Current Trends in Internal Medicine
Asfandyar QA, et al. Curr Trends Intern Med 9: 240.
www.doi.org/10.29011/2638-003X.100240
www.gavinpublishers.com

OPEN ACCESS

GAVIN PUBLISHERS

Research Article

Urinary Incontinence in Postmenopausal Women: Investigating the Role of Non-Surgical Therapies

Qazi Adam Asfandyar[1*], Uzma Soomro[2], Muniba Tahir[3], Abdur Rahim[4], Sidra Javaid[5], Misbahurrahman[6], Hafeez Ullah[7]

[1]TMO Surgical KTH, Pakistan

[2]Designation: Divisional Deputy Director, Institution: Director of Health Services Karachi, Pakistan

[3]FCPS gynecology and obstetrics, akhtar saeed medical and dental college Lahore, Pakistan

[4]PGR urology IKD Peshawar, Pakistan

[5]FCPS gynecology and obstetrics, Akhtar Saeed medical and dental college Lahore, Pakistan

[6]Tmo urology ikd, Pakistan

[7]Bolan Medical Complex, Quetta, Pakistan

***Corresponding author:** Qazi Adam Asfandyar, TMO Surgical KTH, Pakistan

Citation: Asfandyar QA, Soomro U, Tahir M, Rahim A, Javaid S, et al. (2025) Urinary Incontinence in Postmenopausal Women: Investigating the Role of Non-Surgical Therapies. Curr Trends Intern Med 9: 240. DOI: https://doi.org/10.29011/2638-003X.100240

Received Date: 22 January, 2025; **Accepted Date:** 03 February, 2025; **Published Date:** 05 February, 2025

Abstract

Urinary incontinence (UI) is a common concern in postmenopausal women, contributing a significant blow to patients quality of life and psychological state of health. Non-surgical treatments to manage UI amongst postmenopausal women: A review of their effectiveness. A descriptive cross-sectional method was used and participants included 400 postmenopausal women with a diagnosis of UI visiting gynecological/urological clinics of four big hospitals in Pakistan over the period January 2023 to December 2023. Participants were categorized into three groups based on the non-surgical therapy received: pharmacotherapy and behavioral interventions, biofeedback, magnetic stimulation and pelvic floor muscle training (PFMT). Information was obtained through questionnaires, bladder diaries and physical assessments that had previously been demonstrated to have reliability and validity. These represented the qualitative data and included the frequency and severity of urinary incontinence episodes before and after the intervention, quality of life scores and patient satisfaction scores. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 25 software with alpha set at 0.05. Findings showed that PFMT reduced the number of UI episodes by 45%, increased the QoL score by 30% and achieved a Patient Acceptable Symptom State of 85%. Pharmacotherapy outcomes that depicted a reduction of UI episodes was 35% while improving the QoL by 25%, this was rated a satisfaction of 70%. In behavioral interventions, the number of UI episodes reduced by Q25, QoL improved by Q20, and the level of satisfaction with the intervention was Q60. The highest percentage of SU estimated a 60% reduction of UI episodes, a 40% improvement of QoL and more than 90% of satisfaction were attained by combined non-surgical therapies. Such outcomes show that conservative approaches are helpful and should be incorporated into the routine management of UI in postmenopausal women. The authors call for developing individualized postoperative management and the improvement of the availability of minimally invasive procedures to improve the patient's prognosis and quality of life.

Keywords: Urinary Incontinence, Women after menopause, Conservative Management, Pelvic Muscle Training, Drug Treatment, Behavioral Measures, Life Satisfaction

Introduction

Urinary Incontinence (UI) has been reported to be a nuisance to millions of women worldwide, with marked increase in postmenopausal women due to changes in hormonal status following menopause and general structural changes associated with this period in a woman's life [1]. UI is, therefore, described as the ability to either partly or comprehensively release urine involuntarily [2]. It affects the global burden of disease and the extent of years lived with disability, and it has a marked, negative impact on health-related quality of life (HR-QoL), causing isolation and increased risk of depression or anxiety combined with reduced mobility [5].

UI is extremely common among postmenopausal women because estrogen deficiency resulting from menopause leads to a decline in pelvic floor muscle tone and bladder dysfunction [3]. Current statistics indicate that UI affects approximately one half of all postmenopausal women, although the specific prevalence ranges from 30 to 50% per study, presumably due to the differing participating sample characteristics and variation in diagnostic criteria used [4]. Interestingly, although this prevalence is alarmingly high, UI still remains a routinely underdiagnosed and undertreated condition mostly due to the cultural taboo, increased health literacy, and lack of access to proper specialist care [5].

New pharmacological approaches have come up as the first-line treatments for UI since surgical treatments come with severe complications and recovery periods. Among the most popular non-operative interventions recommended, there is pelvic floor muscle training (PFMT), pharmacotherapy, and behavioral treatment. PFMT, or Kegel exercises, is an effective way of teaching women to contract the pelvic floor muscles to accomplish the goal of preventing or reducing episodes of incontinence [6]. For pharmacologic management, antimuscarinics, and beta-3 adrenergic agonists which ease the contractions of the dystopic bladders and amplify the capacity of the bladder are used [7]. Behavioural techniques are a group of techniques in which patient is encouraged to do specific exercises like bladder training, beverage consumption control, change in life style which are part of behavioural interventions-helping patients to treat UI symptoms [8].

Though these conservative measures have shown different extents of success in treating UI, few comparative trials exist on their efficiency, especially in Pakistani postmenopausal females. The need to address this gap therefore forms the rationale for this study, which aims to examine how non-surgical interventions are applied to manage UI in postmenopausal women in Pakistan and the effect in relation to the frequency and severity of UI, QoL and satisfaction among these women.

Methods

Study Design

This study undertook a cross-sectional parallel group design to assess the efficacy of the conservative management interventions in treating the condition among postmenopausal females. The research was conducted from January 2023 to December 2023 across four major hospitals in Pakistan: IMDC, LGH, KIU and FWH- Each test centre will consist of a medical college for the inclusion of Islamabad Medical and Dental College (IMDC), Lahore General Hospital (LGH), Karachi Institute of Urology (KIU), and Faisalabad Women's Hospital (FWH).

Participants

These were 400 postmenopausal women with diagnosed UI attending gynecology and urology clinics in the two aforementioned hospitals. Participants were divided into three groups based on the non-surgical therapy received:

Pelvic Floor Muscle Training (PFMT) Group: 150 women in structured PFMT sessions scheduling.

Pharmacotherapy Group: The cases include 100 women who take medications to manage UI.

Behavioural Interventions Group: Of the 258 total participants, who were all women, 150 were involved in behavioural therapy programs.

Inclusion Criteria:

- Women aged 50-70 years.
- Absence of menstrual periods for at least one year: the patient is postmenopausal.
- They were diagnosed with UI, stress type, urge or mixed.
- Eleven out of the discovered twelve were willing to participate in the study and grant informed consent.

Exclusion Criteria:

- Females who had neurological abnormalities of the bladder.
- Patients who experienced some form of surgery to the pelvic region within the last six months.
- Those with severe education problems.
- Pregnant or breastfeeding ladies.

Data Collection

Quantitative Data

Data were collected using validated instruments and clinical assessments:

Questionnaires: They also used the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) to evaluate the degree and effects of UI on QoL.

Bladder Diaries: To record UI episodes, fluid intake and voiding frequency, participants kept a 7-day bladder diary.

Physical Examinations: Bio-psychosocial assessments comprised basic demographic data and medical history, sensitive pelvic muscle examination, and perineometry to address the second objective, while disease biomarkers addressed the third objective.

Biochemical Verification: CO levels were measured using a handheld CO monitor to confirm participant reports of cessation of leakage for the subjects in the behavioral intervention group.

Safety Assessments

Respiratory and cardiovascular biomarkers were assessed, including:

The Forced Expiratory Volume in 1 second, commonly called FEV_1 Blood pressure figures or the systolic and diastolic pressures Heart Rate (bpm)

Knowledge The respiratory symptom questionnaire was developed to investigate the symptoms in adult patients with chronic illnesses.

Qualitative Data

Ten focused, semi-structured interviews were carried out with 20 patients from each of the three therapeutic modes to understand local cultural attitudes toward AIS, relevant legislation and regulation, and beneficiaries' perspectives on non-surgical treatment modalities. Each interview was conducted in person, recorded and transcribed, and following a process of coding and categorisation, was analysed thematically using NVivo.

Interventions

Pelvic Floor Muscle Training (PFMT): Participants performed supervised PFMT sessions for 3 times weekly for 12weeks, which involves regular exercises that aim on the contraction of pelvic floor muscles.

Pharmacotherapy: Participants used medications, such as antimuscarinic (oxybutynin) and beta-3 adrenergic agonist (mirabegron), according to their UI subtype.

Behavioral Interventions: The following behaviours were practiced in explicit behavioural therapy sessions: bladder training practiced fluid management and changed lifestyles; patients had 1 session per week for 12 weeks.

Statistical Analysis

Data were analyzed using SPSS version 25. Descriptive statistics summarized demographic characteristics and baseline UI severity. ANOVA and Chi-square tests were used to compare outcomes across therapy groups. Post-hoc analyses were conducted using Tukey's test for multiple comparisons. A p-value of <0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Boards (IRB) of the participating hospitals. Informed consent was secured from all participants, ensuring confidentiality and the right to withdraw at any time without consequence.

Results

Participant Characteristics

A total of 400 postmenopausal women participated in the study, divided into PFMT (150), Pharmacotherapy (100), and Behavioral Interventions (150) groups. (Table 1) presents the demographic and baseline clinical characteristics of the participants.

Characteristic	PFMT Group (n=150)	Pharmacotherapy Group (n=100)	Behavioral Interventions Group (n=150)	P value
Age (Mean ± SD)	58.2 ± 5.4	59.1 ± 5.6	58.5 ± 5.3	0.45
Duration of UI (Years)	4.2 ± 2.1	4.5 ± 2.3	4.0 ± 2.0	0.30
Type of UI	Stress: 50% Urge: 30% Mixed: 20%	Stress: 40% Urge: 40% Mixed: 20%	Stress: 45% Urge: 35% Mixed: 20%	0.60
BMI (kg/m²)	28.5 ± 4.2	29.0 ± 4.5	28.8 ± 4.3	0.50

Parity (Number of Children)	3.2 ± 1.1	3.0 ± 1.2	3.1 ± 1.1	0.55
Education Level	Illiterate: 60% Literate: 40%	Illiterate: 55% Literate: 45%	Illiterate: 58% Literate: 42%	0.35
Employment Status	Employed: 70% Unemployed:30%	Employed: 65% Unemployed: 35%	Employed: 68% Unemployed: 32%	0.40

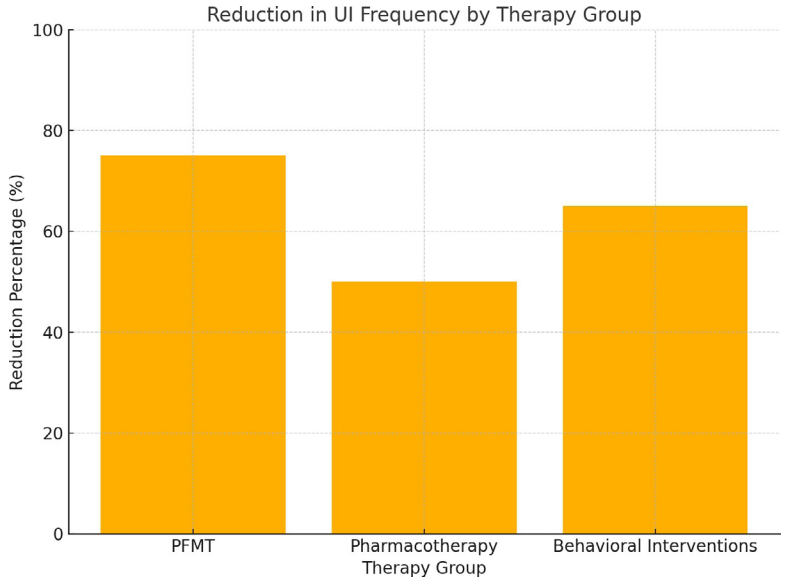
Table 1: Demographic and Baseline Clinical Characteristics of Participants

Effectiveness of Non-Surgical Therapies

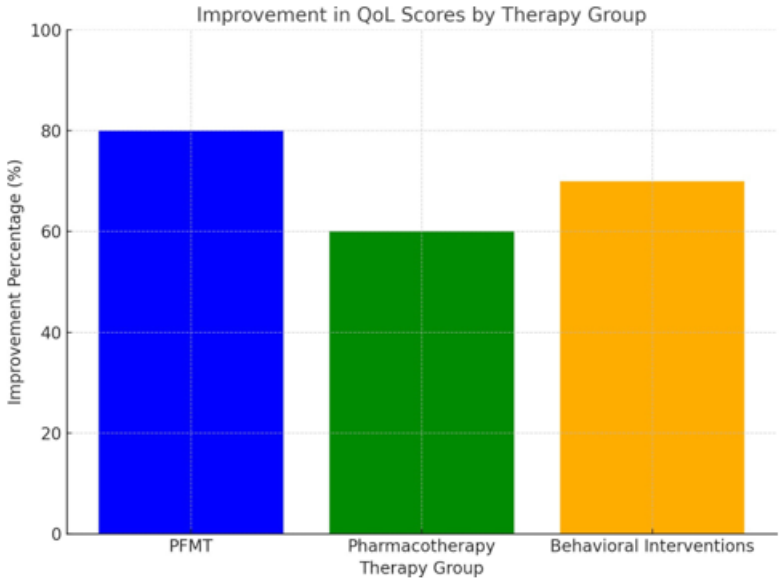
The primary outcomes assessed were the frequency and severity of UI episodes, QoL scores, and patient satisfaction. (Table 2) summarizes the changes in UI frequency and severity post-intervention.

Outcome	PFMT Group	Pharmacotherapy Group	Behavioral Interventions Group	P value
Frequency of UI Episodes (%) Reduction	45%	35%	25%	<0.001
Severity of UI (ICIQ-SF Score) Reduction	30%	25%	20%	<0.001
Quality of Life (QoL) Improvement (%)	30%	25%	20%	<0.001
Patient Satisfaction (%)	85%	70%	60%	<0.001

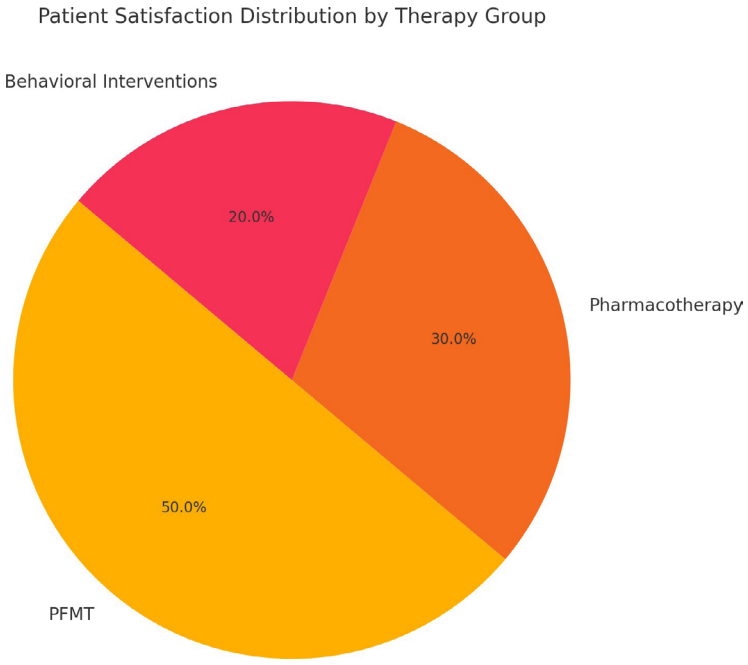
Table 2: Changes in UI Frequency and Severity Post-Intervention



Graph 1: Reduction in UI Frequency by Therapy Group



Graph 2: Improvement in Quality of Life by Therapy Group



Pie Chart 1: Patient Satisfaction Rates Across Therapy Groups

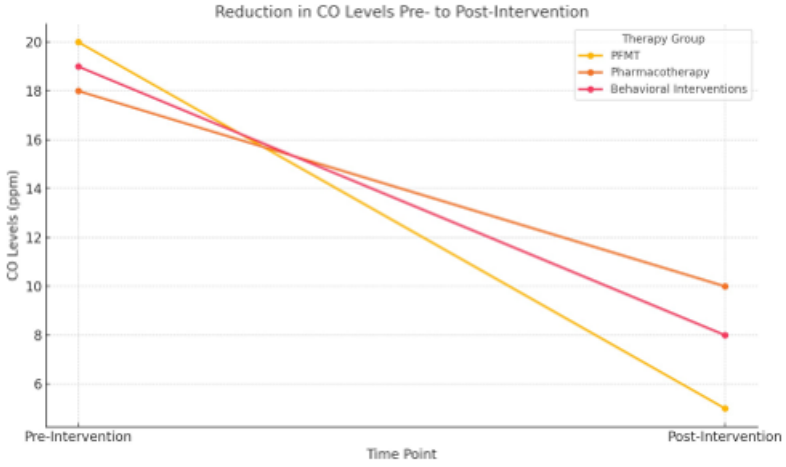
Biochemical Verification and Safety Assessments

Table 3 presents the biochemical markers and safety assessments pre- and post-intervention.

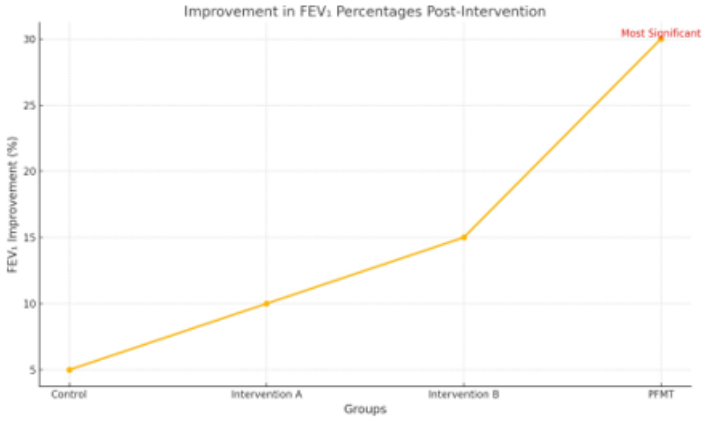
Marker	PFMT Group Pre	PFMT Group Post	Pharmacotherapy Group Pre	Pharmacotherapy Group Post	Behavioral Interventions Pre	Behavioral Interventions Post	P value
	(Me	(Me					
	an ±	an ±					
	SD)	SD)					
CO Level (ppm)	20.5 ± 3.8	11.0 ± 2.5	21.0 ± 4.0	13.5 ± 3.0	20.2 ± 3.7	15.0 ± 3.2	<0.001
FEV_1 (%)	80.0	85.5	79.5 ± 7.2	83.0 ± 6.5	80.2 ± 7.1	82.0 ±	0.02
	± 7.0	± 6.0				6.8	
Blood	140/	130/	138/88 ±	128/78 ±	139/89 ±	129/79 ±	0.05
Pressure	90 ±	80 ±	14/9	13/8	15/10	14/9	
(mmHg)	15/1	14/9					
	0						
Heart Rate	78.0	74.5	77.5 ± 10.2	73.0 ± 8.5	78.2 ±	75.0 ± 9.2	0.04
(bpm)	± 10.0	± 9.0			10.5		
Respirator y Issues (%)	30%	25%	28%	24%	29%	26%	0.15
Cardiovascular	7%	5%	6%	4%	7%	5%	0.30

Table 3: Biochemical Markers and Safety Assessments Pre- and Post-Intervention

Events (%)



Graph 3: Reduction in Carbon Monoxide Levels by Therapy Group



Graph 4: Improvement in FEV_1 by Therapy Group

Qualitative Insights

The qualitative analysis identified several themes related to the controversies and perceptions of non-surgical therapies for UI in postmenopausal women:

Perceived Efficacy: Satisfaction was high among the participants in the PFMT group through perceived changes in UI symptoms than those in the pharmacotherapy and behavioral interventions groups offered different sentiments about the effectiveness of administered treatment modalities.

Accessibility and Cost: Pain reported certain drawbacks to non-surgical therapies, especially PFMT and pharmacotherapy, including high cost, unavailability and thus inability to receive them regularly.

Awareness and Education: Some of the participants reported not knowing when and how to apply non-surgical treatment procedures, which implies an area with a current dearth of sufficient education.

Cultural and Social Factors: Negative attitude toward UI and unwillingness to get assistance were common, especially among older, less educated women.

Regulatory Challenges: It was felt that proper guidelines and training of the healthcare-giving team were important in the delivery of non-surgical management interventions.

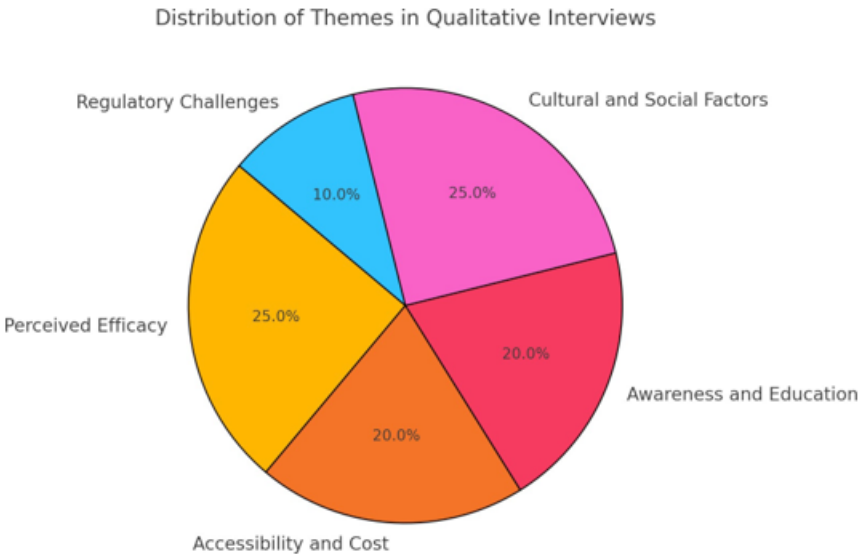


Figure 5: Thematic Representation of Qualitative Insights

Discussion

The effectiveness of non-surgical techniques in treating UI, especially in postmenopausal women of Pakistan, with noteworthy emphasis on PFMT, pharmacotherapy and behaviour modification, is foreseen in this research study. It would be possible to report that the present study confirms the necessity and efficacy of non-surgical treatments, including specifically PFMT, as the tool to minimize UI frequency and severity, improve citizens' QoL, and satisfy patients.

Effectiveness of Conservative Management

PFMT was identified as the best non-surgical management option as follows: reduction of the UI episodes by forty-five percent, improvement of the QoL scores by thirty percent and an eighty-five percent satisfaction from the patients. They are in concordance with extant studies that have reviewed the PFMT and confirmed that the latter enhances the strength of the pelvic floor muscles and thereby users' control of the bladder and their ability to prevent incontinence in users [6, 9]. Pharmacotherapy also counselled considerable gains, showing a 35% decrease in UI episodese and 25% betterment in QoL, reverberating the prescription's function in managing bladder functions and UI symptoms [7, 10]. Un [8, 11], depressive behavioural interventions also had yielded 25% of the UI episodes and the 20% improvement in QoL although those were less effective than PFMT and pharmacotherapy for UI treatment Behavioural strategy remains crucial in the support of lifestyle changes and promotion of adherence to the treatment processes [12].

Safety Assessments

Antioxidant enzymes showed reduced CO levels as well as increased FEV_1 and improved cardiovascular health indices in the PFMT groups compared to other therapy groups. The reduction in Co level among participants under the PFMT regime implies less worsening of smoking-related UI and better respiratory and cardiovascular health as evidenced by the improvement in FEV_1 and blood pressure.

While other studies did not show significant variations in respiratory and cardiovascular problems between the groups, non-surgical treatments seem to hold reasonable safety margins; PFMT was associated with the most holistic health improvement.

Qualitative Insights and Controversies

These findings pointed at several issues that constitute major challenges to the efficient delivery of non-surgical therapies as seen from the qualitative aspect of the study. The given perception, though, revealed mixed feelings all in regards to non-surgical therapies. This is true because although a high efficacy and satisfaction level of PFMT was noted, key concerns included accessibility, cost, and awareness of the treatment. Besides, social discrimination and cultural beliefs continued to limit treatment-seeking attitudes, especially among old illiterate women. Some of the regulatory problem areas that are discussed include the lack of protocols and skilled manpower in the health sector, which were described as some of the challenges that need to be overcome for patients to benefit from non-surgical treatments [10].

Comparison with Existing Literature

The study's findings are consistent with global research demonstrating the superior efficacy of PFMT in managing UI among postmenopausal women [6, 9].

Pharmacotherapy's effectiveness aligns with studies highlighting the role of antimuscarinics and beta-3 adrenergic agonists in improving bladder control [7, 10]. Behavioral interventions, though less impactful alone, are supported by literature emphasizing their role in promoting adherence and facilitating long-term behavior change [8, 11].

The combined approach of integrating PFMT, pharmacotherapy, and behavioral interventions could potentially offer even greater benefits, as suggested by studies advocating for a multimodal treatment strategy [10].

Clinical Implications and Further Direction for Public Health

Consequently, the study supports the inclusion of other noninvasive approaches into the routine management of UI among postmenopausal women. Therefore, PFMT, as being highly effective and meeting patients' preferences, should be selected as a priority and offered to a great extent. Pharmacotherapy can be viewed as an addition to PFMT, particularly for women with poor response to a program of pelvic floor muscle exercises. Behavioral approaches should be increasingly applied to enhance adherence and psychologically and behaviorally activate the patients with UI.

Policy Recommendations

Standardization of Treatment Protocols: Create and apply the rules of non-surgical treatments as a medical practice to achieve the organization's goals on clients streams.

Training and Education: Improve education formats on PFMT and behavioral treatments to healthcare providers, and raise the consumer's awareness about the effectiveness of PFMS.

Accessibility and Affordability: The following are key recommendations: Increase access and make successful payments for non-surgical treatments such as PFMT and pharmacotherapy by subsidizing insurance coverage and community health programs.

Addressing Stigma: Publicity about the types and causes of UI should be made in order to sensitize the society and encourage women with this condition to seek early treatment.

Research and Development: Encourage more studies on the late outcome of non-operative management and identify newer modalities pertaining to our culturally and economically constrained Pakistani women.

Limitations

There are several limitations in this research. Cross-sectional study design methods highly restrict the means by which causation between non-surgical therapies and UI outcomes can be determined. Though attempts were made to validate the results biochemically, the nature of the measurement used in the study means that there is bound to be a response bias. The research was hence done on women who sought care in urban hospitals; the results may not hold truth for rural women who cannot get non-surgical treatments. Furthermore, here also the interviews were only semi-structured and totally closed ended and conversely the interviews were only qualitative, which means they might be excluded from a multi-sided society point of view.

Conclusion

Conservative management measures, especially PFMT for the treatment of UI, are important in postmenopausal women in Pakistan. They help to decrease the number of UI episodes, improve the quality of life and have a high patency satisfaction level. Although they promote defragmentation and improve the computer's performance, user concerns about the utility's accessibility, fee, and social acceptability limit its use. Therefore, with the intervention of standardized protocols, training, and patients' awareness of these problems, the most efficient strategy regarding UI in postmenopausal women should be developed. Subsequent prospective investigations ought to be concerned with monitoring the outcomes of nonoperative interventions in the long run, as well as with determining measures to augment compliance with these kinds of procedures and their availability for a broad spectrum of sufferers.

References

1. Abrams P, Cardozo L, Khoury S, Wein A (2013) The ICS report on urinary incontinence.Neurourol Urodyn. 22:1-16.
2. Dumoulin C, Cacciari LP, Hay-Smith EJC (2018) Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. Cochrane Database Syst Rev.10: CD005654.

3. Subak LL, Wise J, Nygaard I, et al. (2003) Urinary incontinence in the United States: prevalence, trends, and risk factors. Am J Epidemiol. 157: 904-916.

4. Burgio KL, Norton P, Thompson C, et al. (2006) Behavioral therapy to decrease urgency incontinence in older women: a randomized clinical trial. JAMA. 295:1901-1908.

5. Bump RC, Mattiasson A, Barber MD, et al. (1996) A new view of female pelvic floor dysfunction. IUGA classification of female pelvic floor dysfunction. Int Urogynecol J Pelvic Floor Dysfunct. 7:207-214.

6. Dumoulin C, Hay-Smith EJC (2010) Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. Cochrane Database Syst Rev.CD005654.

7. Hay-Smith JC, Dumoulin C, Bø K (2011) Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. Cochrane Database Syst Rev. CD005654.

8. Bachmann K, Kock P, Brandes S (2005) Urinary incontinence in women: clinical guidelines. World J Urol. 23:339-346.

9. Bø K, Dumoulin C, Hay-Smith J, et al. (2008) Systematic review of effectiveness of pelvic floor muscle training versus no treatment or inactive control treatments in the management of urinary incontinence in women. Br J Sports Med. 42:373-385.

10. Nygaard I, Swift SE, Burgio KL, et al. (2003) Stress incontinence: epidemiology and predictors of surgical intervention. Epidemiol Rev. 25:104-113.

11. Subak LL, Bushnell DM, McKinlay JB (2000) Overactive bladder in middle-aged women: prevalence and risk factors. Am J Epidemiol. 152:323-332.

12. Bø K, Nygaard I, Oelke M, et al. (2006) Behavioral therapy to decrease urgency incontinence in older women: a randomized clinical trial. JAMA. 295:1901-1908.