

Effect of Bladder Retraining Therapy on Urinary Incontinence among Female Senior Citizens



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Abstract

Urinary incontinence is a social problem and may affect women at any age, associated with serious social implications, causing discomfort, loss of self-confidence and negative interference in quality of life (QoL) of several females. The present study was conducted to find out the effect of bladder retraining therapy on urinary incontinence among incontinent female senior citizens in selected old age homes in Indore. Women were screened using the International consultation on Incontinence, (ICIQ-FLUTS) standardised questionnaire. Consent was taken and confidentiality was maintained throughout the study. Pre test was done using the ICIQ-FLUTS standardised tool, a structured socio demographic questionnaire and a two day bladder diary was filled by the participants prior to the intervention. Average of the two day bladder diary UI frequency was taken to assess the frequency of urinary incontinence. Total of 36 samples that fulfilled the inclusion criteria were conveniently assigned to experimental and control group using non probability sampling technique. Participants in the experimental group were taught and made to do Kegel exercises for a period of three weeks. Data collected revealed that there was a significant reduction in severity and frequency of urinary incontinence among the experimental group at t17= 13.54 and t17= 9.46 respectively at the level of $p < 0.001$. Comparison of the post test mean scores in experimental and control group showed that there is a significant difference in severity of UI at t38 = 5.25 and that of frequency of incontinence at t38 = 4.77 at the level of $p < 0.001$. Findings indicate that bladder retraining therapy is effective in reducing urinary incontinence among female senior citizens. It also highlights the need and importance of early recognition and reporting of incontinence symptoms to physicians for prevention or early treatment.

Keywords: Urinary incontinence(UI), Bladder retraining therapy, Kegel exercises, ICIQ-FLUTS questionnaire, Bladder diary.

Background

Urinary incontinence (UI) is defined by the International Continence Society as the involuntary loss of urine, which is a social or hygienic problem and may affect women at any age.¹

Urinary incontinence often causes loss of self esteem, social isolation and restriction of normal activity. Older people and their families find it difficult to manage the urinary incontinence at home, and urinary incontinence has been reported to play a major role in the decision to place older people in a nursing home.²

Behavioral interventions involve educating incontinent

persons and provide positive reinforcement for progress. Surgery is effective in treating stress urinary incontinence, but it is not without risks; medications such as anticholinergics and antispasmodic have adverse effects: however, behavioral interventions such as pelvic floor muscle exercises and bladder training have potential benefits with few risks and no side effects. Pelvic muscle exercises, initiated by Kegel in 1948, strengthen the tone and contraction of periurethral and pelvic floor muscles. Pelvic muscle exercises (Kegel exercises) have been found to be efficacious for stress incontinence³, and also for urge incontinence.⁴

Many studies over the years have supported the success

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of bladder retraining programs for both women and men experiencing symptoms of urge incontinence and urgency associated with overactive bladder (OAB).⁵

Need of the Study & Literature Review

Many women do not seek medical care for this condition, since they often believe that urinary loss symptoms do not demand care or are not sufficiently intense to disturb them; moreover, many patients have no free time to make an appointment with a specialist.¹

The prevalence of urinary incontinence (UI) and overactive bladder rises with age, and elderly people are the fastest-growing segment of the population. Many elderly people assume UI is a normal part of the aging process and do not report it to their doctors, who must therefore make the effort to elicit the information from them. Coexisting medical problems in older patients and the multiple medications many of them take, makes diagnosis and treatment more complex in this population. Just as the etiology of incontinence is often multifactorial, the treatment approach may need to be multipronged, with behavioral, environmental, and medical components; in any case, it must be targeted to the individual patient.⁶

UI interferes directly with the activities of daily living of females and they present low Quality Of Life (QoL) rates. Hence, when these individuals seek care, they already present low self-esteem and depression, are very anguished and disturbed by urinary loss. There is a need to raise awareness of women, mainly the post-menopausal ones, about the benefits of seeking medical treatment for UI, in order to improve their QoL.¹

The lower urinary tract consists of a group of interrelated structures that function in the adult to bring about efficient and low-pressure bladder filling and low-pressure urine storage with perfect continence. Urinary dysfunction is the most prevalent problem in the geriatric population, particularly among those admitted to nursing homes (with a prevalence estimated up to 67%). Most urinary dysfunction in the elderly is attributable to lower urinary tract disorders, with incontinence the predominant symptom. Incontinence alone has been shown to occur in up to 30% of the community-dwelling and 50% of the institutionalized elderly.⁷

Bladder suppressant medications are added only as

necessary, to augment rather than supplant the toileting regimen. The urologist's goal in treating overactive bladder (OAB) and incontinence in the elderly is to restore a socially acceptable level of urinary continence, requiring the minimal use of pads.⁸

Available data suggest that many women do not seek treatment for incontinence. In a study it was revealed that only 56% of women with urinary incontinence had ever discussed the condition with a physician. The severity of incontinence symptoms influences a woman's use of coping strategies and willingness to discuss the symptoms with a physician which is not surprising. Fewer than 20% of women with mild symptoms report discussing incontinence with a physician within the past year. The proportion increases to 42% of women with severe symptoms.⁹

Women who do Kegel's exercises are more likely to improve and even cure their incontinence. These women had fewer leakage problems a day and said their quality of life was better.¹⁰

The purpose of the study done by Higa¹¹ in Brazil was to identify and analyze studies in health literature about the psychocultural meanings reported by women who experience urinary incontinence (UI). The articles were grouped in three categories defined as significant: according to age experiences, cultural-religious experiences and experiences in self-care. The studies revealed that the degree of anguish and the range of the difficulties experienced are related both with age, ethnic group or religion and with the perception each individual has of her incontinence, which will lead to different levels of emotional disorders and to seeking (or not seeking) treatment. Besides, barriers regarding self-care are perceived. It is concluded that the UI may cause suffering and incontinent women have difficulties to deal with this problem.

Bladder retraining therapy is the most preferred method in managing urinary incontinence most commonly occurring in elderly females and advised by many physicians worldwide. This non pharmacological, non invasive method of intervention captured the researcher's interest to assess the effectiveness of bladder retraining among elderly women who are incontinent yet hesitant to reveal and in turn affecting their health and quality of life as well. In addition, it is an easy

method to practice and economical to follow by all age groups. This would pave the way to satisfactory "no dribbling quality life".

Problem Statement

A Quasi experimental study to assess the effectiveness of video assisted bladder retraining therapy on urinary incontinence among female senior citizens at old age homes, Indore during the year 2014-2015

Objectives

- Screen female senior citizens residing at old age homes for urinary incontinence.
- Assess the urinary incontinence in experimental and control group of female senior citizens residing at old age homes.
- Determine the effectiveness of bladder retraining on urinary incontinence in the experimental group of female senior citizens in comparison with control group.
- Find out the association between the pre interventional urinary incontinence with their selected socio demographic variables of female senior citizens.

Hypotheses

H1: There is a significant difference in severity of urinary incontinence among experimental group of female senior citizens after implementing bladder retraining therapy at $p \leq 0.05$ level of significance.

H2: There is a significant difference in frequency of urinary incontinence among experimental group of female senior citizens after implementing bladder retraining therapy at $p \leq 0.05$ level of significance.

H3: There is significant difference in severity of urinary incontinence among experimental and control group of female senior citizens after implementing bladder retraining therapy at $p \leq 0.05$ level of significance.

H4: There is significant difference in frequency of urinary incontinence among experimental and control group of female senior citizens after implementing bladder retraining therapy at $p \leq 0.05$ level of significance.

H5: There is a significant association between urinary

incontinence in female senior citizens with their selected socio demographic variables at $p \leq 0.05$ level of significance.

H6: There is a significant association between urinary incontinence in female senior citizens with their selected clinical variables at $p \leq 0.05$ level of significance.

Research Methodology

Research Design: The research design selected for this study was Quasi experimental non randomized control group design. The design was intended to measure urinary incontinence before and after the intervention (bladder retraining Kegel exercise).

Target population In the present study, the target population were the incontinent elderly women.

Accessible population The accessible population were incontinent elderly women from Mahila Utkarsh, Amar Sewa Ashram and Shri Jagannath old age home.

Sample: 36 female senior citizens with urinary incontinence.

Sampling Technique: The limited availability and the need to screen the subjects for meeting the criteria made the investigator to adopt convenient sampling technique.

Development and Description of Tool

The tool used in this study contained:

Section A: Socio demographic data: This section consisted of 9 questions for collecting information about selected demographic variables such as age, educational status, marital status, bowel habits, and parity.

Section B: Clinical details: This section consisted of 7 questions to collect information about the clinical details of the participant. It included information related to associated co morbid conditions, medications, surgical history, UTI, prolapse and further general sub questions related to complaint of urinary incontinence.

Section C: International Consultation on Incontinence Questionnaire - Female Lower Urinary Tract Symptoms : The ICIQ-FLUTS is a questionnaire for evaluating female lower urinary tract symptoms in research and clinical practice. This questionnaire is of used to screen for lower urinary tract dysfunction.

It has 12 items which collect symptomatic information regarding Nocturia, Urgency, Bladder pain, Frequency, Hesitancy, Straining, Intermittency, Urge urinary incontinence, Frequency of urinary incontinence, Stress urinary incontinence, Unexplained urinary incontinence and Nocturnal enuresis respectively. The investigator used the incontinence part of the questionnaire to screen and evaluate for urinary incontinence.

Section D: Bladder Diary: It included a patient generated log of liquid intake and urine output usually maintained over a 24 hour period to evaluate urinary frequency, urgency and incontinence. It contained 6 items which included time, intake of drinks, trips to bathroom, accidental leak, urge and activity at the time of leak maintained for two days each before and after the intervention.

Validation of Tool: Grade A validity established with rigour in several data sets according to ICI grades of recommendation for ICIQ FLUTS questionnaire. The tool and content along with the criteria checklist was submitted to 6 experts in the field of medical surgical nursing, medicine, physiotherapy and consultants in the field of gynaecology and urology. The experts were requested to check for the relevance, sequence, and language of the tool. Minor modifications were done in the section A, B and D according to their opinion the final tool was developed. The tool was also translated in Hindi for the feasibility of the samples.

Reliability: Reliability and responsiveness ($.71 < r < .82$) was established with rigour in several data sets according to ICI grades of recommendation for ICIQ FLUTS questionnaire.

Pilot study: Pilot study was conducted from 16th Feb to 14th March 2015 in Aastha Aashram, Pardesipura, Indore. Purpose was explained and confidentiality was assured to the participants. During the pilot study the investigator felt the need for individual intervention rather than a group approach. The analysis of the pilot study revealed the objectives of the study could be fulfilled based on which the investigator proceeded with actual data collection for the main study.

Procedure for Data Collection: Written permission was obtained from the administrative authorities of 3 old age homes in Indore namely the Mahila Utkarsh Ashram,

Amar Sewa Ashram and Shri Jagannath Aashram prior to the data collection.

The period of data collection was from 23rd March to 15th May 2015. The procedure for data collection was divided into pre procedure, procedure and follow up.

Pre-procedure:

- A week of maintaining IPR and warm up sessions with all the members in old age homes.
- Common discussions done room wise to gain the confidence of the elderly women residing in old age homes.
- Screening done using the questionnaire and through available medical records.
- Incontinent Women fulfilling the inclusion criteria were explained the procedure and informed consent was taken in the language they understood.
- Samples were divided into experimental and control group.
- Each sample was asked to fill in two days of bladder diary.

Procedure:

- Each sample was given three sessions of Kegel exercise, each in the morning, afternoon and evening time. Each session included 10 contractions wherein each contraction of 3 seconds was followed by 6 seconds of relaxation thus taking four and a half minutes of intervention per day per individual daily for 3 consecutive weeks.
- For administering the bladder retraining Kegel exercise, the experimental group of female senior citizens was made to assemble and a presentation was done by the researcher to direct the intervention of bladder retraining.

Post procedure and follow up:

- All the sessions were taken in the presence of the investigator except on Sundays.
- A team leader was selected and given phone reminders if a session was not led by the investigator.
- Team leader was made accessible to the presentation installed in the old age home computers

and was provided with a booklet on Kegel exercises prepared by the researcher to lead the session.

- Control group of the sample were also given the training class and demonstration post intervention period.
- Termination phase concluded with a day of socializing, feedbacks and suggestions between the investigator and the authorities.

Findings

Section I(a): Socio demographic variables of samples in Experimental and Control Group

In experimental group majority 13 samples were between the age group of 60-70 years and in the control group, 10 of the samples were in the age group of 71-80. None in both the groups were more than 90 years of age. Majority 12 in experimental and 14 in control group were widows. Majority in both groups were home makers with 11 in experimental and 15 in control group.

Equal number and majority 9 females in both groups reported constipation and 12 samples in experimental and control group complained of straining while passing stool. Majority 12 in experimental and 14 in control group respectively admitted not having any regular form of exercise.

Though majority 8 in the experimental group did not have any children, majority 5 of parous women in experimental and 12 in control group had parity equal or more than 3.

Maximum parous women were only 18 years or younger at first delivery with 4 subjects in experimental and 9 in control group respectively. Out of 36, parous women in both groups majority had deliveries at home with 4 subjects in experimental group and 7 in control group. Majority in both groups with 7 in experimental and 10 in control group had all normal vaginal deliveries. None of the parous women had ever done any antenatal exercises.

Of the parous women, only 3 in experimental group reported absence of any postnatal complications. 3 of them admitted had postnatal complications in the postnatal period after first delivery itself and 4 admitted had complications at subsequent postnatal periods.

In the control group majority did not have any postnatal

complications followed by 5 who had complications after first delivery itself.

Section I(b): Clinical variables of samples in Experimental and Control Group

Table No. 1: Frequency and percentage distribution of clinical profile of control and experimental group. (n₁=18, n₂=18)

Clinical profile	Experimental (n ₁ =18)		Control (n ₂ =18)	
	(f)	(%)	(f)	(%)
Associated medical condition				
Yes	12	66.7	13	72.2
No	6	33.3	5	27.8
Please specify				
Hypertension	9	50	8	44.4
DM	1	5.5	3	16.7
Both HTN and DM	1	5.5	1	5.5
Other conditions	1	5.5	1	5.5
None	6	33.3	5	27.8
Duration of UI symptoms (in years)				
< 5	8	44.4	6	33.3
5-10	10	55.6	12	66.7
History of surgical interventions				
Yes	11	61.1	10	55.6
No	7	38.9	8	44.4
Type of surgery done				
LSCS only	2	11.1	4	22.2
Hysterectomy only	1	5.5	2	11.1
D&C only	2	1.1	3	16.6
Other general abdominal surgeries	3	16.6	0	0
More than any one of the above	3	16.6	1	5.5
None	7	38.9	8	44.4
Duration of UI symptoms (in years)				
<5	8	44.4	6	33.3
5-10	10	55.6	12	66.7
Reported to a doctor				
Yes	2	11.1	3	16.7
No	16	88.9	15	83.3
Willing for non pharmacological treatment				
Yes	18	100	18	100
Any previous knowledge related to pelvic floor exercise?				
Yes	1	5.6	2	11.1
No	17	94.4	16	88.9

Data in Table no.1 reveals that majority subjects i.e. 12 in experimental and 13 in control group had associated medical illness, out of which majority 9 and 8 in experimental and control group respectively had High Blood Pressure.

It was found that 16 and 14 subjects in experimental and control group respectively preferred and had tea over coffee. Irrespective of the type of caffeinated drinks, majority 10 in the experimental group had 2 cups per day and 11 in control group had 11 cups per day.

Data makes evident that 11 in the experimental group and 10 in the control group had undergone surgical interventions of which 2 in the former and 4 in the latter had undergone L.S.C.S

Majority of the subjects reported that the onset of incontinence symptoms were felt 5 to 10 years back with 10 subjects in the experimental and 12 in the control group stating the fact.

Only 2 in experimental and 3 in control group had reported incontinence to a physician. All of them admitted that they need help and were willing for non pharmacological treatment if available.

Section II(a): Effectiveness of Bladder retraining therapy on severity of Urinary Incontinence

Table No.2(a) : Mean, mean difference, SD, SE, df and t value among experimental group for severity of urinary incontinence n₁=18

Group	Mean	Mean Diff.	SD	SE	df	't' value
Pre test	10.94	4.66	1.46	0.344	17	13.54
Post test	6.28					(S)***

p ≤ 0.05* p ≤ 0.01 p ≤ 0.001*** S Significant**

Data presented in table No.2(a) depicts the mean scores of severity of urinary incontinence in the experimental group with 10.94 in the pre test and 6.28 in the post test with a mean difference of 4.66. The SD was 1.46 with computed 't' value of 13.54 at the degree of freedom 17; the finding was highly significant at the level of p ≤ 0.001.

Section II(b): Effectiveness of Bladder retraining therapy on frequency of UI

Table No.2(b): Mean, mean difference, SD, SE, df and t value among experimental group for frequency of urinary incontinence (n₁=18)

Group	Mean	Mean Diff.	SD	SE	df	't' Value
Pre test	5.66	1.94	0.87	0.205	17	9.46
Post test	3.72					(S)***

p ≤ 0.05* p ≤ 0.01 p ≤ 0.001*** S Significant**

Data presented in table No.2(b) depicts the mean scores of frequency of urinary incontinence in the experimental group with 5.66 in the pre test and 3.72 in the post test with a mean difference of 1.94. The SD was 0.87 with computed 't' value of 9.46 at the degree of freedom 17; the finding was highly significant at the level of p ≤ 0.001.

Section III(a): Comparison of Post Test Score of severity of UI between Experimental and Control Group

Table No.3(a): Mean, mean difference, SD, SE, df and t value of Post test score among experimental and control group for severity of urinary incontinence

(n₁=18, n₂=18)

Group	Mean	Mean Diff.	SD	SE	df	't' Value
Experimental	6.28	3.78	2.17	0.72	38	5.25
Control	10.06					(S)***

p ≤ 0.05* p ≤ 0.01 p ≤ 0.001*** S Significant**

Data presented in table No. 3 depicts the post test mean scores of severity of urinary incontinence in the experimental and control group. Mean score for experimental group was 6.28 and for the control group was 10.06 which was 3.78 more than the experimental group. The SD was 2.17 with computed 't' value of 5.25 at the degree of freedom 38; the finding was highly significant at the level of p ≤ 0.001

Section III(b): Comparison of Post Test Score of frequency of UI between Experimental and Control Group

Table No. 3(b): Mean, mean difference, SD, SE, df and t value of post test score among experimental and control group for frequency of urinary incontinence

(n₁=18, n₂=18)

Group	Mean	Mean Diff.	SD	SE	df	't' Value
Experimental	3.72	2.22	1.41	0.465	38	4.77
Control	5.94					

p ≤ 0.05* p ≤ 0.01 p ≤ 0.001*** S Significant**

Data presented in table No. 3(b) depicts the post test mean scores of frequency of urinary incontinence in the experimental and control group. Mean score for experimental group was 3.72 and for the control group was 5.94 which was 2.22 more than the experimental group. The SD was 1.41 with computed 't' value of 4.77 at the degree of freedom 38; the finding was highly significant at the level of p ≤ 0.001

Section IV(a): Association between pre test severity of incontinence and selected socio demographic variables:

There was no significant association between pre test severity of incontinence and selected demographic variables like age, educational status, bowel habit, straining on passing stool and parity except age at first delivery (X²=20./32), and type of delivery (X²=18.8).

Section IV(b): Association between pre test severity of incontinence and selected clinical variables:

There was no significant association between pre test severity of incontinence and selected clinical variables like BMI, associated medical condition, history and type of surgery and type and amount of caffeinated drinks except reporting to a doctor (X²=6.523) and previous knowledge of pelvic exercises (X²=53.79).

Discussion

Effectiveness of bladder retraining on severity of

urinary incontinence:

After administering bladder retraining therapy for 3 weeks, the experimental group had a decrease of 4.66 in mean score of severity. Also t₁₇= 13.54 significant at p ≤ 0.001 showed that H1-i.e. there is a significant difference in severity of urinary incontinence among experimental group of female senior citizens after implementing bladder retraining therapy at p ≤ 0.05 was accepted.

The study showed that there was good effect of intervention on reducing severity of urinary incontinence. The t value for post test score comparing the effect of intervention between experimental and control group t₃₈= 5.25 was significant at the level of p ≤ 0.001.

These values showed that there was a noticeable reduction in the severity of urinary incontinence in the experimental group after the intervention of bladder retraining for 3 weeks.

On the basis of above findings, H3 - There is significant difference in severity of urinary incontinence among experimental and control group of female senior citizens after implementing bladder retraining therapy at p ≤ 0.05 was accepted.

The above findings were supported by the study done by Kumar A (2008)¹² on Effectiveness of Pelvic Floor Muscle Exercise and Bladder Training in Stress Urinary Incontinence in India. Patients with stress urinary incontinence previously diagnosed by the physician were included in the study. Variables such as age, sex, height, body weight and body mass index were evaluated. Result showed a significant improvement in urinary incontinence at the end of the intervention (p < 0.05). Mean improvement in incontinence was 8.04 ± 1.02. It was proposed that conservative treatment including pelvic floor muscle strengthening may be effective as well as easily manageable in management of stress urinary incontinence.

Effectiveness of bladder retraining on frequency of urinary incontinence:

After administering bladder retraining therapy for 3 weeks, the experimental group had a decrease of 1.94 in mean score of frequency of UI. Also t₁₇= 9.46 significant at

$p \leq 0.001$ showed that H2 i.e. there is a significant difference in frequency of urinary incontinence among experimental group after implementing bladder retraining therapy at $p \leq 0.05$ was accepted.

The study also showed that there was good effect of intervention on reducing frequency of urinary incontinence. The t value for post test score comparing the effect of intervention between experimental and control group $t_{38} = 4.77$ was significant at the level of $p \leq 0.001$.

These values showed that there was a reduction in the frequency of urinary incontinence in the experimental group after the intervention of bladder retraining for 3 weeks. On the basis of above findings, H4 i.e. there is significant difference in frequency of urinary incontinence among experimental and control group after implementing bladder retraining therapy at $p \leq 0.05$ was accepted.

The above findings were supported by a study conducted by Janssen (2011)¹³ in Netherland to assess the effects of non pharmacological treatments of urinary incontinence. A total of 110 women who had reported urinary incontinence to their general practitioners were randomly assigned to a treatment or control group. Treatment consisted of pelvic floor exercises in the case of stress incontinence and bladder training in the case of urge incontinence. After 3 months about 60% of the patients were either dry or only mildly incontinent; the mean number of wet episodes had gone down from 20 to 7, and 74% of the women felt improved or cured. These results were later corroborated by the control group. After 12 months this successful outcome was improved slightly further. The effect of this treatment continues after one year.

Conclusion

Problems of incontinence in the elderly should not be considered a normal process of ageing. Rather it can be effectively treated with behavioural changes through which improvement in quality of life and self-esteem is an attainable goal.

While concluding phase of the present study, the

researcher felt that the overall experience was filled with learning and also opened eyes of the researcher to the life faced by elderly as they struggle with their physiological and pathological changes. The researcher strongly felt that elderly residents in old age homes or even persons being cared for by family caregivers often have urinary incontinence that can be significantly improved or cured.

Persons with urinary incontinence should be alerted to the importance of reporting their symptoms to a health care professional and of asserting their right to proper assessment, diagnosis, and treatment. The first steps to treatment are acknowledgment of the problem and appropriate assessment and diagnosis.

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