Penile clamps, indwelling caths, condom caths & pads not considered socially acceptable and can increase pt's anxiety & discomfort	External Appliances
38	Smart, 2014	Expert Opinion	IV/B	N/A	Indwelling catheters increase risk of urosepsis & symptomatic UTI's	Internal Appliances
39	Markland et al., 2010	Systematic Review- Non- Exper	III/A	5297	Antidepressants, muscarinic antagonists & adrenergic antagonists are effective in decreasing UI symptoms	Pharmacological Therapy
40	Moore & Lucas, 2010	Meta-Synthesis	IV/A	N/A	PFE reduces frequency and UI. Also, decreases amount of time needed for pt to regain continence status	Behavioral Therapies
41	Hanzaree & Steggall, 2010	Expert Opinion	IV/B	N/A	Nurses can encourage discussions designed to identify when continence problems occur and act as a resource both for intervention and for signposting for referral of individuals with severe problems.	Behavioral Therapies

Appendix B

Nurse Practitioner Questions Developed from Literature Search

Nurse Practitioners questions to determine if a male has urinary incontinence:

1. Do you notice wetness in your pants when you laugh, cough, bear down, lift something heavy, or sneeze?
2. How often do you leak urine?
3. Do you have to wear depends or use a pad in your underwear?
4. Do you ever wake up with a wet bed?
5. Does the urge to void influence your daily routine?
6. Has a fear of leaking urine caused a decrease in your sexual function?
7. Do you miss out on social engagements because you need to be near a bathroom?
8. Have you been prescribed medications for over active bladder?
9. Have you had any prostate surgeries or injury/trauma to your renal system
10. Are you diabetic? If so when what year were you diagnosed with DM?
11. Have you had any spinal cord birth defects/injuries or surgeries on your spinal cord?

Appendix C

Male Urinary Incontinence Nurse Practitioner Reference

**Male Urinary Incontinence Treatment
Options in the Primary Care Setting**





Male Urinary Incontinence Treatment Options in the Primary Care Setting:

- Full History & Physical
- Labs-UA C&S, BMP, PSA Level
- Post Void Residual
- 72-hour voiding diary

Determine the type of UI your patient has:

- Stress
- Urge
- Overflow

Patients with overflow incontinence or a history of recurrent urinary tract infections will require some kind of containment product, catheterization and referral to a Urologist

Patients with Stress or Urge incontinence may benefit from:

- Lifestyle changes
- Weight loss
- Decrease or abstain from caffeine products & alcohol
- Treatment of constipation
- Kegel Exercises
- Biofeedback therapy & pelvic floor exercises - refer to Physical Therapist
- Bladder Training - timed voiding q 2 hours even when there is no urge to void

Recommended Medications:

- Antispasmodics
 - Oxybutynin-initial 5mg 2-3 X day, Max 5mg Q day
 - Solifenacin-5mg day max 10mg q day, renal impairment 10mg q day
 - Tolterodine-2mg BID, Renal pt's 2mg q day
 - Tolterodine XL- 5-10mg q day, Max 30mg q day
 - Trospium-20mg BID >75 years or renal, hepatic disease 20 mg q HS
- Alpha Adrenergic Antagonists
 - Doxazosin 1mg q day, max 8mg day,
 - Tamsulosin 0.4mg q day, max 0.8mg q day,
 - Terazosin 1mg/d HS, titrate for desired effect-max 20mg q day
- Antiandrogenic agents
 - Dutasteride 0.5mg/day, max 0.5 mg/day
 - Finasteride 5mg/day, max 5mg/day

Refer patient to a Urologist who can address:

- Fail treatment
- Pelvic pain
- Severe LUTS
- Neurological Disease
- Abnormal Prostate Exam
- Elevated PSA Level
- Severe Incontinence
- Hematuria
- Prior Pelvic Surgery
- HX: Pelvic Radiation Therapy

Reference:

Clemens, J. Q., (2016). Urinary Incontinence in men. In: UpToDate, O'Leary, M. P., (Ed), UpToDate, Walham, MA. Retrieved from: http://www.uptodate.com/contents/urinary-incontinence-in-men?source=search_result&search=male%20urinary%20incontinence&selectedTitle=1~150

Hollier, A., (2016). Clinical guidelines in primary care (2nd ed). Lafayette, LA. Advanced Practice Education Associates Inc

Appendix D

Male Urinary Incontinence Patient Reference

Male Urinary Incontinence Patient Reference





Male Urinary Incontinence Patient Reference:

Many men suffer from urinary incontinence; it can be caused by: The aging process, injury or disease of the spinal column, traumatic brain injuries, prostate surgery or radiation therapy in the pelvic area and medical conditions like diabetes, Parkinson, MS or a stroke. You will need to work together with your health care team to manage your symptoms

There are different types of Urinary Incontinence talking with your health care provider can help you determine the type of incontinence you have urge, stress, overflow or a mixed of urge & stress.

To determine the type of UI that you have; your health care provider may need to:

- Ask you several questions
- Perform lab work
- Accomplish tests
- Ask you to monitor the amounts & types of beverages you drink
- Ask you the amount and times that you urinate during the day & keep a journal of this.

Some of the ways you may be able to decrease your Urinary Incontinence

- Lifestyle changes
 - Weight loss
 - Abstain from caffeine and alcohol
 - Treat Constipation
- Biofeedback
 - Pelvic floor Exercises
 - Kegel Exercises
- Bladder Training
 - Void on a scheduled pattern if you have no urge to go
 - Double Voiding-void once wait a moment & empty your bladder again
- Containment devices
 - Penile Clamp
 - Absorbent briefs & pads
 - Indwelling bladder catheter
 - Catheterize 4-6 times a day

Medications: You will need to talk with your provider to determine which one is right for you.

- Medications that work quickly:
 - Cardura
 - Ditropan
 - Detrol
 - Enablex
 - Flomax
 - Hytrin
 - Rapaflo
 - Toviaz
 - Vesicare
- Medications that take several months to achieve benefits:
 - Avodart
 - Proscar

You will need to see a Urologist for evaluation if you have any of the following:

- Overflow incontinence
- Fail treatments listed above
- Pelvic Pain
- Severe Lower Urinary Tract Symptoms
- Blood in your urine
- Elevated PSA
- Abnormal Prostate Exam
- Recurrent Urinary Tract Infections
- Prior Pelvic Surgery
- Prior Pelvic Radiation Therapy

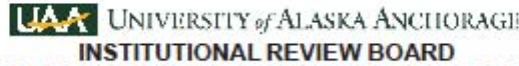
Reference:

Clemens, J. Q., (2016). Urinary Incontinence in men. In: UpToDate, O'Leary, M. P., (Ed), UpToDate, Walham, MA. Retrieved from: http://www.uptodate.com/contents/urinary-incontinence-in-men?source=search_result&search=male%20urinary%20incontinence&selectedTitle=1~150

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Appendix E

UAA Institution Review Board Human Subjects Research Determination & Research Project Approval Form



REQUEST FOR DETERMINATION OF HUMAN SUBJECTS RESEARCH

All research conducted by University of Alaska Anchorage faculty, staff, or students, which involves human subjects must be reviewed by the Institutional Review Board (IRB). To determine if your project involves human subjects or is research under UAA IRB definitions, complete this form and send it to the UAA Research Compliance Officer, simumaw@uaa.alaska.edu.

For help, contact the Office of Research Integrity & Compliance (ORIC): (907) 786-1099.

<p>Consider your activity (research project, thesis, study, task, assignment) and the data (information) you, a member of your research team, or a collaborator, plan to collect, when responding to these questions. Activity Examples: surveys, questionnaires, focus groups, interviews <input type="checkbox"/> passive observation of public behavior (in physical or online environments, including social media) <input type="checkbox"/> experiments using electronic equipment or gaming techniques <input type="checkbox"/> the use of instruments or devices, including phones, to collect or monitor or influence behavior <input type="checkbox"/> diet, nutrition studies, or taste tests <input type="checkbox"/> physical or biomedical procedures, such as imaging, scanning, blood collection, anthropomorphic procedures <input type="checkbox"/> studies examining individuals' responses to manipulation of their physical or online environment <input type="checkbox"/> studies examining effectiveness of educational tools or curricula <input type="checkbox"/> pilot studies and other preliminary studies <input type="checkbox"/> any other activity that involves observation of, or interaction with, individuals to gather information for research.</p>	
Enter a response for each question, complete Section B on Page 2 and send to simumaw@uaa.alaska.edu	Yes/No Not sure
Is <u>all</u> of the data (information) being obtained <u>about</u> deceased people? (If No, skip the next question and go to RD1)	No
In addition to information about the deceased people, are you also collecting information from living persons about their recollections of the deceased people? (If No, stop here and go to RD 2)	
RD1) Does your project <u>only</u> involve <u>existing</u> data, information, documents, or samples that you will obtain from a publicly available source that does <u>not</u> require permission to access the data? (If Yes, stop here and go to RD2.)	Yes
Does a funding source (federal, state, or local), either directly (direct funder) or indirectly (secondary, or pass-through funder) require IRB review? (If Yes, stop here and go to RD3)	
Is <u>any</u> of the data (information) being obtained <u>about</u> individuals who are, or could be, living now?	
Is any of the data (information) being obtained, directly or indirectly, <u>from</u> living individuals?	
Are you <u>observing</u> people, directly or indirectly, to collect your information?	
Are you <u>interacting</u> (face-to-face, through telephone, electronic media or documents) with people?	
Is the data collected by <u>intervening</u> (taking measurements, samples, images) with people, or <u>observing an intervention</u> carried out by another person?	
Does the data/information you are collecting <u>only</u> center on things, quantities, or other questions about what item, process, or procedure is used? (If Yes, stop here and go to RD2)	
Does the data/information you are collecting include the opinions, characteristics, or behavior of individuals?	
Does the data/information you are collecting include any information that could identify the individuals?	
Does the data/information you are using to <u>recruit</u> people for your project include any information that could identify the individual?	
During the <u>process</u> of collecting data, will you or any research team member, be able to identify the individuals?	
Will the data or information you are collecting examine, for example, the function of culture, expression of gender, or political views of members of the population in the study?	
Could the results of this evaluation be used to make a general conclusion about the data/information you will collect?	
Is this evaluation connected to individual or group outcomes?	
Could the results of this evaluation impact the future use of similar programs, services, or public policy?	
Can this evaluation affect the development or implementation of other programs of a similar nature?	



UNIVERSITY of ALASKA ANCHORAGE

INSTITUTIONAL REVIEW BOARD

REQUEST FOR DETERMINATION OF HUMAN SUBJECTS RESEARCH

<p>If you answered Not Sure for any question, briefly explain why you are uncertain.</p>
<p>RD2 – Your work is most likely not human subject research and you do not need to complete the rest of the first section. Complete Section B and return the Request for IRB Determination form for a final confirmation.</p>
<p>RD3 – Your work must be reviewed by the IRB. Go to IRBNet and complete a UAA IRB Proposal and all additional documents for IRB review.</p>

Section B – Instructions, tab to each box and complete the information.

Name: Deborah Forcht

Today's Date: July 6, 2016

Affiliation with UAA (If this project will be used for class credit, complete the next two lines. If not, skip to Faculty/Staff):

Student Level: **MSN-FNP** Course Number: **NS 696-301-50720**

Faculty Advisor: **Lisa Jackson** Department: **School of Nursing**

Faculty or Staff College or School: **School of Nursing** Department: **FNP**

Project Title: **Male Urinary Incontinence: A Critical Appraisal of the Evidence with Practice Recommendations.**

<p>Project Description: A critical appraisal of the literature will be conducted to provide best practices in treatment of urinary incontinence. This project critical appraisal will use Dearholt & Dang's (2012) Quality Guide to evaluate the evidence. Only evidence levels I through V and "good" or "high" quality will be included. There are no human subjects involved in a Critical Appraisal of the Literature</p>
<p>Population: Males with Urinary Incontinence</p>
<p>Plan: An evidence table will be utilized as a guideline to answer the study question "What are the best evidence based practice treatments for males with urinary incontinence? The table will evaluate the evidence type, sample size, study findings that help answer the research question, limitations and evidence rating. The evidence will be synthesized for dissemination to Family Nurse Practitioners (FNP) as a journal article.</p>

For Office of Research Integrity & Compliance Use Only

Final Determination: HSR **Not HSR**

Statement of Findings: A best practices summary of published results, literature search.