

Interventions for Overactive Bladder: Review of Pelvic Floor Muscle Training and Urgency Control Strategies

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ABSTRACT

Background: Overactive bladder (OAB) is a common condition with a negative impact on quality of life. Physical therapists utilize multiple treatments for OAB, including behavioral training such as pelvic floor muscle training and urgency control strategies.

Objectives: The purposes of this narrative literature review were to describe the rationale and theory for behavioral training techniques for OAB, review published evidence for these techniques, and discuss additional questions provoked by the review as well as future research directions.

Study Design: Narrative literature review.

Methods: A 2018 review of PubMed, CINAHL, the Cochrane database, and the Trip database yielded 12 articles appropriate for evidence analysis.

Review of Literature: Pelvic floor muscle training for OAB has been studied by multiple authors. Most outcomes are favorable, but there is inadequate evidence to support any specific training protocol. Similarly, modalities to aid pelvic floor muscle training and/or reduce urinary urgency generally have positive results but published studies are difficult to compare and ideal treatment parameters are unclear. Cognitive strategies as a component of treatment for OAB, while commonly used clinically, are understudied at this time. Overall, while there is evidence to support behavioral training, the currently available literature on this subject leaves many unanswered questions.

Conclusion: Behavioral treatment for OAB is well supported by solid theoretical rationales, but evidence for the treatment is equivocal and leaves practitioners with many unanswered questions. Studies on the details of behavioral therapy for OAB are strongly needed.

Key Words: overactive bladder, pelvic floor muscle training, physical therapy

INTRODUCTION

Overactive bladder (OAB) is a common condition that negatively impacts health-related quality of life

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(HRQoL). It is a clinical diagnosis of exclusion, defined as urinary urgency, usually accompanied by frequency and nocturia with or without urgency urinary incontinence (UUI), in the absence of urinary tract infection or other obvious pathology.¹ The prevalence of OAB varies widely depending on the sample studied and how a diagnosis is made but has been reported between 20% and 40% in young women (younger than 40 years)^{2,3} and increases with age.^{4,5} Overactive bladder has a substantial impact on HRQoL, with social, professional, recreational, health (eg, sleeping, exercising), and sexual activities all negatively impacted.^{2,3,6,7} In addition, OAB, especially OAB with UUI, presents a significant economic burden, with direct costs for OAB with UUI in the United States estimated to reach \$82.6 billion in 2020,⁵ and is associated with increased risk of urinary tract infection, falls, and fractures.⁸ Approximately one-third of patients with OAB have UUI.⁹ Urgency urinary incontinence is also termed OAB-wet, while OAB without UUI is called OAB-dry.¹

While the mechanisms underlying OAB remain unclear,¹⁰ several interventions for OAB have been explored. Pharmacologic treatments such as anticholinergic therapy (eg, Detrol, Ditropan), botulinum toxin (Botox), and mirabegron (Myrbetric) are successful for treating OAB symptoms in many patients but have a high rate of negative side effects.¹¹⁻¹³ For example, anticholinergic medications reduce urgency but also cause dry mouth, constipation, and nausea.¹⁰ Behavioral interventions are the first-line nonpharmacologic approach for treating OAB.¹⁴⁻¹⁶ These interventions can be divided into 2 general categories: (a) behavioral training, which emphasizes pelvic floor muscle training (PFMT) to improve bladder control, as well as techniques to suppress urgency, and (b) bladder training (BT) and lifestyle modifications, such as following a voiding schedule, modifying fluid intake, and weight loss.¹⁷ These approaches require a high level of patient motivation and encouragement, but the clear advantages are the absence of adverse drug reactions and the potential for long-term benefit.^{10,15,18}

Physical therapists specialized in women's health or pelvic floor physical therapy regularly treat patients with OAB using behavioral training strategies. Anecdotally, success rates with PT are high, and the medical literature indicates that regular treatment supervised by a health care professional produces better outcomes for urinary issues than unsupervised techniques.¹⁹ Given that the most effective interventions are those tailored to the unique needs of individual patients,¹⁵ physical therapists are ideally positioned within the health care system for delivering interventions for OAB. The purposes of this narrative literature review were to (a) describe the rationale and theory for behavioral training techniques utilized by physical therapists for treating OAB, (b) review published evidence for these techniques, and (c) discuss additional questions provoked by the review as well as future research directions. The focus of the review is on PFMT, modalities to assist with PFMT, and cognitive techniques to address urgency; details of BT and lifestyle modifications such as diet and fluid intake are extensively described elsewhere.^{13,16,17,20}

METHODS

A review of PubMed, CINAHL, the Cochrane database, and the Trip database was completed in August and September, 2018, using the following search terms alone and in various combinations to identify articles on PFMT, modalities to assist with PFMT, and cognitive techniques to address urgency: OAB, physical therapy, physiotherapy, behavioral therapy, behavioral interventions, pelvic floor muscle exercise, PFMT, vaginal cones, vaginal weights, surface electromyography, and electrical stimulation. Studies were chosen for inclusion in the evidence components of this article if they were randomized controlled trials (RCTs) or systematic reviews (SRs) published in English since 2002; 1 description of a protocol for a future RCT and 1 long-term follow-up of a previously published RCT were also deemed appropriate for evidence analysis based on their relevance to the topics. Studies performed on women with neurological disorders such as multiple sclerosis were excluded. The search produced 3 SRs and 7 RCTs deemed appropriate for analysis as well as the long-term follow-up study and protocol of a previously published RCT mentioned earlier. All article reviews were performed by the author.

REVIEW OF LITERATURE

Pelvic Floor Muscle Training

Urinary urgency, a sudden, compelling desire to void that is difficult to defer,¹ is the dominant

feature of OAB and is what produces the other OAB symptoms of urinary frequency, nocturia, and UUI.²¹ Urgency is a multidimensional sensation that is different than the normal desire to void, as people with OAB perceive the sensation of desire to void as more sudden, intense, and unpleasant than people without OAB.²² Given that urgency is the key feature of OAB, training the pelvic floor muscles to (1) contract and strongly hold in order to occlude or compress the urethra, thereby preventing urgency UI, and (2) contract quickly and in a coordinated fashion to help inhibit urgency-producing bladder (detrusor) contractions can be considered the cornerstone of physical therapy for OAB. Strong sustained urethral compression works to prevent urine loss via physical block, while quick contractions work to reflexively inhibit detrusor contraction and prevent internal sphincter relaxation.^{23,24} Quick contractions for controlling urinary urgency, clinically referred to as "quick flicks," first appeared in the medical literature as a treatment strategy in the 1980s.²⁵

Pelvic floor muscle training as a treatment for OAB or its components has been explored both in RCTs and SRs, which are summarized here and in the Table. Kaya et al²⁶ compared 6 weeks of high-intensity PFMT (initially 100 contractions per day, increasing to 600 contractions per day in final week) plus BT, with BT alone for women with UUI. Their results indicated that PFMT + BT was superior to BT alone for improved quality of life but did not result in a statistically significant improvement in incontinence severity, HRQoL, or bladder diary parameters compared with BT alone. However, the authors noted that their analysis may have been underpowered due to small sample size. Kafri et al²⁷ compared drug therapy, BT, PFMT, and a combination treatment consisting of BT, PFMT, and behavioral advice in 165 women with UUI. The PFMT intervention consisted of 3 sets of 8 to 12 slow maximum contractions of 6 to 8 seconds of duration, performed in a variety of positions over 3 months. Results showed all 4 groups showing statistically significant improvements in voids per 24 hours, UUI episodes per week, dry rates, and HRQoL over the 3-month treatment and maintained at 1 year, but there was no difference between groups. However, the combination treatment group that received the intervention most like what patients with OAB would often receive in physical therapy was the only one to show a clinically important reduction in number of voids per 24 hours.²⁸ The same research group performed a 4-year follow-up (n = 120) and found that all groups still were statistically significantly improved compared with baseline for all outcome measures and that there were no statistically significant differences between groups;

Table. Summary of Studies

Authors	Program Details	Results and Comments
<i>Pelvic floor muscle training</i>		
Kaya et al ²⁶	P: 16 women with UUI I: 6-wk program of high-intensity (up to 600 reps/day) PFMT + BT C: BT without PFMT O: Self-reported improvement, UI severity, bladder diary measures (voids/d, episodes of UI, etc), UDI-6, IIQ-7, pelvic floor strength and endurance	Improved IIQ scores in PFMT + BT group compared with BT ($P = .045$); no statistically significant between-group differences in other parameters No long-term follow-up Did not include participants with OAB-dry Possibly statistically underpowered to show differences in other parameters
Kafri et al ²⁷	P: 165 women with UUI I: 3-mo daily PFMT program, 3 sets of eight to twelve 6- to 8-s contractions C: Drug therapy, bladder training, or combination O: Bladder diary measures, I-QOL, several other QOL measures	No statistically significant difference between groups on any parameters Combination group had clinically important reduction in frequency Did not include participants with OAB-dry
Azuri et al ⁹	4-y follow-up of 120 women from the study by Kafri et al ²⁷	Groups that included PFMT had higher but nonsignificant self-reported "dry" rates than non-PFMT groups (40.67% vs 28.8%, $P = .616$)
Bo et al ²⁹	8-study systematic review on PFMT vs controls for OAB symptoms in women; addressed all components of OAB (frequency, urgency, nocturia, UUI), PFMT duration and intensity varied among studies	Some evidence that PFMT reduces OAB symptoms, but authors noted high variability among interventions, conflicting results, and a need for high-quality RCTs on the topic
Olivera et al ¹³	Large systematic review on all nonmuscarinic treatments for OAB; included 4 studies on PFMT for OAB symptoms, PFMT duration and intensity varied among studies	PFMT recommended for subjective improvement of OAB symptoms Authors noted low methodological quality of some studies
Greer et al ³⁰	Systematic review on multiple physical therapy interventions for UUI; included 4 studies on PFMT, PFMT duration and intensity varied among studies	PFMT improved UUI symptoms but was not superior to inactive control or other physical therapy techniques Overall quality of studies deemed moderate (PEDro scores: 4-7/10) Did not include studies on OAB-dry
<i>Modalities</i>		
Yüce et al ³³	P: 39 women with OAB I: 8-wk program of twice-daily 10-min sessions of ADLs with weighted vaginal cone; weight progressed when able to retain for >10 min C: tolterodine, 4 mg daily O: bladder diary measures, 24-h pad test, UDI-6, IIQ-7	Frequency, nocturia, UUI, and QoL improved in both groups, with no statistically significant difference between groups Data on adverse events not reported
Voorham et al ³⁴	P: 58 women with OAB I: 9-wk program of EMG biofeedback-assisted PFMT + toilet behavior, urgency suppression strategies, and lifestyle instruction C: Toilet behavior and lifestyle instruction O: Bladder diary, PeLFIs, KHQ, 24-h pad test, EMG measurements	11 participants initially could not perform correct contraction and so were given 1 session of electrical stimulation EMG biofeedback group had statistically significant improvement in QOL, number of participants completely dry, and pad test results compared with lifestyle group Urinary frequency, urgency, and nocturia not specifically assessed
Wang et al ³⁵	P: 103 women with OAB I: 12-wk program; participants divided into 3 intervention groups—PFMT with EMG biofeedback, electrical stimulation, and PFMT with no modalities. Intensity of intervention based on participant's initial strength; home program also given O: KHQ, patient perception of improvement, bladder diary, 1-h pad test, PFM strength	No statistically significant differences among groups for urgency ($P = .172$), frequency ($P = .214$), or nocturia ($P = .056$), but all groups showed improvement Subjective rating of "cured" or "improved" equal among groups after treatment
Arruda et al ³⁶	P: 64 women with urodynamically diagnosed DO I: 12-wk program; participants divided into 3 intervention groups—electrical stimulation biweekly with a physical therapist, oxybutynin 5 mg twice/d, or PFMT biweekly with a physical therapist + home program O: urgency, UUI, urodynamic evaluation	All treatments reduced UUI and urgency, no statistically significant difference among groups 72% of participants in oxybutynin group reported at least 1 negative side effect; 0% in other groups had negative side effects Narrow participant pool (limited to women with DO) limits applicability of results

(continues)

Table. Summary of Studies (Continued)

Greer et al ³⁰	Systematic review on multiple physical therapy interventions for UUI; included 3 studies on EMG biofeedback and 5 studies on electrical stimulation (1 study on WVC was included but participants primarily had stress urinary incontinence)	EMG results: (1) No pooled analysis possible due to significant variability in outcome measures and follow-up time periods. (2) Reduction in UUI shown in all studies; not able to address frequency or nocturia. (3) PEDro scores: 5-6/10 Electrical stimulation results: (1) All studies reported reduction in UUI. (2) PEDro scores: 5-6/10 No inclusion of studies on participants with OAB-dry
Authors	Description of Cognitive Technique	Comments
<i>Cognitive techniques</i>		
Kaya et al ²⁶	Mental imagery and motivational statements such as "I can wait"; mental distractions such as performing mathematical calculations	Emphasis on distraction from bladder sensation, not mindfulness
Voorham et al ³⁴	As part of an urgency suppression strategy, participants were asked to relax at the onset of urgency	Unclear what was included in instructions to relax, as authors used the term "relax" in relation to decreasing activity in the pelvic floor muscles <i>and</i> as a cognitive technique for urgency suppression
Newman et al ³⁸	Participants instructed to distract themselves with a non-physical tasks such as playing a computer game, reciting a poem, or working on a puzzle, as well as to use self-affirming statements such as "I am in control" or "I can wait"	Emphasis on distraction from bladder sensation, not mindfulness Described as part of a protocol for an upcoming study (results not yet published)
Baker et al ⁴³	8-wk traditional protocol of MBSR, including meditation, nonjudgmental nonreactive awareness, mindful yoga, and education on the interrelatedness of stress and health	Small pilot study (n = 7) on women with UUI No specific education on urgency suppression techniques or any other aspect of bladder control
Baker et al ⁴⁴	8-wk traditional protocol of MBSR, including meditation, nonjudgmental nonreactive awareness, mindful yoga, and education on the interrelatedness of stress and health	n = 30 study comparing MBSR with yoga for UUI No specific education on urgency suppression techniques or any other aspect of bladder control
Abbreviations: ADLs, activities of daily living; BT, bladder training; C, comparison; DO, detrusor overactivity; EMG, electromyography; I, intervention; I-QOL: Incontinence Quality of Life; IIQ-7, Incontinence Impact Questionnaire; KHQ, King's Health Questionnaire; MBSR, mindfulness-based stress reduction; O, outcome; OAB, overactive bladder; P, population; PEDro, Physiotherapy Evidence Database; PeLFIs, Pelvic Floor Inventories; PFM, pelvic floor muscle; PFMT, pelvic floor muscle training; QOL, quality of life; RCTs, randomized controlled trials; reps/day, repetitions per day; UDI-6, Urogenital Distress Inventory; UI, urinary incontinence; UUI, urgency urinary incontinence; WVC, weighted vaginal cones.		

however, participants in the 2 groups that included PFMT had a higher dry rate than those in the groups that did not include PFMT.⁹

Several SRs have addressed PFMT for OAB. Bo et al²⁹ analyzed 8 RCTs and concluded that PFMT might reduce OAB symptoms compared with control interventions, but that the effect of PFMT on OAB symptoms could not clearly be determined. Four of the 8 studies showed a reduction in symptoms with PFMT, and the other 4 showed no effect. The duration of PFMT interventions and the number of contractions performed were highly variable among the studies. The authors did not report whether any of the study outcomes reached clinical importance. In addition, 5 of the 8 studies were on women with UUI; women with non-UUI OAB symptoms were not included. An SR by Olivera et al¹³ on nonpharmaceutical interventions for OAB included 4 studies on OAB and recommended pelvic floor exercise for patients with OAB but noted that most of the studies had significant methodological problems. Also, many of the participants in the studies reviewed had

urinary complaints other than OAB, making it difficult to clearly apply to conclusions of the review to women with OAB.¹³ Greer et al³⁰ reviewed PFMT for the treatment of UUI as part of a larger SR and concluded, based on 4 studies of moderate quality, that PFMT was not better than inactive controls for UUI reduction. The authors of the SR assessed episodes of UUI, urinary frequency, and nocturia; OAB-dry was absent from their analysis.

Regarding the specifics of what type of PFMT program is best for women with OAB, the variety of approaches described in the literature highlights that there is not adequate evidence to support any particular protocol. This is consistent with the ambiguity surrounding ideal PFMT programs for urinary complaints reported elsewhere.^{19,31} The literature supports supervised treatment, with at least 2 sessions per month recommended for urinary incontinence,¹⁹ and the treatment should be delivered in the most intensively clinician-supervised program possible, as this generates better outcomes than programs with less supervision.³² Therefore, while the theoretical

rationale for PFMT for OAB is strong and there is some evidence to support its use, clearly there is a need for studies examining the ideal PFMT program for women with OAB to help guide clinicians in treating this population.

Modalities to Assist PFMT and/or Control Urgency

There is some evidence for using physical therapy modalities, including weighted vaginal cones (WVC), electromyographic (EMG) biofeedback, and electrical stimulation for either aiding PFMT during treatment of OAB or helping to control urgency. Regarding WVC, Yüce et al³³ compared tolterodine with PFMT with WVC in 39 women. Women in the WVC group exercised with the cones daily for 8 weeks. Both groups had statistically significant improvements on all outcome measures, but there was no difference between the groups. Interestingly, all of the women in the WVC group were able to hold the cones without them falling out at the initial evaluation, and all progressed to the heaviest weight (68 g) by the end of the intervention, indicating that this sample may have had better pelvic floor muscle strength and coordination than many women seeking care for pelvic floor muscle dysfunction.

Voorham et al³⁴ compared EMG biofeedback-assisted PFMT with lifestyle instructions in women ($n = 58$) with OAB during a 9-week RCT. Women in the biofeedback group received physical therapist-supervised 30-minute sessions that included performance of 10 maximum contractions and 3 endurance contractions while receiving visual feedback of the EMG signal. Participants were taught urgency suppression strategies and performed a home exercise program, which was not described in detail. Correct performance of a pelvic floor muscle contraction was a prerequisite for treatment; women unable to initially perform a contraction were treated with electrical stimulation for 1 or 2 sessions. At the end of the intervention, the EMG biofeedback group had statistically significantly better outcomes for quality of life, urinary incontinence episodes, and EMG output than the lifestyle instructions group.

Wang et al³⁵ compared individualized PFMT, individualized PFMT with EMG biofeedback, and biphasic varying intensity electrical stimulation for women with OAB. While there were statistically significant benefits for QOL improvements for PFMT with biofeedback compared with individualized PFMT, as well as for electrical stimulation compared with individualized PFMT, the subjective improvement/cure rates were the same. In addition, information on participants' ability to correctly contract the pelvic floor musculature before initiating the interventions was not presented; therefore, it is possible that differences

in outcomes indicating a benefit from electrical stimulation may have been due to baseline differences between groups.

Arruda et al³⁶ compared oxybutynin, electrical stimulation, and stand-alone pelvic floor muscle exercise for women with urodynamically diagnosed detrusor overactivity. Participants' ability to perform a correct pelvic floor muscle contraction was assessed by digital examination before starting the interventions. They found that all 3 treatments reduced symptoms of urgency and UUI, with no statistically significant difference between groups.

Finally, the SR by Greer et al³⁰ described previously reported on several studies on the effects of electrical stimulation or surface EMG for women with UUI. Most of these studies reported a reduction in UUI following treatment with the modalities, but study heterogeneity prevented pooling of data or strong conclusions regarding the results. Study quality was moderate, and other components of OAB such as frequency and nocturia were not addressed.

Results from these studies, further detailed in the Table, indicate that treatment including modalities may be helpful, but they provide little insight into the specific treatment parameters best suited for women with OAB. The study participants and results are difficult to compare, given diverse baseline characteristics and outcome measures. In addition, the electrodes themselves present a variable for biofeedback and electrical stimulation. Conventional vaginal probes with large electrodes may contact multiple muscles at once, whereas newer probes may have the ability to both stimulate and register EMG activity from individual muscles.³⁴ Therefore, determining whether stimulating individual muscles is truly feasible or beneficial, as well as identifying ideal treatment parameters when using modalities, requires further study.

Cognitive Techniques

Cognitive techniques to help a patient change attitudes, beliefs, and thought patterns about his or her health or condition are used as a component of many physical therapy interventions.³⁷ Specific to OAB, cognitive distraction, that is, thinking of things other than the bladder or the urgency sensation, has long been emphasized as a strategy for controlling urinary urgency¹⁵ and has been utilized as a component of interventions for OAB in several studies.^{26,34,38,39} Strategies for distraction described in the literature include performing mental mathematical calculations, doing a puzzle, or making a to-do list.^{26,38,39} As part of distraction, patients often are instructed to focus on staying still and avoiding rushing to the bathroom when experiencing urinary urgency,

as increased intra-abdominal pressure is thought to worsen urgency.¹⁵

Interestingly, the focus on distraction may be misdirected, as recent evidence suggests that distraction techniques may lengthen reaction times for involuntary sphincter contraction and impair the ability to effectively contract pelvic floor muscles and hence cause 2 commonly coprescribed strategies to be contradictory.^{40,41} Recently, a focus on mindfulness has been proposed as an alternative to distraction for urgency control. Mindfulness-based stress reduction (MBSR), a technique developed in 1979 by Jon Kabat-Zinn, is an intervention focused on mindfulness techniques. The emphasis is on nonjudgmental awareness, responding rather than reacting, and paying attention moment to moment.⁴² It is a structured group intervention, typically delivered in a class-based format of 8 weekly 2-hour sessions, with in-class instruction augmented by regular home practice.⁴²

Mindfulness-based stress reduction has been used as an intervention for urinary complaints in at least 2 studies. Baker et al⁴³ performed a pilot study ($n = 7$) to evaluate the feasibility of using MBSR as a treatment for UUI. Mean urinary incontinence episodes per day decreased from 4.14 to 1.23, 5 of 7 improved on the Patient Global Impression of Improvement, and HRQoL improvements were noted.⁴³ In a larger follow-up study, MBSR was deemed superior to a yoga intervention for decreasing symptoms of UUI.⁴⁴ Further information on the cognitive techniques reported by the above authors is given in the Table.

While the studies on MBSR are promising, the authors utilized the mindfulness techniques on women with UUI; they did not address the other components of OAB (frequency, urgency, nocturia, etc). Also, they did not include any pelvic floor training techniques. Cognitive techniques, while common in clinical practice, have not been regularly included in intervention studies for OAB, and it is not known at this point what specific types of techniques are most helpful. Distraction strategies are a mainstay of physical therapy treatment for urinary urgency, but theoretical support for this strategy is lacking. This represents a significant gap in the current knowledge base regarding best practice for treating OAB. Evaluation of the effectiveness of different cognitive techniques is yet another area for future research.

DISCUSSION

This review describes the theoretical rationales behind PFMT, modalities, and cognitive techniques for OAB and provides a concise summary of the current evidence regarding these interventions. The long-held

theories regarding how and why these techniques work are well founded in anatomy, physiology, and neuroscience, but as this review shows, the evidence for the treatment strategies is equivocal, with some results indicating a treatment benefit, others indicating no benefit, and many studies neglect to address all aspects of OAB, a weakness not clearly identified in previous SRs.^{13,18,20,24} Also, the understanding of urgency itself, the key component of OAB, is evolving rapidly, which may lead to novel ways to approach this key symptom. New evidence and ideas may challenge the use of long-standing treatment approaches to OAB.

The most compelling result of this review is that current evidence leaves so many unanswered questions, such as the following: What PFMT training program is most effective for women with OAB? Does it differ for women with OAB *with* UUI versus OAB *without* UUI? Is distraction the best cognitive approach to controlling urgency, or would patients have better results by de-emphasizing distraction and instead focusing on mindful awareness of bladder sensation? When are additional modalities such as electrical stimulation warranted, if at all? Strong studies examining these questions are needed to guide physical therapy intervention.

While there are multiple SRs on different types of treatment for OAB, reviews on the specific components of behavioral therapy for OAB are just beginning to emerge.²⁹ This review summarizes the current evidence on PFMT, modalities, and the cognitive components of physical therapy for OAB, and highlights that more research is warranted regarding these therapies. In addition, it is imperative that future studies address all components of OAB, not just UUI. More quality primary studies will allow for stronger SRs and, eventually, meta-analyses.

It is worth mentioning that, in addition to the treatments reviewed in this article, various medical options exist for the treatment of OAB, including anticholinergics, β -3 adrenoreceptor agonists, botulinum toxin injections, sacral neuromodulation, and posterior nerve stimulation.^{13,16,20} While these are out of the scope of physical therapy practice, a general awareness of these interventions is useful for physical therapists to facilitate discussions with referring providers and patients. Along these lines, there are recommendations in the medical literature for decreasing fluid intake prior to bedtime, reducing caffeine, alcohol, and carbonated beverage consumption, and losing weight to reduce OAB symptoms. As with the evidence reported in this article, evidence for these recommendations is equivocal.¹⁷ Readers may refer to other references for further information on these treatment options.^{13,16,17,20}

CONCLUSION

Physical therapists are ideal practitioners to provide behavioral therapy to women with OAB. While behavioral treatment for OAB is commonly used in clinical practice and is well-supported by solid theoretical rationales, evidence for the techniques is equivocal and leaves practitioners with many unanswered questions. In addition, the typical focus on distraction as a component of urgency control deserved to be more closely examined and compared with alternative approaches such as mindful awareness. Studies on the details of behavioral therapy for OAB, including all possible components of OAB and not just UUI, are strongly needed.

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