

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20172302>

Original Research Article

Prevalence of overactive bladder symptoms and urinary incontinence in a tertiary care hospital in Egypt

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Received: 15 April 2017

Accepted: 08 May 2017

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ABSTRACT

Background: The current study aims to estimate the prevalence of Overactive bladder (OAB) and urinary incontinence (UI) among women attending Assiut Woman's Health Hospital. Additionally, to explore the impact of UI and OAB on The Quality of Life (QOL) of women.

Methods: A population-based survey included participants aged 18 years and older selected from Assiut Woman's Health Hospital and received The Bristol Female Lower Urinary Tract Symptoms Questionnaire (BFLUTSQ). OAB was defined in to two versions using the international continence society (ICS) definition of 2002 as either urgency sometimes or more alone (OAB1) or urgency sometimes or more with frequency more than eight times per day and /or nocturia once or more per night (OAB2). Incontinence and other LUTS were positive if answer scores ≥ 2 to BFLUTSQ question for incontinence and other LUTS.

Results: The total prevalence of OAB was 39.0% (351 women). The prevalence of OAB dry and OAB wet was 26% (234 women) and 13% (117 women), respectively, which suggested that 66.7% suffer from OAB dry and 33.3% suffer from OAB wet. The prevalence of dry OAB is significantly higher than wet OAB. The overall prevalence of UI was 22.2% (201 women). The prevalence of stress UI, urge UI and mixed UI was 5.7%, 5.1% and 11.4%, respectively.

Conclusions: OAB symptoms and UI are highly prevalent. Furthermore, both of them have severe effects on daily and sexual life as well as being related to psychological symptoms such as anxiety and depression.

Keywords: Lower urinary tract, Overactive bladder, Stress incontinence, Urinary incontinence

INTRODUCTION

The overactive bladder (OAB) is a highly prevalent disorder that impacts the lives of millions of people worldwide. Despite its high prevalence, many sufferers do not seek medical attention and are not aware that OAB is treatable.¹ Micturition disorders are responsible for increased morbidity throughout the world. This morbidity ranges from worrisome symptoms to life-threatening renal failure. Disturbances in voiding may sign neurological, metabolic, inflammatory, or infectious

diseases. Voiding dysfunction may also arise from injury, outlet obstruction, structure changes in the bladder and urethra or loss of their supporting structures with aging.²

Research on urinary storage problems has focused on incontinence in women, but during last years, other urinary storage problems (urgency, frequency, and nocturia) has commanded attention worldwide.³ The prevalence of OAB is variable ranging from 3% to 43%, depending on the population assessed and the definition used.⁴ The prevalence of OAB increase with age because of neurological and musculoskeletal effects, degenerative

changes, and concurrent medical disorder such as diabetes.⁵

OAB is defined by the international continence society (ICS) as a complex of symptom characterized by urinary urgency, with or without urge incontinence, usually with frequency and nocturia in the absence of urinary tract infection or other obvious pathology.⁶ Urgency is defined by The ICS as the complaint of sudden, compelling desire to pass urine which is difficult to defer. Urgency is considered the characteristic symptom of OAB.⁷

Urinary frequency (UF) can be reliably measured with a voiding diary. Traditionally, up to eight micturition episodes during waking hours has been considered normal. UF defined as daytime voiding frequencies of more than eight times, but this number is highly variable based upon hours of sleep, fluid intake, co-morbid medical conditions and other factors.⁸

Nocturia is referred to interruption of sleep one or more times because of the need to void.⁷ In one study, three or more episodes of nocturia constitutes moderate or major bother.⁹ Nocturia is a multifactorial symptom due to factors unrelated to OAB as excessive night-time urine production and sleep apnea. OAB greatly affects physical and social functioning, including work, sleep, and sexual relationships.^{10,11} Because of symptom frequency, OAB patients usually decrease water intake and limit daily activity to avoid the discomfort.¹²

There is some controversy about the classification and diagnosis of OAB. Some sources classify OAB in to "Wet" and "Dry" variants depending on whether it is an urgent need to urinate or if it includes incontinence. Wet variants are more common than dry variants.¹³

The prevalence of UI is relatively low early in life, has a peak around the time of menopause, and rise steadily between the age of 60 and 80 years. In Egypt the prevalence rate is higher when compared to other reports. El-Azabet al., 2007 reported that the prevalence rate of UI is 54.8% among Egyptian women.¹⁴ Stress, urge, and mixed urinary incontinence are most common types of urinary incontinence in women and have different risk factors.¹⁵

The current study aims to estimate the prevalence of OAB and UI among women attending a tertiary care hospital in Egypt. Also, to explore the impact of OAB and UI on the quality of life (QOL) of women.

METHODS

A population based survey, which was conducted in Assiut Women Health Hospital, Egypt between August 2015 and December 2016. The Assiut Medical Ethical Review Board approved the study. The study included 900 women agreed to participate in the survey, aged 18 years and older randomly selected from the Gynecology

clinic of the aforementioned hospital. Each woman received The Bristol female lower urinary tract symptoms questionnaire (BFLUTSQ) for completing it. Those who reported current pregnancy or having a urinary tract infection were excluded from the study.

The Bristol female lower urinary tract symptoms questionnaire (BFLUTSQ) is a validated questionnaire comprises of 34 questions related to incontinence, OABS (Four question items; day time frequency, nocturia, urgency, UI) and other LUTS (Including intermittency, slow stream, straining, hesitancy, incomplete emptying, and inability to stop urinary flow) experienced during the last month as well as the impact of OABS and UI on sexual life and quality of life.

Participants whose responses were consistent with the 2002 ICS definitions of urgency (sometimes or more) alone or urgency sometimes or more with frequency more than eight times per day and/or nocturia once or more per night, with or without UI were classified as having OAB. Incontinence (most common types are SUI, UI and MUI) and other LUTS were positive if answer score ≥ 2 to BFLUTSQ question on UI and other LUTS. The questionnaire was translated to Arabic that resembles common speech in Egypt.

All basic criteria of the study participants as age, menopausal status, obstetric history, parity, educational level, surgical history (performed for incontinence or prolapse and history of hysterectomy), dietary habits, smoking and alcohol habits and any medical problems (Diabetes mellitus, Hypertension, Bronchial asthma) were collected by one of the study researchers.

Statistical analysis

All data were analyzed using SPSS software Chicago, IL, USA, version 21. Comparison between categorical variables in both groups was done by Chi-square test and continuous variables were compared using Student T-test. We considered P value < 0.05 as a significant value.

RESULTS

Table 1 shows the demographic characteristics of the study participants. The mean age of the study participants was 41.45 ± 15.92 years.

Table 2 shows the prevalence of OAB symptoms and UI. The total prevalence of OAB was 39.0% (351). The prevalence of OAB dry and OAB wet was 26% (234) and 13% (117), respectively, which suggested that 66.7% suffer from OAB dry and 33.3% suffer from OAB wet. The prevalence of dry OAB is significantly higher than wet OAB. The overall prevalence of UI was 22.2% (201). The prevalence of SUI, UI and MUI was 5.7%, 5.1% and 11.4%, respectively. The prevalence of OAB with UI, OAB with SUI and OAB with MUI was 9.7%, 5.4% and 18.3%, respectively.

Table 3 shows the prevalence of other LUTS. Incomplete emptying of bladder was the most prevalent symptom in 36.8% of women, followed by inability to stop urinary flow in 28.4% of women. On the other hand, urinary retention was the least prevalent symptom that was present only in 1.6% of women.

Table 1: The demographic characteristics of the study participants.

Characteristics	Study participants (n=900)
Age (years), mean±SD	41.45±15.92
Nulliparous	148 (16.5%)
Previous CS	272 (30.2%)
Postmenopausal	343 (38.1%)
Educational level	
Illiterate	51 (5.7%)
Some high school	615 (68.3%)
High school	184 (20.4%)
College	50 (5.6%)
Previous gynecological surgery	
Incontinence surgery	4 (0.4%)
Prolapse surgery	32 (3.6%)
Hysterectomy	51 (5.7%)
Medical diseases	
Diabetes mellitus	62 (6.9%)
Hypertension	21 (2.3%)
Bronchial asthma	53 (5.9%)
Passive smoking	52 (5.8%)
Caffeinated drinks	747 (83%)

CS; cesarean section, SD; standard deviation. All data are presented as n (%).

Table 2: The prevalence of overactive bladder symptoms and urinary incontinence.

Symptoms	Study participants (n=900)
Frequency, Score ≥3	337 (37.5%)
Nocturia, Score ≥2	319 (35.4%)
Urgency (Occasionally), Score ≥2	364 (40.4%)
Urgency (sometimes), Score ≥3	351 (39.0%)
Urge urinary incontinence (UUI)	47 (5.1%)
Stress urinary incontinence (SUI)	51 (5.7%)
Mixed urinary incontinence (MUI)	103 (11.4%)
Urinary incontinence (UI)	201 (22.2%)
Overactive bladder (OAB)	351 (39.0%)

All data are presented as n (%)

Total prevalence of OAB was 39%. Of these 50.1% (176 women) reported that their sexual life is spoilt by OABS and 29.9% (105 women) complained of dry vagina, 33.6% (118 women) had dyspareunia and 41.0% (144 women) had coital incontinence. As regard quality of life, 16.8% of the women had to restrict their daily activities because of OABS and 37.0% reported their OABS affected their physical activities. Additionally, 54.4% of

women said they affected their social life and 21.7% had to avoid places where toilet is far. There were also 50.1% of OAB patients have psychological symptoms such as anxiety and depression that make them would not be happy to spend the rest of their life with OABS.

Table 3: The prevalence of other lower urinary tract symptoms.

Symptoms	Study participants (n=900)
Bladder pain	112 (12.4%)
Unexplained urinary incontinence	68 (7.6%)
Hesitancy	221 (24.6%)
straining to start urination	125 (13.9%)
Intermittency	76 (8.4%)
Nocturnal enuresis	46 (5.1%)
Abnormal Strength of stream	154 (17.1%)
Urinary retention	14 (1.6%)
Dysuria	143 (15.9%)
Incomplete emptying	331 (36.8%)
Inability to stop urinary flow	256 (28.4%)

All data are presented as n (%)

Total prevalence of UI was 22.2%. Of them, 33.8% have reported avoiding sexual intimacy for fear of leaking of urine during sexual intercourse, 24.9% had coital incontinence, 13.9% complained of dry vagina and 16.4% had dyspareunia. In addition to 21.4% of the women had to restrict their daily activities and 34.8% had limited physical activity for fear of leaking urine. Also, 68.2% of women restrict social activity outside the home and 26.4% had to avoid going to work and other places for fear of leaking of urine.

DISCUSSION

Present study is population based study on the prevalence of OAB and UI in women aged ≥18 years using the 2002 definition of ICS. Our results show that the weighted prevalence of OAB is 39% (13% wet type and 26% dry type). This result is supported by many studies, where the prevalence of OAB is estimated to be in the range of (3%- 43%).⁴ The variation in prevalence is most likely due to definition dissimilarity of OAB, design of questionnaires, study populations, and survey methods. In another study done in Egypt on 1652 women aged 20 years and older, the overall prevalence of OAB was 40% (26% dry OAB and 14% with wet OAB) which is consistent with the present study.¹⁴

Milson et al conducted a telephone survey of men and women in six European countries.⁴ The overall prevalence of OAB in individual aged ≥40 years was 16.6% this study defined OAB as (comprising the symptom of increased day time frequency, urgency and urgency incontinency, occurring either single or in combination) which did not accord with the ICS 2002 definition. In our study, 40.4% of women have urgency

and this was closer to the true prevalence of OAB based on the current definition.

National Overactive Bladder Evaluation (NOBLE) program interviewed 5204 individuals aged ≥ 18 years by telephone in the United States.¹¹ The prevalence of OAB was 16.9% in women in this study. The EPIC study evaluated the prevalence of all LUTS in five countries using the 2002 ICS definitions. This study reported that the prevalence of OAB in individuals aged ≥ 18 years was 11.8%.¹⁶ In Asian countries, the prevalence of OAB in women aged ≥ 18 years was reported to be 53.1% by use of a different definition of OAB, which was the presence of frequency, urgency and urgency incontinence either single or in combination.¹⁷

Among individuals with OAB, 66.7% suffer from OAB dry and 33.3% suffer from OAB wet in our study, which is consistent with the result of Zhang et al¹⁸, but contrary to the results of NOBLE study.¹¹

In the present study, UI prevalence has been 22.2%. This result is supported by many studies which estimate its prevalence to be in the range of 12-69%, although estimates vary greatly in different countries and depend on the age of the study group.¹⁹⁻²² In another study done in Egypt on 1652 women, the overall prevalence of UI was 54.8% (the prevalence of SUI, UUI and MUI was 14.8%, 15% and 25%, respectively) which is higher than the present study.²³

In our study, the prevalence of SUI, UUI and MUI was 5.7%, 5.1% and 11.4%, respectively. Only few studies found mixed incontinence to be the commonest type.^{23,24} Most of other studies in which stress incontinence was the commonest type.^{25,26}

In our study, the total prevalence of OAB was 39%. Of these 50.1% (176) reported that their sexual life is spoiled by OAB, 16.8% (59) of the women had to restrict their daily activities, 37.0% (130) reported that their OAB affected their physical activities and 54.4% (191) said they affected their social life. 21.7% (76) had to avoid places where toilet is far. 50.1% (176) of OAB sufferers have psychological symptoms such as anxiety and depression that make them would not be happy to spend the rest of their life with OAB.

Total prevalence of UI was 22.2%. Sixty-eight of the women with UI have reported avoiding sexual intimacy for fear of leaking of urine during sexual intercourse. Forty-three of them had to restrict their daily activities and 70 limited physical activity for fear of leaking urine. In another study done in Egypt on 1652 women, aged 20 years and older. Regarding the QOL, the most distressing issues for women with OAB and UI were their inability to pray (92% and 90%, respectively), other aspects of QOL are affected also.²³

When compared with other studies, participants with OAB in our study reported significantly less work productivity, decrease sexual activity and anxiety symptoms, which is consistent with previous research on the impact of OAB on quality of life.²⁷ In population-based prevalence survey, OAB was associated with clinical and statistically higher depression scores, poorer sleep quality and lower levels of overall health-related quality of life.¹¹

A recent study, which used the HADS (Hospital anxiety and Depression scale) to investigate the impact of OAB on mental health, reported that rates of clinically elevated anxiety and depression were markedly higher, particularly among people with bothersome OAB. Irwin et al²⁸ also found that OAB was related to greater feelings of depression and stress, as well as compromising patients' working lives. Indeed, the effect of OAB symptoms on HRQOL was the same as the effect of UI.

CONCLUSION

In conclusion, this population-based survey confirmed that OAB symptoms are highly prevalent. Furthermore, OAB has severe effects on daily and sexual life as well as being related to psychological symptoms such as anxiety and depression. Also, urinary incontinence is a very distressing problem. With the help of simple questionnaire, burden of the disease can be estimated. Knowing about prevalence and risk factors of OAB & UI is very important, so that necessary steps in their prevention and treatment can be taken.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Abrams P, Cardozo L, Fall M, Griffiths D, Rosier P, Ulmsten U, et al. The standardization of terminology of lower urinary tract function: report from the Standardization Sub-committee of the International Continence Society. *Am J Obstet Gynecol.* 2002;1(187):116-26.
2. Steers WD, Barrett DM, Wein AJ. Voiding Dysfunction: Diagnosis, Classification, and Management. In: Gillenwater JY, Grayhack JT, eds. *Adult and Pediatric Urology.* vol. 3. Anne S. Patterson, 26B; 1996:1220-1310.
3. Ouslander JG. Management of Overactive Bladder. *N Engl J Med.* 2004;350(8):786-99.
4. Milson I, Abrams P, Cardozo L, Roberts RG, Thuroff J, Wein AG, et al. How wide spread are symptoms of an overactive bladder and how managed? A population-based prevalence study. *BJU Int.* 2001; 87:760-6.
5. Coyne K, Revicki D, Hunt T, Corey R, Stewart W, Bentkover J, et al. Psychometric validation of

- overactive bladder symptom and health-related quality of life questionnaire: the OAB-q. *Qual life Res.* 2002;11:563-74.
6. Abrams P, Cardozo L, Fall M, Griffiths D, Rosier P, Ulmsten, U et al: The standardization of terminology in lower urinary tract function: Report from the standardization sub-committee of the International Continence Society. *Urology.* 2003;61:37-49.
 7. Haylen BT, De Ridder D, Freeman RM, Swift SE, Berghmans B, Lee J, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Int Urogynecol J.* 2010;21(1):5-26.
 8. Fitzgerald MP, Brubaker L. Variability of 24-hour voiding diary variables among asymptomatic women. *J Urol.* 2003;169:207.
 9. Tikkinen KA, Johnson TM, Tammela TL, Sintonen H, Haukka J, Huhtala H, et al. Nocturia frequency, bother, and quality of life: how often is too often? A population-based study in Finland. *Eur urol.* 2010;57(3):488-98.
 10. Coyne KS, Payne C, Bhattacharyya SK, Revicki DA, Thompson C, Corey R, et al. The impact of urinary urgency and frequency on health-related quality of life in overactive bladder: results from a national community survey. *Value in health.* 2004;7(4):455-63.
 11. Stewart W, Van Rooyen J, Cundiff G, Abrams P, Herzog A, Corey R, et al. Prevalence and burden of overactive bladder in the United States. *World J urol.* 2003;20(6):327-36.
 12. Kelleher CJ, Resse PR, Pleil AM, Okano GJ. Health-related quality of life of patients receiving extended-release tolterodine for overactive bladder. *Am J Manag Care.* 2002;8(19):S608-15.
 13. Domchowski RR, Newman DK. Impact of Overactive Bladder on Women In the United States: results of a national survey. *Curr Med Res Opin.* 2007;23(1):65-76.
 14. El-Azab AS, Moeen AM. The satisfaction of patients with refractory idiopathic overactive bladder with onabotulinumtoxin A and augmentation cystoplasty. *Arab J Urol.* 2013;11(4):344-9.
 15. Altaweel W, Alharbim M. Urinary incontinence. Prevalence, risk factors, and impact on health related quality of life in Saudi women. *Neurourol Urodyn.* 2012;13:642-5.
 16. Irwin DE, Milsom I, Kopp Z, et al. Impact of overactive bladder symptoms on employment, social interactions and emotional well-being in six European Countries. *BJU Int.* 2006;97:96-100.
 17. Lapitan MC, Chye PL. Asia – Pacific Continence Advisory Board. The epidemiology of overactive bladder among females in Asia: a questionnaire survey- *Int Urogynecol JP Pelvic Floor Dysfunct.* 2001;12:229-31.
 18. Zhang W, Song Y, He X, Huang H, Xu B, Song J. Prevalence and risk factors of overactive bladder syndrome in Fuzhou Chinese women. *Neurourology and urodynamics.* 2006;25(7):717-21.
 19. Botlero F, Urquhart DM, Davis SR, Bell RJ. Prevalence and incidence of UI in women review of the literature and investigation of methodological issues. *Int Urol.* 2008;15:230-4.
 20. Lasserre A, Pelat C, Gueroult V, Hanslik T, Chartier-Kastler E, Blanche T, et al. UI in French women: prevalence, risk factors, and impact on quality of life. *Eur Urol.* 2009;56:177-83.
 21. Correia S, Dinis P, Rolo F, Lunet N. Prevalence, treatment and known risk factors of urinary incontinence and overactive bladder in the non-institutionalized Portuguese population. *Int Urogynecol JP Pelvic Floor Dysfunct.* 2009;20:1481-9.
 22. Cerruto MA, D'Elia C, Aloisi A, Fabrello M, Artibani W. Prevalence, incidence and obstetric factors impact on female urinary incontinence in Europe: a systemic review *Urol Int.* 2013;90:1-9.
 23. El-Azab AS, Mohammed EM, Sabra HI. The prevalence and risk factors of urinary incontinence and its influence on the quality of life among Egyptian women. *Neurourolurodyn.* 2007;26:783-8.
 24. Peyrat L, Haillot O, Bruyere F, Boutin JM, Bertrand P, Lanson Y. Prevalence and risk factors of urinary incontinence in young and middle aged women. *BJU Int.* 2002;89:61-6.
 25. Kinchen KS, Burgio K, Diokno AC, Fultz NH, Bump R, Obenchain R. Factor associated women's decisions to seek treatment for urinary incontinence. *J Women Health (Larchmt)* 2003;12:687-98.
 26. Al-Badr A, Brasha H, Al-Raddadi R, Noorwali F, Ross S. Prevalence of urinary incontinence among Saudi women. *Int J Gynaecol Obstet.* 2012;117:160-3.
 27. Rosen RC, Giuliano F, Carson CC. Sexual dysfunction and lower urinary tract symptoms (LUTS). *Eur Urol.* 2005;47:824-37.
 28. Irwin P, Somov P, Ekwueme K. Patient reported outcomes of abobotulinum toxin A injection treatment for idiopathic detrusor overactivity: A pragmatic approach to management in secondary care. *J Clin Urol.* 2013;6:1.

Cite this article as: Bahloul M, Abbas AM, Abo-Elhagag MA, Elsnosy E, Youssef AA. Prevalence of Overactive bladder symptoms and urinary incontinence in a tertiary care hospital in Egypt. *Int J Reprod Contracept Obstet Gynecol* 2017;6:2132-6.