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ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

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Short-term Efficacy of Pelvic Floor Muscle Training and Bladder Training in Postmenopausal Women with Obesity, Wide Genital Hiatus and Overactive Bladder Syndrome

Obezite, Geniş Genital Hiatus ve Aşırı Aktif Mesane Sendromlu Postmenopozal Kadınlarda Pelvik Taban Kas Egzersizi ve Mesane Eğitiminin Kısa Dönem Etkinliği

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ABSTRACT Objective: This study aimed to assess the efficacy of short-term pelvic floor muscle training (PFMT) and bladder training (BT) vs. PFMT alone on urogenital symptoms and the quality of life in postmenopausal women with obesity, wide genital hiatus (GH) and overactive bladder (OAB) syndrome. **Material and Methods: T**he study included a total of 104 patients with 36 (mean age: 55.22±9.68 years, mean body mass index: 30.63±4,41 kg/m^2) completing the study. The patients were divided into two groups to receive PFMT-alone (n=20) or PFMT+BT (n=16) for 8 weeks. Primary outcomes were assessed using OAB questionnaire form, Modified Oxford Score (MOS), pad test and voiding diary with secondary outcomes being assessed using Incontinence Impact Questionnaire (IIQ-7), Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12). **Results:** Statistically significant improvement was observed in OAB scores and voiding functions in both groups (p<0.05). Improvement in MOS was statistically significant in PFMT+BT group compared to the PFMT-alone group (p=0.003, p=0.083). No statistically significant improvement was detected in IIQ-7 and PISQ-12 scores in either group (p>0.05). **Conclusion:** In postmenopausal women with obesity, enlarged GH and OAB syndrome, PFMT-alone and PFMT+BT can be recommended because it improves urinary incontinence symptoms and voiding functions in the short term. Neither treatment method had a beneficial impact on urinary incontinence related quality of life or sexual functions.

Keywords: Bladder training; exercise; obesity; overactive bladder; pelvic floor; postmenopause

ÖZET Amaç: Bu çalışmada; obez, geniş genital hiatus (GH) ve aşırı aktif mesane (AAM) sendromlu postmenopozal kadınlarda, kısa dönem pelvik taban kas egzersizi (PTKE) ve mesane eğitiminin (ME) tek başına PTKE'ye göre ürogenital semptomlar ve yaşam kalitesi üzerindeki etkinliğini araştırmak amaçlandı. **Gereç ve Yöntemler:** Çalışmaya, 104 hasta çalışmaya dâhil edildi, 36 hasta (ortalama yaş: 55,22±9,68, ortalama beden kitle indeksi: 30,63±4,41 kg/m^2) çalışmayı tamamladı. Hastalar, 8 hafta sadece-PTKE (n=20) ve PTKE+ME (n=16) tedavisi verilmek üzere 2 gruba ayrıldı. Primer sonuçlar, AAM sorgulama formu, Modifiye Oxford Skoru (MOS), ped testi, işeme günlüğü ile sekonder sonuçlar İnkontinans Etki Anketi [Incontinence Impact Questionnaire (IIQ-7)], Pelvik Organ Prolapsusu/Üriner İnkontinans Cinsel Anketi [Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12)] ile değerlendirildi. **Bulgular:** Her 2 grupta ped testi, AAM skorları ve işeme fonksiyonlarında istatistiksel olarak anlamlı düzelme saptandı (p<0,05). MOS'da iyileşme PTKE+ME grubunda, sadece PTKE'ye göre istatistiksel olarak anlamlı saptandı (p=0,003; p=0,083). İki grupta da IIQ-7 ve PISQ-12 skorlarında istatistiksel anlamlı bir düzelme saptanmadı (p>0,05). **Sonuç:** Obez, geniş GH'li ve AAM sendromlu kadınlarda, PTKE ve PTKE+ME, kısa dönemde üriner inkontinans semptomlarında ve işeme fonksiyonlarında düzelme sağladığı için önerilebilir. Her 2 tedavi yönteminin, idrar kaçırma ile ilişkili yaşam kalitesi veya cinsel işlevler üzerinde yararlı bir etkisi olmamıştır.

Anahtar Kelimeler: Mesane eğitimi; egzersiz; obezite; aşırı aktif mesane; pelvik taban; postmenopoz

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Overactive bladder (OAB) syndrome has been defined by International Continence Society as a complex of urgency and/or urge type incontinence, frequency and nocturia symptoms in the absence of a urinary tract infection or an obvious pathology.[1]

OAB is a chronic disease that increases with age in women, which is observed at a rate of 7.7-31.3% throughout life.[2] It causes deterioration in the quality of life, general health status, and sexual function, as well as leading to social isolation and depression in women.[1]

OAB is associated with many factors including age, parity and obesity.[1] Aging and menopause predispose women to the development of obesity and urinary incontinence.[3] In the postmenopausal period, changes in the bladder, pelvic tissues, and central nervous system trigger lower urinary system symptoms.[1] Negative effects such as decreased pelvic floor muscle strength associated with estrogen deficiency, negative effect on urethral closing pressure and blood flow, and decrease in alpha-adrenergic receptor sensitivity are observed in the postmenopausal period.[2,4]

Obesity is a factor causing chronic pressure and stress effect on pelvic tissues resulting in weakness of pelvic floor muscle and nerve structures.[5] Increased intra-abdominal pressure due to excess weight leads to increased bladder pressure and overactivity of bladder.[6] The prevalence of OAB was reported to be 16% in overweight persons.[3]

Genital hiatus (GH) enlargement is associated with decreased pelvic floor support.[7] One of the most important causes of this condition is the defect of puborectalis muscle, and 36% of these defects are caused by vaginal delivery.[8] In clinical practice, it is seen as insufficient pelvic floor muscle contraction in women affecting the success of conservative treatment.[8]

Guidelines recommend a conservative approach such as pelvic floor muscle training (PFMT) and bladder training (BT) as a first-line treatment in all urinary incontinence types.[9-11] In the literature, conservative treatments, given as mono- or combined therapies, and factors such as menopausal condition of women were investigated in terms of treatment success. Some studies have reported that response to PFMT is low during menopause, while others have reported it is not related with age.[2,4] Cochrane data indicated that the levels of evidence for PFMT and BT, given alone or in combination, are insufficient.[12] However, in the long- and short-term follow-ups in randomized controlled studies, combined treatment was detected to reduce the frequency of incontinence.[13,14] There are limited studies investigating the efficacy of conservative treatment in women with multiple factors affecting the success of conservative treatment for OAB was found in the current literature.

Our study aimed to investigate the efficacy of short-term PFMT and BT in postmenopausal women with obesity, enlarged GH and OAB syndrome. Our hypothesis is that combined treatment in this patient group will have an effect on urinary symptoms and the quality of life.

MATERIAL AND METHODS

STUDY DESIGN

This is an observational study. Ethical approval for the study was obtained from Uşak University, Faculty of Medicine, Clinical Trials Ethics Committee with the decision dated 10/06/2020 and numbered 223-01-14. All participants signed informed consent. The study was performed in accordance with Helsinki Declaration principles.

Upon clinical evaluation, the patients were divided into two groups to receive PFMT- alone or PFMT+BT, and pre- and post-treatment urinary symptoms and the qualities of life were compared between two groups.

PATIENTS

Demographic data (age, education level, marital status) and birth info (parity, method of delivery, episiotomy, rupture, large baby) of postmenopausal women who presented to Uşak Research and Training Hospital, Obstetrics and Gynecology Outpatient Clinic with urinary incontinence complaints with no urinary tract infection detected by urinalysis and urine culture were obtained by the gynecologist (the first author), and body mass index (BMI) were calculated based on the reported weight and height. BMI being >30 kg/m^2 was considered as obesity.[15] After a comprehensive

clinical assessment (pelvic floor muscle strength examination, pad test, voiding diary and OAB symptom scoring), study inclusion and exclusion criteria were determined. The Questionnaire for OAB (Turkish Validation) was used in diagnosing OAB symptoms (The cut off value of total score >11 for OAB).[16]

The study inclusion criteria were being a postmenopausal female with OAB symptoms who do not use medication for OAB for the last month. The study exclusion criteria were being pregnant or in post-partum period, being virgin, ≥3 stage pelvic organ prolapse, taking anti-incontinence treatment, recent history of anti-incontinence surgery, restriction in hip and leg movements due to orthopedic illness or surgery, and neurological condition. Also, the patients were questioned for the presence of diabetes, hypertension, diuretic use, tobacco use, and chronic cough.

INTERVENTIONS

The patients were divided into two groups. The first group received PFMT- alone and the 2nd group received PFMT and BT for 8 weeks. At baseline, PFMT was demonstrated by a physiatrist (2. and 3. authors) to both groups, and Kegel exercises were given as home-based program.[17]

BT was given to the patients by a gynecologist (the first author).[13] Patients completed a voiding diary in the beginning and at the end of the study.

The pelvic floor muscle strength of the patients was determined by vaginal examination and scored with Modified Oxford Scale (MOS) (0=no contraction, 1=flicker, 2=weak, 3=moderate, 4 = strong and 5=very strong).[18]

GH (mid-urethra-hymen posterior midline) measurement was performed as three measurements: at rest, with strain, and with squeezing and was measured in cm according to the definition of Bump et al.[19] Than wideness was evaluated.[20] Pelvic organ prolapse stage was assessed according to simplified pelvic organ prolapse (POP) quantification.[21]

A one-hour pad test was performed to the patients and a 24-hour voiding diary was explained.[18,22] In the pad test <2 gr was assessed as no leakage, 2-10 gr as mild/moderate, 10-50 gr as severe, and >50 gr as very severe urinary incontinence.[18] Nocturia, frequency, and frequency of urine leakage were determined with the voiding diary.[22]

PFMT was given by a physiatrist as a Kegel exercise home program.[17] Initially, the physiatrist showed the movements as a group exercise, information was provided about the anatomy of the pelvic region and how these exercises would be effective in the treatment. Before starting the exercise, patients were told to empty their bladder and wear comfortable clothing.

The patients were taught the method of contracting and relaxing the pelvic floor muscles in sitting, standing, and supine position, with their knees slightly flexed and their head slightly raised.[23] While performing pelvic floor exercises, it was specifically stated that they should not contract the abdominal, hip, and thigh muscles. They were told to perform the exercises 5 times a week, 3 times a day for about 20-30 minutes in 2 sets of 10 repetitions. In addition, these exercises were given to the patients as an illustrated leaflet.

In BT, micturition frequencies were organized by the gynecologist based on the patients' 24-hour voiding diary, breathing to suppress the feeling of urge, contracting the pelvic floor muscles, commanding the brain to control and holding and distracting themselves.[13,22]

All patients were controlled with telephone by the authors every fifteenth days during the study.

OUTCOME MEASURES

Primary outcomes; at the end of the study, urinary symptoms (pad test, OAB symptoms scores, voiding diary (nocturia, frequency, urine leakage) and pelvic floor "'pelvic floor muscle strength values" of the patients were compared with their baseline values.

Secondary outcomes; at the end of the study, the patients' quality of life measured by Incontinence Impact Questionnaire (IIQ-7) and Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12) were compared with their baseline values. IIQ-7 evaluates the physical activity, social relations, travelling and emotional health status of women.[24] PISQ-12 is a 12-item scale to evaluate the sexual functioning in women experiencing PISQ-12.[25]

STATISTICAL ANALYSIS

The total sample size found in the literature review using the G-POWER software with 0.8 effect size, 80% power and 0.5 error margin based on the percentage measurement values for the methods to be studied is n=52. The calculation was based on determining the number of samples for Student's t-test by taking into account 2 independent groups. Group rates are equal to each other. It was arranged as n=26 for each group.

Number Cruncher Statistical System 2007 (Kaysville, Utah, USA) software was used for statistical analyses. While evaluating the study data, in addition to descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, maximum), the distribution of the data was evaluated using the Shapiro-Wilk test. For quantitative data, Student's t-test was used for the comparison of two groups with normal distribution, and the Mann-Whitney U test was used for the comparison of two groups that did not show normal distribution.

Wilcoxon test was used for periodic comparisons of quantitative data. Chi-square analysis was used to compare qualitative data. Significance was evaluated at $p<0.01$ and $p<0.05$ levels.

RESULTS

The study was initiated with 104 patients who met inclusion criteria between June and August 2020. Sixty-eight of these women (65.3%) withdrew due to transportation, familial and health issues with the remaining 36 patients (34.6%) completing the study. Figure 1 shows the study flow chart.

All patients were married, and their educational status was at primary education level. BMIs for both groups were detected to be 30.45±4.29 kg/m^2 and 30.86±4.69 kg/m^2, respectively, i.e. obese (p=0.791). Table 1 shows the demographic characteristics of the patients such as age, parity and BMI.

In the PFMT-alone group; diabetes was detected in four patients, hypertension and diuretic treatment in four patients, asthma in one patient, and tobacco use in two patients. In the PFMT+BT group; diabetes was detected in four patients, hypertension and diuretic treatment in 3 patients, and tobacco use in two patients.

All of patients were evaluated as Stage -II POP (prolapse remains 1 cm above to the hymen). Resting and squeezing GH measurements for both groups were 5.34±3.47/7.6±4.51 cm and 4.86±3.08/7.15±3.91 cm, respectively, i.e. enlarged (p=0.655, p=0.543). Table 2 shows the GH measurements of the patients.

Table 3 shows the delivery characteristics of the patients such as the delivery method, episiotomy, rupture, delivering a baby of >4,000 gr.

PRIMARY OUTCOMES

Statistically significant improvement was detected in the pad test in PFMT-alone and PFMT+BT groups (p=0.001, p=0.003, respectively).

Statistically significant improvement was detected in the OAB symptoms in PFMT-alone and PFMT+BT groups (p=0.024, p=0.021, respectively).

Statistically significant improvement was detected in nocturia in PFMT-alone group compared to the PFMT+BT group (p=0.004, p=0.053, respectively). Statistically significant improvement was detected in the frequency finding in PFMT-alone and PFMT+BT groups (p=0.001, p=0.001, respectively). Statistically significant improvement was detected in the urine leakage finding in PFMT-alone and PFMT+BT groups (p=0.003, p=0.006, respectively).

Statistically significant improvement was detected in MOS in PFMT+BT group compared to the PFMT-alone group (p=0.003, p=0.083, respectively).

SECONDARY OUTCOMES

No statistically significant improvement was detected in IIU-Q scores of the PFMT-alone and PFMT+BT groups (p=0.123, p=0.055, respectively).

No statistically significant improvement was detected in PISQ-12 scores of the PFMT-alone and PFMT+BT groups (p=0.861, p=0.220, respectively).

Table 4 shows the pre- and post-treatment comparisons of urinary incontinence findings and the quality of life scales within the PFMT-alone group and PFMT+BT group individually.

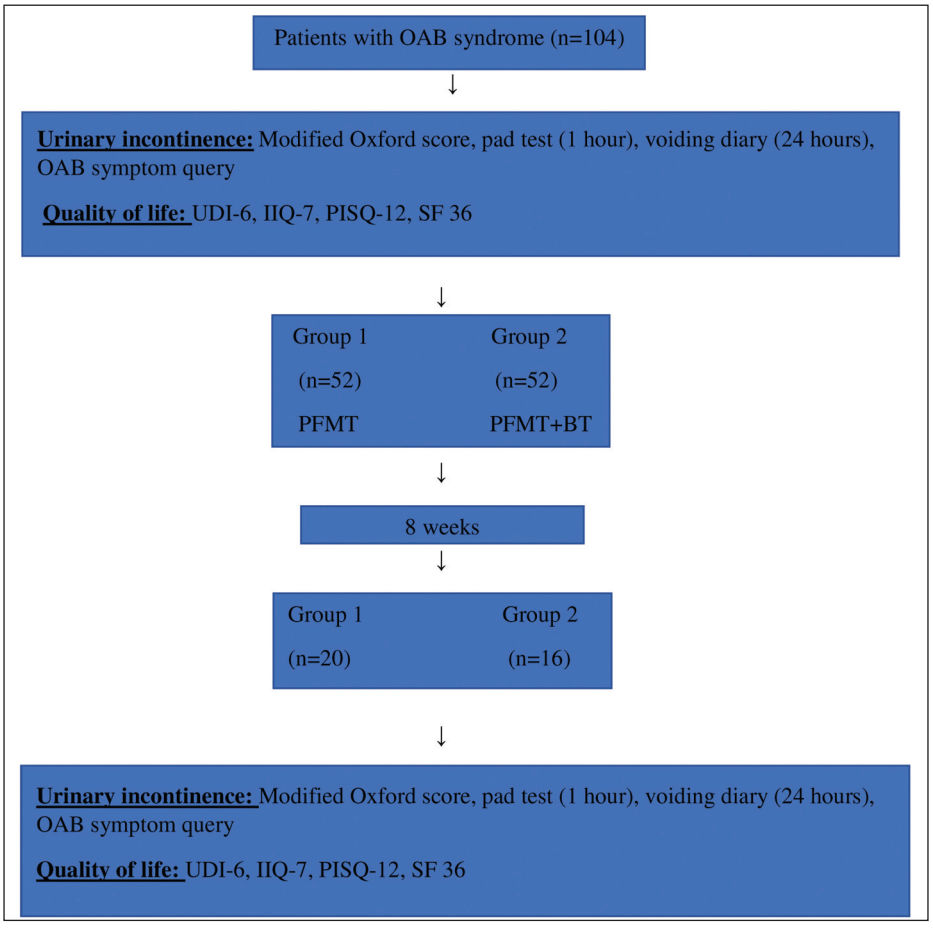

FIGURE 1: Study flow chart.
OAB: Overactive bladder; IIQ-7: Incontinence impact questionnaire; PISQ-12: Pelvic organ prolapse/urinary incontinence sexual questionnaire-12; PFMT: Pelvic floor muscle training; PFMT+BT: Pelvic floor muscle training and bladder training.UDI-6, SF 36.

TABLE 1: Demographic characteristics of the study groups.

Demographic characteristics	PFMT (n=20) Mean±SD (Maximum-minimum)	PFMT+BT (n=16) Mean±SD (Maximum-minimum)	p value
Age (year)	55.05±10.14 (40-73)	55.44±9.39 (45-85)	[a]0.907
Parity	2.95±1.73 (0-7)	3.13±1.89 (2-9)	[b]0.804
BMI (kg/m^2)	30.45±4.29 (21.8-36.3)	30.86±4.69 (25.09-40)	[a]0.791

[a]Mann-Whitney U test; [b]Student t-test; PFMT: Pelvic floor muscle training; PFMT+BT: Pelvic floor muscle training and bladder training; SD: Standard deviation; BMI: Body mass index.

TABLE 2: Genital hiatus measurement values of the study groups.

Genital hiatus measure (cm)	PFMT (n=20) Mean±SD (Maximum-minimum)	PFMT+BT (n=16) Mean±SD (Maximum-minimum)	[a]p value
Rest	5.34±3.47 (1.25-16)	4.86±3.08 (1.1-11.6)	0.655
Strain	7.6±4.51 (3.2-19.2)	7.15±3.91 (3-17.4)	0.924
Squeeze	2.77±1.49 (1.25-6.3)	2.74±2.06 (0.85-8.25)	0.543

[a]p:Mann-Whitney U test; PFMT: Pelvic floor muscle training; PFMT+BT: Pelvic floor muscle training and bladder training; SD: Standard deviation.

TABLE 3: Birth characteristics of the study groups.

Birth characteristics	PFMT (n=20)	%	PFMT+BT (n=16)	%	[a]p value
Type of birth					
- None	2	-			0.727
- C-section	1	5.6%	1	6.3%	
- Vaginal birth	17	94.4%	15	93.7%	
Episiotomy					
- Yes	1	10%	0	0%	0.302
- No	18	90%	16	100%	
Tear					
- Yes	2	10%	1	6.2%	0.585
- No	18	90%	15	93.8%	
>4,000 g infant					
- Yes	3	15%	7	43.7%	0.062
- No	17	85%	9	56.3%	

[a]p: Chi-square test; PFMT: Pelvic floor muscle training; PFMT+BT: Pelvic floor muscle training and bladder training.

DISCUSSION

Short-term PFMT and PFMT+BT offered to postmenopausal women with obesity, enlarged GH and OAB syndrome improved urinary incontinence symptoms. It was seen that PFMT+BT provides improvement in pelvic floor muscle strength compared to PFMT-alone. There was no positive effect of either treatment method on IIQ-7 and PISQ-12 scores.

Voiding is an action that occurs when the external urethral sphincter is relaxed. The voluntary contraction of this sphincter in the sense of urgency prevents voiding by inhibiting reflex detrusor contractions.[26] This is especially important in urge type incontinence.[4] PFMT increases the resistance of the bladder neck and proximal urethra by controlling the voiding reflex.[18,27]

PFMT effect starts to show up in two weeks, complaints decrease in 6-8 weeks and complete recovery occurs in the sixth month of treatment.[28] The initially recommended duration of the PFMT treatment has been reported as 6-8 weeks in some studies and 8-12 weeks in International Continence Society recommendations.[29,30]

PFMT can be done personally, as a group or at home, however, there is no consensus on which is more efficient.[31] In their meta-analysis, Paiva et al. stated that compared to group exercises, at-home exercises are not efficient in the treatment of urinary incontinence.[30] In a different study, however, improvement in pelvic floor muscle functions, decrease in urine leakage and nocturia and improvement in the quality of life were observed after an at-home PFMT program given for 12 weeks to women with OAB symptoms with a mean age of 59.9 years.[29]

TABLE 4: Urinary incontinence findings and quality of life scale values of study groups before and after treatment.

	PFMT (n=20)			PFMT+BT (n=16)		
	First (Mean±SD)	Last (Mean±SD)	[b]p	First (Mean±SD)	Last (Mean±SD)	[b]p
Urinary incontinence						
Pad test	16.45±19.84	5.5±6.24	**0.001****	10.19±12.93	2.31±2.60	**0.003****
OAB score	23±10.72	21.05±12.17	**0.024***	20.31±8.75	16.38±9.16	**0.021***
Nocturia	4±1.49	3±2.1	**0.004****	3±1.21	1.94±1.71	**0.053***
Frequency	11.4±2.04	7.7±4.26	**0.001****	10.63±1.36	6.47±2.62	**0.001****
Urine leakage	5.5±2.48	3.55±2.84	**0.003****	5.75±1.84	3.35±2.23	**0.006****
MOS	2.65±0.75	2.8±0.83	0.083	2.44±0.63	3.00±0.82	**0.003****
Quality of life						
IIQ-7	13.45±5.89	11.5±6.18	0.123	12.06±6.16	9.31±5.94	0.055
PISQ-12	29.35±6.9	28.88±6.84	0.861	26.53±6.28	28.80±5.36	0.220

[b]p: Wilcoxon signed rank testi; *p<0,01; PFMT: Pelvic floor muscle training; PFMT+BT: Pelvic floor muscle training and bladder training; SD: Standard deviation; OAB: Overactive bladder; MOS: Modified oxford scale; IIQ-7: Incontinence impact questionnaire; PISQ-12: Pelvic organ prolapse/urinary incontinence sexual questionnaire-12.

In their randomized controlled study in women with urinary incontinence with a mean age of 50 years, Felicíssimo et al. showed that PFMT performed at home or under the supervision of a specialist for 8 weeks are both effective in the treatment.[32] In our study, short-term at-home PFMT done by postmenopausal women had positive effects on urinary incontinence.

Generally, although the success in PFMT is 41-85%, failure in treatment can be seen in some cases.[33] Steensma et al. observed levator avulsion in PFMT failure at a rate of 54%.[34] Levator avulsion causes loss of pelvic floor muscle strength and enlargement of the GH.[35]

It has been stated in the literature that a GH measurement of >3.75 cm is associated with loss of support of the pelvic organs.[21] Also advanced POP affect pelvic muscle contractions. Women with Stage II POP had better pelvic floor muscle contraction in than ≥ Stage III POP.[36] Resende et al. detected that women with Stage II-POP, 12 week PFMT at home improved pelvic floor muscle functions.[37] Obesity is a triggering factor for urinary incontinence by causing intra-abdominal pressure increase, intra-vesical pressure increase and urethral hypermobility.[3]

In the literature, it was shown that individuals who exercise regularly have less weight problems, stronger pelvic floor muscles and less urinary incontinence.[3] Weber Rajek et al. detected that pelvic floor exercises in obese women stimulate myokine synthesis leading to muscle growth and hypertrophy.[3] In our study, the patient groups had obesity, and GH enlargement indicating a possible pelvic floor muscle damage. The fact that muscle strength improvement was only observed in the PFMT+BT group after short-term exercise can be explained by the additional effect of pelvic floor muscle contraction instructions taught in BT.

Regression of OAB symptoms observed in the groups was considered to be associated with the inhibiting effect of reflex detrusor contractions due to PFMT.

BT was first described in urge type incontinence and is based on the mechanism of regulation of voiding by cortical inhibition.[13] Six weeks is recommended in first-line treatment in urge type incontinence.[11] There are different studies in the literature on the effect of BT on treatment. While some studies reported that BT was effective in urge, frequency, and nocturia and treatment success was 44-90%, a meta-analysis of 1,366 cases reported that the effect of BT on urinary incontinence was not clear compared to other supportive treatments.[13,33] Fantl et al. found that frequency was reduced by 57% with BT in elderly women and urinary incontinence by 54%.[38] There are different studies in the literature regarding the addition of BT to PFMT.

In 108 patients with an average age of 48 years, high-intensity PFMT and BT were found to be more effective than BT alone in urge type incontinence.[14] Women with urinary incontinence with an average age of 55 were given PFMT + BT treatment as hospital and home exercise for 12 weeks, and a positive effect on pad testing, frequency, and quality of life was observed equally in all incontinence types including urge type in both groups.[22]

In a different study, it was determined that in 12-week PFMT and BT application, BT showed an effect in 6 weeks, and PFMT in 12 weeks, and also provided improvement in frequency and quality of life.[13] In our study, both PFMT alone and PFMT+BT were found to be effective in improving the symptom scores of OAB.

In the literature, sexual dysfunctions such as dyspareunia, anorgasmia, and decreased desire have been reported with a rate of 83.6% related to urinary incontinence.[39] Studies show that PFMT in the presence of a supervisor has positive effects on sexual life. The pelvic floor muscles are partially responsible for sensation, arousal, and reaching orgasm during sexual intercourse. As muscle tone and blood circulation increase with PFMT, the blood flow to the clitoris also increases.[40] In the literature, it has been found that the increase in pelvic floor muscle strength with PFMT provides a significant increase in sexual function scores.[28] In 114 women with urinary incontinence and sexual dysfunction, including urge type, with an average age of 45.5 and 29% of whom were in the menopausal period, an improvement in PISQ-31 scores was detected following six months of

PFMT treatment.[40] In our study, no positive effect of PFMT on sexual function was observed. This can be explained by the short duration of treatment, enlarged GH in patients, the absence of a significant improvement in pelvic floor muscle strength, and the practice of home exercise.

OAB has negative effects on women's quality of life.[1] There are many studies in the literature examining the effects of PFMT and BT on quality of life. Aslan et al. found improvement in the quality of life in 50 patients, including urge type incontinence patients between 74-85 years of age, after 6-8 weeks of supervised PFMT and BT treatment.[41]

Bradley et al. reported improvement in the quality of life in 344 patients with urinary incontinence (including urge type) between the ages of 40 and 60 following 12 weeks of supervised PFMT.[42] Demain et al. observed a positive change in the quality of life after 12-14 weeks of supervised PFMT to 44 patients aged 60 years including those with urge type incontinence.[43]

Fan et al. reported improvement in the quality of life in 372 patients aged 42-62 years with urinary incontinence (including urge type) after 36-42 weeks of supervised PFMT.[44] Nascimento et al. found a positive change in the quality of life in 30 patients aged 50-69 years with urge type incontinence after 12 weeks of PFMT treatment.[45] The fact that there was no improvement in our study in IIQ-7 values in which psychosocial and emotional effects related to urinary incontinence were examined can be explained by the short duration of the study and home exercise.

STUDY LIMITATIONS

The study was initially planned as group exercises accompanied by a physiatrist, however, it was switched to an at-home program due to pandemic, socioeconomic status of the patients and transportation issues. Indeed, lack of knowledge, skills and motivation in older women for PFMT, and transportation issues have also been reported in the literature.[46] Due to the education level, social and transportation issues of the patients, only 1-hour pad test and 24-hour voiding diary could be used for diagnosis. In the literature, it was reported that patients diagnosed with different urodynamic conditions can equally benefit from behavioral treatments and urodynamics should be performed in case of an accompanying pathological finding with urodynamics not being recommended as a routine practice before PFMT and BT.[13] Therefore, urodynamic assessment was not performed in the patients.

CONCLUSION

In postmenopausal women with obesity, enlarged GH and OAB syndrome, PFMT-alone and PFMT+BT can be recommended because it improves urinary incontinence symptoms and voiding functions in the short term. Given the positive effect of PFMT+BT on pelvic floor muscle strength, further research into its long-term effects on quality of life and sexual function was needed in this patient group.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

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