

# Effect of Behavioral Therapy on the Quality of Life of Women Suffering from over Active Bladder Syndrome in Academic Family Practice Center, Suez Canal University Hospital, Egypt

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## Abstract

**Background:** Behavioral therapy is the front-line treatment for women with Over Active Bladder. These treatments, especially lifestyle interventions, offered to patients in the primary care setting before or with medication therapy. **Aim:** To assess the quality of Life of women with over active bladder syndrome (pre & post the behavioral therapy). **Subjects and Methods:** A quasi-experimental intervention study design with pre-post assessment implemented to assess the effect of behavioral therapy on QOL of 25 women with OAB, treated with the behavioral therapy for 12 weeks. The study conducted in academic Family practice center affiliated to Suez Canal University Hospital. **Results:** twenty-five women with OAB were included. The mean age of women was 52 years old. Equal distribution of married & unmarried women reported. The majority of women were multi-parous with vaginal delivery predominance, and slight CS increase. Regarding pre- post-intervention symptoms of over-active bladder among women treated with the behavioral therapy, there was a statistically significant post-intervention improvement in all symptoms. Concerning pre-post-intervention scores of King's Health Questionnaire among women in the behavioral therapy; there were statistically significant post-intervention improvements at all domains of King's Health Questionnaire for the quality of life. **Conclusion:** behavioral therapy has significant positive effect on women quality of life and symptoms.

**Keywords:** Overactive bladder, Quality of Life, Behavioral therapy

## Introduction

Many women throughout the world suffer from overactive bladder (OAB) syndrome. Using the definition of the International Continence Society (ICS), the reported median prevalence of incontinence in women is 23.5% (range 14-40.5%)<sup>(1)</sup>. Overactive Bladder (OAB) is a highly prevalent condition that is associated with considerable Quality Of Life (QOL), medical, and eco-

nomical effects<sup>(2)</sup>. The International Continence Society defined Overactive Bladder (OAB) as a syndrome of urgency with or without urge incontinence, associated with increased frequency of micturition<sup>(3)</sup>. The symptoms of OAB and the coping strategies used to manage symptoms affect interactions with friends, and families. Psychological effects of OAB include fear, shame, and guilt. In elderly people, OAB place a burden on family members if they

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need assistance with toileting, shopping for protective undergarments, and laundry. Worries and concerns regarding odor, uncleanliness, and leakage during sexual activity may lead individuals to refrain from sexual relationship<sup>(4)</sup>. There is a range of health care providers who could begin management of the OAB patient initially by including a physician assistant, nurse practitioner, continence advisor, general practitioner, family practitioner, internal medicine specialist, urologist, or gynecologist<sup>(5)</sup>. Before embarking on treatment, the physician considers whether the patient needs treatment or not. Therefore, initiation of treatment revolves around the issue of how much the condition affects the patient's quality of life. A treatment developed for managing OAB primarily involves a combination of behavioral modification and drug therapy<sup>(6)</sup>. Behavioral therapy should be a part of the initial management of every case of OAB. The most common interpretation of behavioral modification of OAB includes a range of strategies (education reinforcement, delayed voiding, charts diaries, timed voiding, fluid diet management and pelvic floor exercise (PFE) bio-feedback)<sup>(5,7)</sup>. Pelvic floor muscle (PFM) exercises to treat urinary incontinence were first described in 1948 by Kegel who recommended performing as many as 300 to 400 pelvic floor muscle contractions daily<sup>(8)</sup>. The conservative treatment intervention of OAB resulted in a greater increase in compliance with medication. It also resulted in a significantly increased use of behavior modification therapies and better self-perception of treatment outcome<sup>(9)</sup>. The International Consultation on Incontinence (ICI) guidelines state that when the first line approach is not (fully) satisfactory or fails after 8–12 weeks, alternative therapies should be considered<sup>(10,11)</sup>. Management of OAB can decrease the economic impact of OAB. Two studies have

demonstrated a cost-savings related to medical management of OAB. In both studies, savings can be achieved by reducing comorbidities, such as urinary tract infections, skin infection and irritation<sup>(12)</sup>. In order to improve the quality of medical care, an assessment of patients' quality of life (QOL) recognized to be important as well as assessment of physical impairment. OAB is underreported, and under-treated condition that significantly affects the quality of life (QOL) and is associated with enormous related costs. Therefore, in this study we assessed the effect of behavioral therapy on quality of life for women with over active bladder syndrome.

## Patients and Methods

### Patients

A quasi-experimental intervention study design with pre-post assessment used to assess the effect of behavioral therapy on quality of life for women with overactive bladder syndrome in Fanara family practice center -Ismailia governorate, who were diagnosed by an Overactive Bladder Screener in a Primary Care Patient Population<sup>(13)</sup>. This pre-post intervention study carried out in 25 women aged more than 18 years old attended to Fanara family practice center diagnosed as over active bladder. Women excluded if having any Urinary tract infection (by urine analysis & urine culture and sensitivity), proven bladder pathology (e.g. stones) by ultrasound, patients with bleeding tendency, patients who are pregnant or planning to become pregnant during the duration of the treatment, Patients with previous pelvic operations, and no history of previous medications for OAB.

### Methods

A convenience sample recruited from women attending academic family practice. One hundred twenty four Females

above 18 were included in the study and were interviewed about urinary incontinence. Twenty five females were diagnosed with overactive bladder and treated with behavioral therapy thus the frequency of OAB in the sample was 20%. After screening by Overactive Bladder Screener in a Primary Care Patient Population<sup>(13)</sup>, physical examination and investigations were done to confirm OAB diagnosis. Patients diagnosed with overactive bladder had their quality of life investigated by The King's Health Questionnaire (KHQ)<sup>(14)</sup> before and after the completion of behavioral therapy. King's Health Questionnaire (KHQ) featuring 21 items with three major sections (general health perceptions, symptom bothering and quality of life), and nine domains (general health, Incontinence Impact on Quality of life, role limitation, physical limitations, social limitations, personal limitations, emotional problems, sleep/ energy disturbance, and severity measures)<sup>(14)</sup>. The King's Health Questionnaire translated into Arabic, by a bilingual consultant, for necessary modifications, restatement, and rewording.

#### *The pilot study*

A pilot study was conducted on 10 patients as follow:

*Planning Phase:* upon securing official permissions, the researcher started data collection process from the participants using the designed tool.

*Sampling method and Implementation Phase:* A convenience sample was recruited, One hundred twenty four Females above 18 years old, 25 of them diagnosed with overactive bladder and treated with behavioral therapy and another 25 female having Overactive bladder, treated with Tolterodine but with no improvement.

*Evaluation phase:* After 12 weeks of behavioral therapy, re-assessing the effect of behavioral therapy and Tolterodine on HRQL (Health Related Quality Of Life) using the King's Health Questionnaire (KHQ)<sup>(14)</sup>. All patients' data rec-

orded including address & phone number. If patient missed an appointment, telephone call or home visits by the researcher, if possible, to assure patient compliance. Those who were not responding to treatment referred to urologist.

#### *Technique of Behavioral therapy program:*

The group was counseled to perform the following behavioral training program for 12 weeks. Three private clinical sessions (one per month) performed during the study period to receive the guidance on pelvic exercise to strength the pelvic floor muscle and to review the voiding habits. Then re-evaluated, using the King's Health Questionnaire (KHQ). The components of the behavioral therapy were; education reinforcement, fluid, diet management, Pelvic floor exercise (PFE), face to face education talks and bladder diary chart.

#### **Statistical analysis**

Data entry and statistical analysis done, using SPSS 16.0. Statistical Software Package. Data was presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Quantitative continuous data was compared using the non-parametric Mann-Whitney test. Qualitative categorical variables compared using chi-square test. Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead. In larger than 2x2 cross-tables, no test could be applied whenever the expected value in 10% or more of the cells was less than 5. Spearman rank correlation analysis was used for assessment of the inter-relationships among quantitative variables and ranked ones. Statistical significance was considered at p-value <0.05.

#### **Results**

Socio-demographic characteristics of the studied women with OAB is demonstrated in (Table 1).

**Table 1:** Socio-demographic characteristics of the studied women

	Women with OAB (n=25)	
	No.	%
Age (Yrs):		
<60	14	56
60+	11	44
Mean±SD	52 ± 17	
Residence:		
Rural	19	76
Urban	6	24
Marital status:		
Married	20	80
Divorced	1	4
Widow	4	16
No. of marriages:		
One	24	96
Two	1	4
Duration of marriage (Yrs):		
<20	11	44
20+	14	56
Mean±SD	26.0±15.8	
Education:		
Illiterate	7	28
Read/write	5	20
Primary education	3	12
Secondary education	5	20
University education	5	20
Job status:		
Housewife/unemployed	19	76
Working	6	24

The majority of women were living in rural areas. Equal distribution of married and unmarried women was reported. There was a slightly lower percentage of educated women. The majority of women were multi-parous with vaginal delivery predominance. There was a statistically significant post-intervention improvement in all overactive bladder symptoms among women treated with the behavioral therapy (Table 2). The pre-post-intervention scores of King' Health questionnaire among women in the behavioral therapy are demonstrated in Table 3. There were statistically significant post-intervention

improvements at all domains of King's Health Questionnaire for the quality of life.

## Discussion

The present study was conducted to assess the effect of behavioral therapy on quality of life for women with OAB. The study used a quasi-experimental intervention design with pre-post assessment. 25 women with OAB were treated with the behavioral therapy for 12 weeks. Our analyses confirmed psychometric properties and clinical validity of the King's Health Questionnaire in agreement with multiple versions, which appears to offer a valid and reliable Health.Women treated with behavioural therapy showed decreased prevalence of nocturnal micturation, urgency, urinary incontinence (76% each), and the use of pads (60%). These findings disagreed with Finnish study who found that urgency was reported by more than 50% of respondents, whereas UUI was noted by 25.7% of females and the authors found that increased severity of urgency and UUI is associated with a statistically significant and clinically important decrease in HRQL<sup>(15)</sup>. The discrepancies from ours may be related to the study design that involved follow-up in their study. The present study reported a statistically significant post-intervention improvement in all symptoms (frequency of daytime micturation, frequency of nocturnal micturation, frequency of urgency micturation, and frequency of pads use). A mean of 58.9% reduction of incontinence episodes frequency of day time, (p=.001) which agreed with Burgio et al. who found that reduction of incontinence was most pronounced early in treatment and progressed more gradually thereafter<sup>(16)</sup>. Another study by Fantl et al. observed that episodes of incontinence decreased by a mean of 57% in women aged 55 years and older who underwent bladder training

**Table 2:** Pre- post-intervention symptoms of overactive bladder among women after behavioral therapy

	Phase		MW test	p-value
	Pre	Post		
Frequency of daytime micturation	12.0 ± 3.9	7.1 ± 4.0	26.45	<0.001
Frequency of nocturnal micturation	3.3 ± 0.9	1.3 ± 0.5	26.05	<0.001
Frequency of urgency micturation	11.4 ± 4.2	5.8 ± 0.9	27.44	<0.001
Frequency of pads use	3.9 ± 0.5	1.0 ± 0.4	24.43	<0.001

Data are presented as mean±SD; MW test= Mann Whitney U Test, statistically-significant at p<0.05

**Table 3:** Pre-post-intervention scores of King' Health questionnaire among women after the behavioral therapy

	Time		MW test	p-value
	Pre	Post		
General health perception	66.0 ± 23.8	33.0 ± 20.1	18.81	<0.001
Incontinence impact	90.7 ± 20.5	53.3 ± 28.9	18.51	<0.001
Role limitations	66.7 ± 29.3	32.7 ± 21.8	16.23	<0.001
Physical limitations	80.0 ± 27.2	40.7 ± 18.7	19.91	<0.001
Social limitations	72.7 ± 29.2	40.0 ± 27.2	13.11	<0.001
Personal relationships	70.2 ± 33.1	40.0 ± 25.3	10.69	<0.001
Emotions	85.8 ± 20.7	43.1 ± 26.5	21.83	<0.001
Sleep/energy	90.0 ± 18.0	52.0 ± 24.7	22.08	<0.001
Severity measures	74.4 ± 31.0	41.9 ± 18.5	14.08	<0.001
Symptom severity	2.8 ± 0.4	1.5 ± 0.7	31.25	<0.001
Frequency	2.6 ± 0.8	1.4 ± 0.8	20.71	<0.001
Nocturia	2.8 ± 0.7	1.4 ± 0.9	24.61	<0.001
Urge incontinence	2.6 ± 0.8	1.3 ± 0.7	22.79	<0.001

Data are presented as mean±SD; MW test= Mann Whitney U Test, statistically-significant at p<0.05

compared with little improvement in a no-treatment control group<sup>(17)</sup>. Regarding the effect of Overactive bladder on quality of life (pre- intervention), we found that there was a negative effect of OAB on domains of the King's Health Questionnaire for the quality of life. These findings are consistent with MacDiarmid et al. who found that the severity and degree of bothering associated with the symptoms of OAB could directly influence a person's mobility, degree of social isolation, impairment in work-related activities, disruption of sleep, impairment of domestic and

sexual life, and result in depression. Patients may also develop extreme coping strategies including self-imposed fluid restrictions, avoidance of social events OAB not only affects the lives of patients, but also the lives of their caretakers and their QOL<sup>(18)</sup>. In the present study about 62% of women who had OAB reported that their symptoms had an effect on role limitations ,this was in congruence with Milsom et al. reported 67% of women who had OAB reported that their symptoms had an effect on daily living<sup>(19)</sup>. Researchers found that 60% of those who had

symptoms were bothersome enough to consult a medical practitioner. In fact, urgency was found to be significantly related to patients' quality of life<sup>(20)</sup>. In congruence with the present study findings, Abrams et al. reported that patients who had overactive bladder had a lower quality of life in the social and functional domains<sup>(21)</sup>. Kelleher et al. pointed out that many patients who have OAB tend to stop pursuing enjoyable social and physical activities. They also stated that overactive bladder and incontinence are also associated with adverse effects on sexual function. In addition, shame, and social withdrawal were reported<sup>(14)</sup>.

Concerning the effect of behavioural therapy on quality of life for women with OAB, we found statistical significant post-intervention improvements at all domains of King's Health Questionnaire for the quality of life except for personal relationship. Similarly, Wyman et al. demonstrated that Behavioral therapy modalities significantly improve the quality of life, specifically in the ability to carry out activities and relationships, to tolerate and control symptoms and in improved ability to cope<sup>(22)</sup>. Also, Rovner et al. concluded that behavioral therapy improve symptoms through identification of lifestyle habits and changing a person's behavior, environment or activity that are contributing factors or triggers<sup>(23)</sup>. Brown et al. stated improvement in pre-post intervention scores of King' Health Questionnaire regarding General health perception, nocturia, and social limitations among women in the behavioral therapy group<sup>(12)</sup>. In addition, bladder training significantly improved the quality of life, specifically in the ability to carry out activities and relationships, to tolerate and control symptoms and in improved ability to cope<sup>(22)</sup>.

## Conclusion

Overactive bladder affects the quality of life, and early detection and treatment through behavioral therapy is mandatory. The family physician can diagnose, manage OAB in his patients, as well as coordinate the care of subspecialists if necessary.

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