



**PREVALENCE OF OVERACTIVE BLADDER AMONG FEMALES OF KARACHI,  
PAKISTAN**

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**ABSTRACT**

Overactive Bladder or OAB is a condition that is chiefly experienced by the women, mostly in the later stages of life especially with regard to the reproductive health. The worldwide incidence of OAB is 11-19%. The focus of present study was to determine the prevalence of OAB in females and to study its associated risk factors. This study used a cross sectional research design. All healthy asymptomatic women between ages of 18-55years over a period of two years (Dec 2014 to Dec 2016) were included. The data were collected through completing two questionnaires. Symptoms suggestive of OAB were assessed using an OAB-screener questionnaire as adopted from the ICIQ (International consultation on incontinence questionnaire). The total prevalence of OAB was 39.2%, It is more prevalent in married women as compared to un-married (p value=0.031), the prevalence was high among those who were house hold, led sedentary lifestyle. Most of the women suffering from OAB had never consulted the doctors. Detailed study with respect to co morbidities can be beneficial to explore this emerging health issue and can be helpful in managing complications regarding it.

**KEYWORDS:** Overactive Bladder, Prevalence, Sedentary Lifestyle, Polyuria, Nocturia.

**INTRODUCTION**

Over Active bladder is a common disorder that adversely affects the quality of life in sufferers especially females and brings a large socioeconomic and healthburden.<sup>[1]</sup> OAB is defined by the International Continence Society (ICS) as urinary urgency, with or without urinary incontinence, usually with frequency and nocturia, in the absence of metabolic or pathological conditions<sup>[2]</sup> like urinary tract infection, polyuria, Transitional cell carcinoma of bladder or other underlying neurological abnormalities. Incontinence has a substantial influence on quality of life and activities of daily living, and has large resource implications for the health service and the individual. On the other hand, Urgency is the hallmark of OAB, is defined as the sudden compelling desire to urinate, a feeling difficult to control and it is usually due to involuntary detrusor contraction (detrusor overactivity) during bladder filling.<sup>[3]</sup>

There are many risk factors associated with OAB, such as advanced age, obesity, multiparity, Obstetrical events

(vaginal, instrumental vaginal deliveries and menopause. Literature shows that incontinence is associated with co morbidities which are associated with a range of lifestyle factors, including dietary salt, saturated fats, smoking and physical inactivity, and it has been suggested that dietary deficiencies of thiamine, folate and vitamin B12 may contribute to developing confusion and depression, particularly in the elderly.<sup>[4]</sup>

The worldwide incidence of OAB is 11-19%<sup>[5,6]</sup>, however, one epidemiological NOBLE study in the United States found the prevalence of OAB was 16.5%<sup>1</sup>. Another study was conducted by Milson et al in Europe has shown 16.6%<sup>2</sup>. Few studies are done in Pakistan at national level for OAB. One study was done at Liaquat National Hospital revealed high prevalence of OAB 23.3%<sup>3</sup>.

OAB is more prevalent in postmenopausal women; however, the prevalence in pre-menopausal women is not well established<sup>[7]</sup>. Few studies have published in

young and middle-aged population. The reason for the limitations of data is because this age group is reluctant to visit to health care professional for such symptoms as well as they assume problem is age or birth related.

Obesity is a very common risk factor for OAB, highly prevalent in our country and it is usually because of sedentary life style, lack of physical activity and consumption of carbohydrate rich diet. Our women are not aware that OAB are related with increase weight. They consider it normal or aging process They either ignore or adopt different coping mechanisms to manage their symptoms, e.g. bathroom mapping, voiding frequently, drinking less, restrict her social life, crossing their legs and wearing pads and diapers. Most of our women are unaware that effective therapies (behavioral and pharmacologic) are available and their problem could be solved by medical therapy.<sup>[5]</sup>

The paucity of studies in Pakistan motivated us to conduct study in women visiting to Abbasi Shaheed Hospital. Abbasi Shaheed Hospital, a big catchment area to research on this population.

The focus of present study was to determine the prevalence of OAB in females and to study its associated risk factors.

## MATERIALS AND METHODS

### *Design, Sampling and Setting*

This study used a cross sectional research design. Ethical approval was obtained from IRB. The clinical administrator provided written consent from the participating women. The participants were recruited from outdoor patients visiting for various gynecological problems as well as paramedical staff, birth attendants and indoor patients 'attendants coming to Abbasi shaheed hospital. All healthy asymptomatic women between ages of 18-55years over a period of two years (Dec 2014 to Dec 2016) were included. All women <18 and >55 years of age, and those diagnosed with or already treated for stress incontinence or OAB, neurological impairment or gynecological malignancy and those with a previous history of pelvic radiation, surgery for urinary incontinence, other major pelvic surgery, pregnancy and women during menstrual periods were excluded from the study.

The data were collected through completing two questionnaires followed by clinical examination for BMI, any pelvic organ prolapsed, stress incontinence and laboratory result of Random blood sugar and Urine detailed report. The demographic questionnaire design specifically for this study, included information regarding the subject's age, education, marital status, employment, parity, mode of deliveries, any medical disorders.

Symptoms suggestive of OAB were assessed using an OAB-screener questionnaire as adopted from the ICIQ (International consultation on incontinence questionnaire). The questionnaire contains 11 questions covering frequency, nocturia, weak urinary stream, urgency, incomplete emptying and hesitancy. Patients were considered to have OAB if their OAB score >8.10 Participants who did not complete the OAB questionnaire were excluded from the study.

Keeping in view, the multiethnic population visiting at Abbasi shaheed hospital, the questionnaire was translated to Urdu from English version and various interpreters were used to communicate with participants of study who did not understand Urdu.

## RESULTS

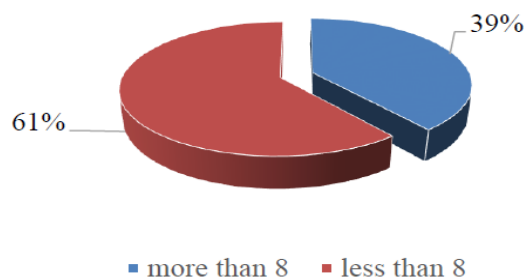
A Total of 380 participants were recruited. The demographic characteristics were shown in Table 1. The mean age was 36. Most of the participants were married 302(79.5%), and belonged to Urdu speaking community 298 (78.4%).

As far as literacy was concerned, 120(31.6%) participants were illiterate while 109(28.7%) were intermediate and graduate. Regarding working status, 296(77.9%) were household and two third of the participants 277(72.9%) had earned >13000 per month. When asked about dietary preference, almost two third of them, 223(58.7%), took carbohydrate rich diet. When life style reviewed, it was observed that 223(58.7%) led sedentary life style and one third took light to moderate exercises in their routine life. As far as medical disorder was concerned, most of the participants had no co-morbid but incidentally Hypertension was found in 60(15.8%) and Diabetes was present in 35(9.2%) of participants.

**Table. 1: Demographics.**

<b>Variables</b>	<b>N</b>	<b>Percentage (%)</b>
<b>Age groups</b>		
Less than 25	85	22.4
26-35	119	31.3
36-45	82	21.6
46-55	62	16.3
56-65	27	7.1
More than 65	5	1.3
<b>Ethnicity</b>		
urdu speaking	298	78.4
sindhi	1	0.3
pathan	45	11.8
punjabi	31	8.2
Balochi	5	1.3
<b>Literacy rate</b>		
illiterate	120	31.6
primary	52	13.7
secondary	34	8.9
matric	55	14.5
intermediate and more	109	28.7
<b>Employment Status</b>		
Unemployed	296	77.9
Employed Part time	65	17.1
Employed full time	19	5.0
<b>Monthly income status</b>		
Less than 13,000 Rs/-	103	27.1
More than 13,000 Rs/-	277	72.9
<b>Life style</b>		
Sedentary	223	58.7
Light exercise	117	30.8
Moderate/extreme	28	7.4
<b>Co- morbids</b>		
normal	7	1.8
diabetes	35	9.2
hypertension	60	15.8
TB	9	2.4
cardiac abnormalities	3	.8
migraine	20	5.3
none	246	64.7
<b>Obstetrical history</b>		
Nulliparous	112	29.5
Multiparous	160	42.1
Grand multiparous	108	28.4
<b>Stress incontinence</b>		
Present	166	43.7
Absent	214	56.3
<b>Urine DR</b>		
normal	237	62.4
pus cells	36	9.5
protein	57	15.0
combinations	50	13.2
<b>BMI</b>		
Underweight	1	0.3
Normal	127	33.4
Over Weight	110	28.9
Obese	77	20.3

Regarding obstetrical history, 160(42.1%) were multiparous, while 103(28.4%) were grand multiparous women. Among these participants, 266(70%) had spontaneous vaginal deliveries and only 13(3.5%) had instrumental vaginal deliveries and 54(14.2%) had cesarean sections. About 111(29.2%) were found hypertensive and 64(16.8%) were found to be diabetic incidentally. About 166(43.7%) had demonstrate stress incontinence and 36(9.5%) had asymptomatic UTI. When BMI was calculated most of the participants were overweight and obese 252 (66.3%).



**Figure 1: Prevalence of OAB as indicated by the OAB score.**

According to the results the total prevalence of OAB was found to be 39.2%, which was quite high.

**Table. 2: shows correlation of patient demographics (age, marital status, employment status etc.), clinical and laboratory parameters with prevalence of OAB.**

Variables	OAB Present (n)	OAB Not present (n)	p-value
<b>Age group</b>			
Less than 25	24	61	0.105
26-35	46	73	
36-45	38	44	
46-55	24	38	
56-65	15	12	
More than 65	2	3	
<b>Marital status</b>			
Unmarried	37	14	0.031
Married	184	118	
Divorced	0	2	
Widow	9	13	
Separated	1	2	
<b>Literacy rate</b>			
Illiterate	69	51	0.855
Primary	35	17	
Secondary	19	15	
matric	34	21	
intermediate and more	68	41	
<b>Employment status</b>			
Unemployed/household	172	124	0.090
Employed part time	44	21	
Employed full time	15	4	
<b>Monthly income status</b>			
less than 13,000 Rs/-	61	42	0.703
more than 13,000 Rs/-	170	107	
<b>Life style</b>			
Sedentary	126	97	0.025
lightly exercise	73	44	
moderate/extreme	24	4	
<b>Medical history</b>			
normal	5	2	0.034
diabetes	13	22	
hypertension	33	27	
TB	7	2	
cardiac abnormalities	3	0	
migraine	12	8	
none	158	88	

<b>Parity</b>			
Nulliparous	71	41	0.043
Multiparous	105	55	
grand multiparous	55	53	
<b>Blood pressure</b>			
140/90 or more	56	55	0.029
less than 140/90	160	85	
<b>Random sugar level</b>			
less than 140	197	101	0.000
140 or more	24	40	
<b>Stress incontinence</b>			
Present	77	89	0.000
Absent	154	60	
<b>Urine DR</b>			
Normal	150	87	0.011
pus cells	16	20	
Proteins	41	16	
Combinations	24	26	
<b>BMI</b>			
Underweight	1	0	0.527
normal weight	80	47	
Overweight	64	46	
Obese	86	56	

It was surprising that no significant association was found of OAB prevalence with age. It was equally prevalent in younger age as was in older age. There was an association of OAB with marital status. It is more prevalent in married women as compared to un-married (p value=0.031). Again, there was a significant association with physical activity. The prevalence was high among those who were house hold, led sedentary lifestyle as compared to those leading working life (p value=0.025). A very significant association was found with parity. OAB is highly prevalent in grand multiparous women as compared to those who were nulliparous (p value=0.043). Medical disorders have strong influence on the prevalence of OAB. As shown in table 2, OAB was highly prevalent in participants with medical diseases as compared to those had no co morbid (p value=0.034).

It was observed that BMI had no significant association with OAB prevalence. It was equally common in normal weight as those who were obese. Hypertensive disorders have a significant relationship with OAB prevalence. Those were found to be hypertensive, had high prevalence of OAB as compared to those were normotensive (p value=0.029).

A significant association was observed with stress incontinence. OAB was more prevalent in those participants, who had demonstrable stress incontinence (p value=0.000). A strong relationship was observed of hyperglycemia with OAB prevalence. OAB was more common in those participants, who were found to be hyperglycemic as compared to those with normal blood sugar levels (p value=0.000). Participants with asymptomatic UTI had more OAB symptoms as compared to those had normal urine d/r (p value=0.000).

## DISCUSSION

In this cross-sectional study, the total prevalence of OAB was 39.2% which is similar to study conducted in Malaysia<sup>11</sup>. Other studies conducted in European and United states showing prevalence rate between.<sup>[11]</sup> 8%-48.5% while in Asian countries such as Korea and Taiwan, it was between 6% and 19.8%.<sup>[12]</sup>

Advanced age has been consistently identified as a risk factor of OAB in many studies<sup>[13,14]</sup> but it was surprising that in our study OAB prevalence was not age related. It was as common in young age as it was in advanced age, suggesting that mechanism other than menopause may be involved.

Many observational studies have shown that parity has a very strong relationship with OAB.<sup>[15,16]</sup> Similar association also seen in our studies. The Grand multiparous had high prevalence of OAB. The reason was not clear but possible neuropathic changes sensitize the detrusor muscles of bladder in pregnancy.

Vaginal birth has an association with OAB and this was proved by many studies<sup>[17]</sup> but our study has shown contrast result. OAB was as common in those women delivered vaginally as those had cesarean sections. Studies have shown that many medical disorders like Hypertension and Diabetes affect the prevalence of OAB. The possible path physiology could be use of diuretics or complications like stroke affect urinary symptoms and autonomic neuropathy affect bladderfunction.<sup>[18,19]</sup> Our study has shown similar result, women with these co morbidities has shown a significant association with OAB.

Increased weight and obesity has a strong influence on OAB prevalence. Many studies published have shown that obesity has a strong association with OAB prevalence.<sup>[20]</sup> The reasons are due to increased pressure on the bladder and greater urethral mobility. But there was no study reported that weight loss improved OAB symptoms. In concordance with result reported by Stewart et al<sup>[21]</sup> we did not find any association of OAB with obesity. OAB was equally prevalent in normal weight and overweight and obese participants. The life style of women has an impact on bladder activity. A cross sectional study conducted in the United States revealed that OAB symptoms were less likely to report in those who did moderate to vigorous physical activities while symptoms of OAB were associated with limited physical activities.<sup>[22]</sup> Our study were the same result but more research is needed to further evaluate how OAB affect physical activities.

In our study participants with asymptomatic UTI showed greater OAB symptoms as compared to those who had normal urine D/R. Our results were also supported by previous studies that showed strong association between OAB and other morbidities, including UTIs and skin infections, sleep disturbances, and depression etc. Such relationships also may be associated with increased morbidity, mortality, impaired quality of life, and increased economic costs.<sup>[23]</sup>

Symptoms of stress incontinence, urge incontinence and an overactive bladder are more prevalent in young population. However, when compared with urge incontinence, the symptoms of an OAB similarly reduced the quality of life, but stress incontinence did not significantly affect the quality of life. Our study has shown similar result. Stress incontinence was present in participants with OAB as compared to those who did not had OAB, but it did not affect quality of life.<sup>[24]</sup>

## CONCLUSION

Urinary incontinence is considered as a problem of middle and old age women only. But in young women childbirth, injuries and medical conditions like Diabetes and Hypertension can also lead to bladder control issues. The overactive bladder was frequently reported in young women that may be due to their lifestyle activities. Dietary habits, sedentary life style, Obesity, hypertension and diabetes can also cause urinary incontinence at young age. The detailed study with respect to these symptoms and other co morbidities can be beneficial to explore this emerging health issue and can be helpful in managing complications regarding it. It was found that most of the women suffering from OAB had never consulted the doctors because of this reason; we would suggest that any woman visiting a doctor for any ailment should be inquired for the symptoms of OAB and treated for the same. As most of the women were married and parous, it is the responsibility of an Obstetrician to counsel them regarding awareness of symptoms of OAB, their management strategies by changing their life style.

## Limitations

- Language barrier- there was difficulty in communication with people or groups speaking in different languages.
- Participants were reluctant conscious to give blood and urine samples.

## CONFLICT OF INTEREST

There was no Conflict of Interest among authors.

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