WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 9, 809-817. Research Article ISSN 2277– 7105

STUDY THE EFFICACY OF SPECIFIC YOGASANAS IN THE MANAGEMENT OF STRESS URINARY INCONTINENCE IN WOMEN

Dr. Manisha M. Thakare*[1] and Dr. Kirti R. Bhati[2]

[1]P.G. Scholar, Dept. of Swasthavritta, Bharati Vidyapeeth Deemed to be University, College of Ayurveda, Pune, Maharashtra, India.

[2]Associate Proffessor Dept. of Swasthavritta, Bharati Vidyapeeth Deemed to be University, College of Ayurveda, Pune, Maharashtra, India.

Article Received on
04 March. 2018,

Revised on 25 March 2018,
Accepted on 15 April 2018,

DOI: 10.20959/wjpr20189-11994

***Corresponding Author**
Dr. Manisha M. Thakare
P.G. Scholar, Dept. of Swasthavritta, Bharati Vidyapeeth Deemed to be University, College of Ayurveda, Pune, Maharashtra, India.

ABSTRACT

Yogasanas are considered as the most convenient, drugless and inexpensive method. Clinical trial on 30 patients was carried out to study the efficacy of *Bhadrasana, Vajrasana, Pashcimottanasana* and *Ushtrasana* on the patients of Stress Urinary Incontinence. Assessment was done by using RUIS scale and Bladder diary for 45 days by periodical follow. Observations were recorded on the basis of before and after treatment and results were statistically analysed by using Wilcoxon Signed Rank test for observations on ordinal scale and paired t-test for quantitative observations .Patients have shown significant response in Parameters of Revised Urinary Incontinence Scale (RUIS) and Bladder Diary.

KEYWORDS: Stress urinary incontinence, *Mutraghata, Yogasanas.*

INTRODUCTION

Complaint of any involuntary leakage of urine is known as urinary incontinence.[1] Among the types of urinary incontinence; Stress urinary incontinence is the most common form of urinary incontinence in women and is associated with high financial, social and emotional costs. Stress urinary incontinence defined by the International Continence Society is the complaint of involuntary leakage of urine during effort or exertion or during sneezing or coughing. Initial treatment includes behavioural changes and pelvic floor muscle training.[1]

Dealing with the Ayurvedic aspect of stress urinary incontinence, some authors have interpreted the condition of incontinence of urine as *"Mutrateeta"* which is one of the type of

Mutraghata according to Ayurveda.[2] Incontinence comes under the heading of pelvic floor dysfunction and always associated with weakness of pelvic muscles as well as failure of supporting connective tissue structures leading to urinary incontinence.[3] Moreover, women are more vulnerable to pelvic floor dysfunction due to several reasons and they suffer silently due to lack of knowledge of preventive therapeutic strategies directed towards the problem. *Asana* are placed in the beginning of the Yogic literature and are expected to counteract the instability.[4,5] *Yogasanas* (Yogic postures) are considered as the most convenient, drugless and inexpensive method. As per yogic literature *Ushtrasana, Pashchimottasana, Bhadrasana* and *Vajrasana* have strengthening effect on pelvic floor muscles.[6]

Need for study

Studies show that 20.8% of women over the age of 15 have experienced stress urinary incontinence worldwide.[7] Most of the women who are suffering from stress urinary incontinence withdraw from social life and try to hide the problem from families, friends and even from their doctors.[8] This condition affects women of all age groups and probably related to pregnancy and labour.[9] Urinary incontinence is associated with depression, social isolation, physical inactivity, falls and fractures, and institutionalization.[10] Although a variety of clinical therapies for incontinence are available, many have limitations that decrease their efficacy, safety and accessibility, particularly for older women who are at greatest risk .Behavioural treatment strategies such as pelvic-floor muscle exercises are highly effective, but can be difficult for some women to learn without in person individualized instruction.[11] Anti-cholinergic medications are moderately effective in reducing incontinence, but are associated with bothersome side effects. For stress type, surgery is an effective second line treatment, but many women do not desire or not candidates for surgical intervention.[12] Various clinical and epidemiological studies have been identified that anxiety, perceived stress and associated autonomic nervous system imbalance are the risk factors for urinary incontinence.[13] With its focus on deep breathing and meditation; yoga can be useful to overcome this condition. Regular practice of yoga postures can improve and maintain general lower extremity muscle strength, balance, and conditioning.[14]

AIM AND OBJECTIVES

Aim:- To study the efficacy of *Yogasanas* in the management of Stress urinary Incontinence.

Objective:- To study the effect of *Yogasanas* in the prevention of incontinence.

MATERIALS AND METHODS

Clinical trial was carried out on 30 individuals between the age group of 20 to 65 years from O.P.D. unit of P.G. Department of Swasthavritta and Yoga, Bharati Medical Foundation's Ayurved Hospital. Special clinical proforma regarding this study was prepared and observations were noted. Written informed consent of patients as per ICMR guidelines was taken prior to enrolling in clinical trial.

Inclusion Criteria:- Female patients of age group 20 to 60 years irrespective of socioeconomic status were included. Patients showing signs and symptoms of stress urinary incontinence were included. Patients suitable for *Asanas* were included.

Exclusion Criteria:- Current urinary tract infection or hematuria, Major neurologic condition such as stroke, multiple sclerosis, or Parkinson's disease History of congenital defect leading to incontinence, Fistula in the bladder or rectum, pelvic cancer or radiation, or interstitial cystitis or chronic pelvic pain Current symptomatic pelvic organ prolapsed, Prior surgery to the urinary tract, Patients who have used practitioner-supervised behavioural, pharmacological, or other clinical treatments (e.g., pessary), Pregnant patients.

Procedure:- Patients were taught *Asanas* under the guidance of the expert for 7 days. Each patient was practicing *Asanas* for a total duration of 45 days. Follow ups were taken periodically on 7^{th}, 14^{th}, 21^{st} and 28^{th} day respectively. Post treatment follow up was taken on 45th day. Total time for procedure was 15-20mins daily. Stretching exercise for 3-5 mins Procedure time for each *Aasana* was 3-5 mins. Step wise procedure of *Asanas* was carried out as per the text.

Criteria of Assessment

Assessment was done by using Revised Urinary Incontinence Scale [RUIS] and 3 days Bladder diary written by the patient.

OBSERVATIONS AND RESULTS

For observations on ordinal scale, we have used Wilcoxon Signed Rank test.

For quantitative observations we have used paired t-test.

A. Effect of *Yogasanas* on Urine leakage to the feeling of urgency

Table 1: Effect of Yogasanas on Urine leakage to the feeling of urgency.

Urine leakage to the feeling of urgency	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
	1	0	-4.866[a]	0.000	82.1	Significant

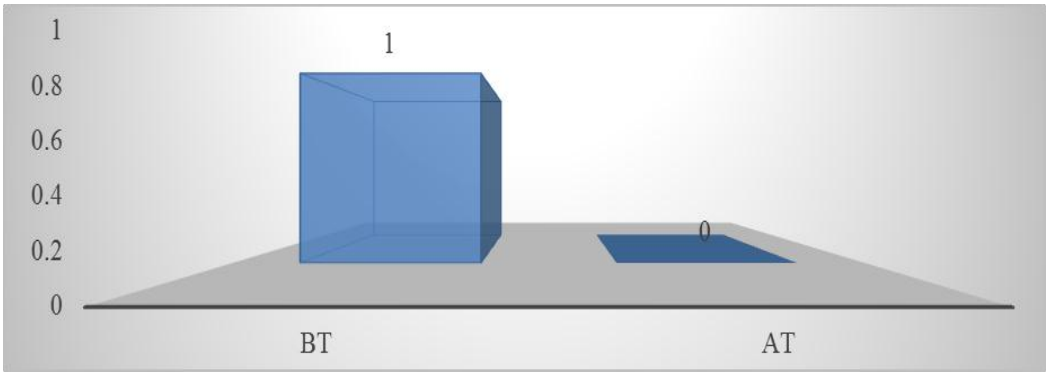

Chart 1: Effect of Yogasanas on Urine leakage to the feeling of urgency.

B. Effect of Yogasanas on urine leakage to related to physical activity, coughing or sneezing

Table 2: Effect of *Yogasanas* on urine leakage to related to physical activity, coughing or sneezing.

Urine leakage to related to physical activity, coughing or sneezing	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
	2	1	-5.007[a]	0.000	70.8	Significant

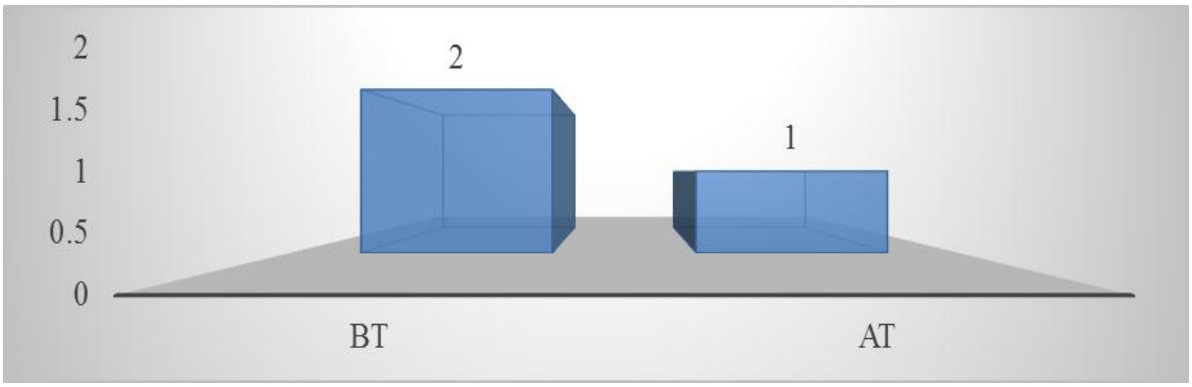

Chart 2: Effect of *Yogasanas* on urine leakage to related to physical activity, coughing or sneezing.

C. Effect of Yogasanas on small amount of urine leakage

D. Table 3: Effect of Yogasanas on small amount of urine leakage.

Small amount of urine leakage	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
	2	1	-4.862[a]	0.000	66.7	Significant

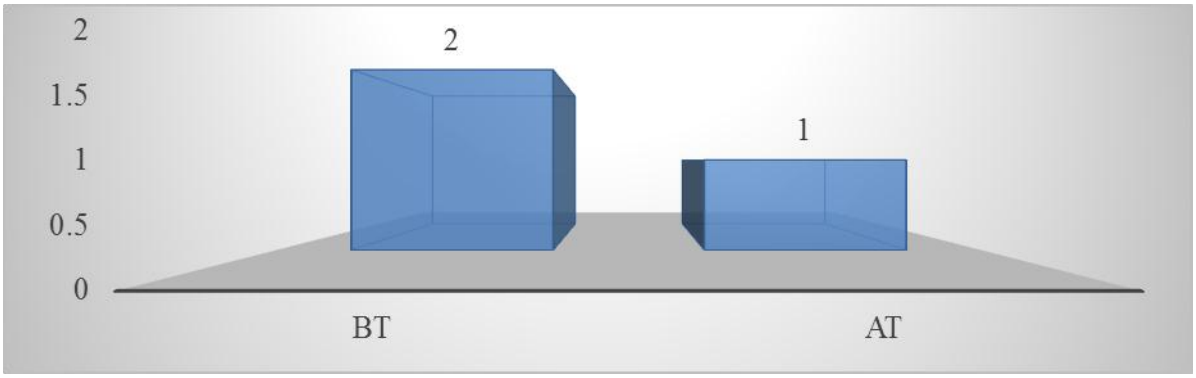

Chart 3: Effect of Yogasanas on small amount of urine leakage.

D. Effect of Yogasanas on "how often do you experience urine leakage ?"

Table 4: Effect of Yogasanas on "how often do you experience urine leakage?"

How often do you experience urine leakage?	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
	3.5	1	-4.855[a]	0.000	67.4	Significant

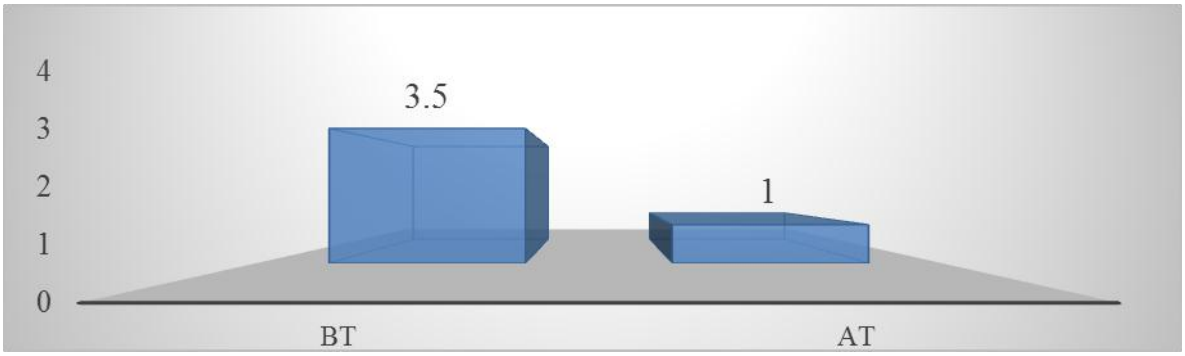

Chart 4: Effect of Yogasanas on "how often do you experience urine leakage?"

E. Effect of Yogasanas on, "how much urine do you lose each time?"

Table 5: Effect of Yogasanas on, "how much urine do you lose each time?"

How much urine do you lose each time?	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
	1	1	-3.626[a]	0.000	40.0	Significant

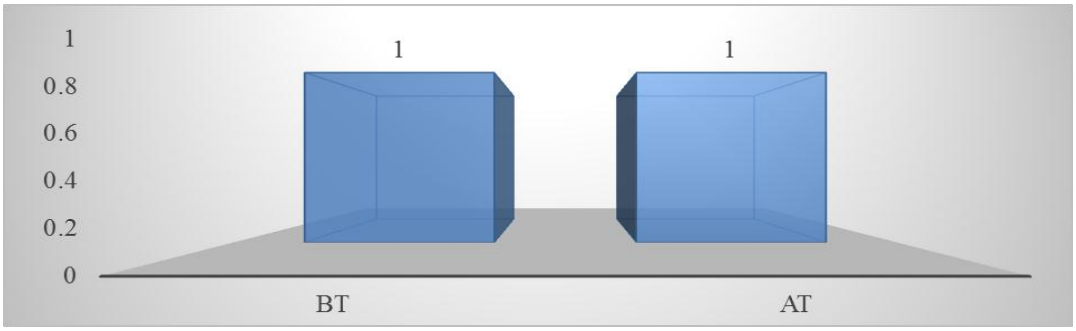

Chart 5: Effect of Yogasanas on, "how much urine do you lose each time?".

F. Effect of Yogasanas on total RUIS score.

Table 6: Effect of Yogasanas on total RUIS score.

Total RUIS score	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
	10.5	4	-4.801[a]	0.000	65.7	Significant

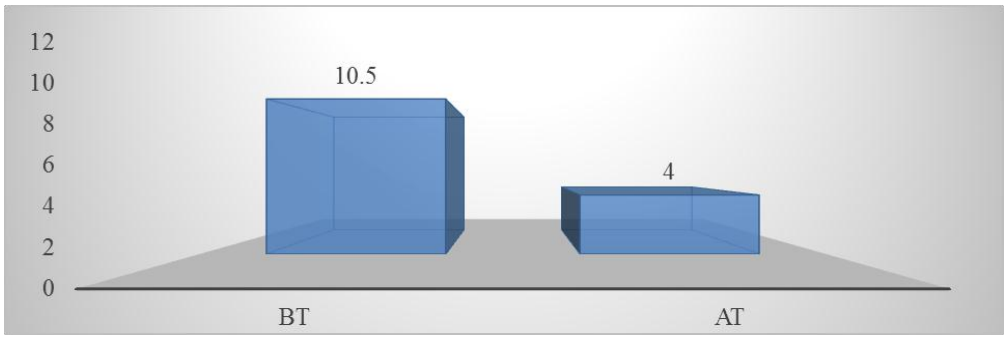

Chart 6: Effect of Yogasanas on total RUIS score.

G. Effect of Yogasanas on urine frequency per day

Table 7: Effect of Yogasanas on urine frequency per day.

Urine frequency per day	Mean	N	SD	SE	t-Value	P-Value
BT	8.3	30	0.78	0.14	7.878	0.000
AT	7.2	30	0.68	0.12		

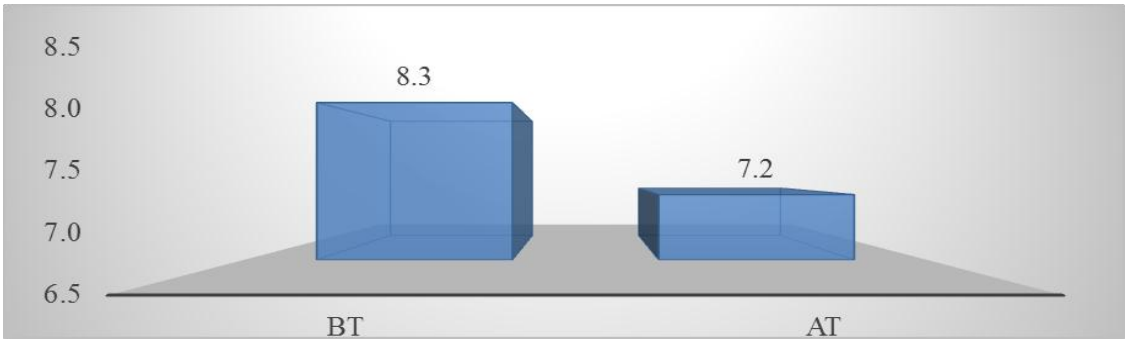

Chart 7: Effect of Yogasanas on urine frequency per day.

H. Effect of Yogasanas on urine leakage per day

Table 8: Effect of Yogasanas on urine leakage per day.

Urine leakage per day	Mean	N	SD	SE	t-Value	P-Value
BT	3.8	30	1.39	0.25	14.752	0.000
AT	1.1	30	0.55	0.10		

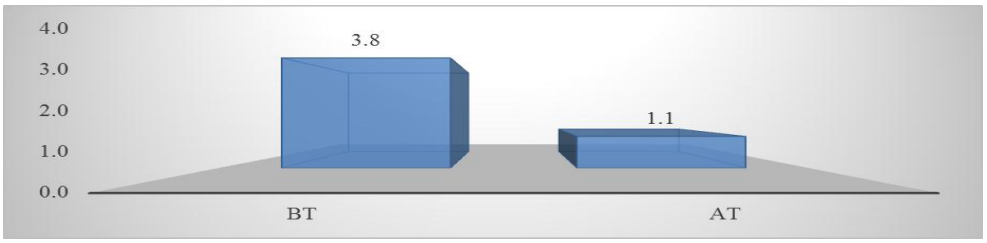

Chart 8: Effect of Yogasanas on urine leakage per day.

For observations on ordinal scale, we have used Wilcoxon Signed Rank test.

For quantitative observations we have used paired t-test.

The present study denotes that statistically significant result was found in: Revised Urinary Incontinence Scale (RUIS) and Bladder Diary.

DISCUSSION

The demographic data showed higher incidence of SUI is recorded in the age group of 50 -65 (60%). This shows old age is risk factor for SUI. 37% patients belonged to *Vata-pitta Prakruti*. It suggests that *Vata prakruti* people are more prone to SUI. 90% belonged to the group of vaginal delivery, this shows Vaginal delivery increases the risk of SUI. 70% Patients belonged to mixed diet group and 30% to vegetarian. Occurrence is found to be higher in people having a mixed dietary.40% patients followed heavy, 33% sedentary and 27% moderate *Viha (*life style*)*. This shows that too heavy or too sedentary lifestyle both are risk factors for SUI.57% patients were menopausal women this indicates that menopause is one of the leading cause for SUI. After menopause there is Estrogen deficiency which can cause the tissue lining the urethra to thin out so that the urethra may not close properly.44% were outdoor workers. This is may be because they have to suppress their urinary urge and *Mutravegavarodha* (suppression of urine urge) is one of the etiological factor for *Mutravaha strotas rogas* (Urinary tract diseases). 80% Patients were Literate. This is possibly due to in Illiterate women there is a delay in treatment seeking and also their poor knowledge and indifferent attitude towards urinary incontinence. 67% Patients were having tea or coffee and

20% were having Nicotine as addiction. Tea and coffee contain caffeine which leads to incontinence Nicotine increases bladder contraction leading to SUI.

Probable Mode of Action of *Asanas*

Asana increases *Sthirtwa guna* (Stability) leading to *Vata* shaman and increase in *mamsa dhatu bala*. Thus strength of the pelvic floor muscles increases. The proper work of strengthening and stabilizing the Pelvic Floor with *Asanas* helps to create the correct foundation of each movement of the pelvis. Practicing *Asanas* helps in three ways:

1. The yoga posture isolates and strengthens the Pelvic Floor muscles, as well as stretches and lengthens them;
2. Breathing can release tension and direct healthy oxygenated blood to the pelvis.
3. The yogic posture helps in strengthening the core postural muscles which are directly linked to the Pelvic Floor muscles. A healthy relationship between core muscles and Pelvic Floor muscles is very important to the overall health of the pelvis.

Thus Regular practice of *Vajrasan*, *Bhadrasana*, *Pashchimottanasana* and *Ushtrasana* strengthens the pelvic floor and abdominal muscles and reduces symptoms of SUI.

CONCLUSION

In this clinical trial of a *Yogasanas* intervention, found that enrolling middle-aged and older women with Stress urinary incontinence was practicable, teaching women to practice yoga to improve their incontinence was feasible and safe; adherence to home yoga practice was high. Yoga may offer a useful alternative treatment strategy for women who do not have access to incontinence specialists or pelvic floor physical therapists elect not to use standard behavioral, pharmacologic, or surgical therapies for SUI or cannot abide these therapies. Since Yoga can be taught and practiced at many locations without continuous or ongoing supervision by healthcare providers, it offers a potentially cost-effective, community-based management strategy for incontinence, provided that it can be taught in a standardized way and with appropriate attention to patients' clinical and safety needs. Overall, findings provide preliminary evidence to support the practicability, worth and well-being of a *Yogasanas* intervention to improve Stress urinary incontinence in women without complicated urologic histories.

REFERANCES

1. Dutchman M, Wustler M., Mar. Stress urinary incontinence in women: Diagnosis and medical management. International Urogynaecology Journal, 2002; 9(4): 2103.

2. Om Prakash Gupta. Hand book of Ayurvedic medicine. Chapter Urinary system. First edition. Varanasi: Chaukhambha Sanskrit bhavan, 2005; 107.
3. Sung, V. W., & Hampton, B.S. Epidemiology of pelvic floor dysfunction. Obstetrics and Gynecology Clinics of North America, 2009; 36(3): 421-443.
4. Gheranda, Gheranda Samhita, eds J. L. Gupta Chowkhamba Sanskrit Pratishthan, Delhi, 2003; 6(Gh1/10).
5. Yogiraj Shivaji, Hatha Yoga Pradipika eds Shri Venkateshwar press prakashan, Mumbai, 2001; 4: 17(H.P.1/17).
6. B.K.S. Iyengar B.K.S. Iyengar Yoga, D.K. Publishing, New York, 2008; 300.
7. Maral I, Ozkardes H, Peskircioglu L. Prevalence of stress urinary incontinence at or after the age of 15 years: a cross-sectional study. J Urol, 2001; 165: 408-12.
8. Baranitharan R, Mahalakshmi V., Apr., Prevalence of type of urinary incontinence and their association with types of delivery. Indian Journal of Physiotherapy and Occupational Therapy, 2009; 3(4): 28-36.
9. Diokno CA., Sep. Incidence and prevalence of stress urinary incontinence, 2003; 3(8E): 58.
10. Thom DH, Haan MN, Van Den Eeden SK., Sep., Medically recognized urinary incontinence and risks of hospitalization, nursing home admission and mortality. Age Ageing, 1997; 26(5): 367–374.
11. Diokno A, Yuhico M Jr., Nov., Preference, compliance and initial outcome of therapeutic options chosen by female patients with urinary incontinence. J Urol., 1995; 154(5): 1727–1730-1731.
12. Sultana CJ, Campbell JW, Pisanelli WS, et al. Feb., Morbidity and mortality of incontinence surgery in elderly women: an analysis of Medicare data. Am J Obstet Gynecol, 1997; 176(2): 344–348.
13. Hubeaux K, Deffieux X, Ismael SS, et al. Dec;, Autonomic nervous system activity during bladder filling assessed by heart rate variability analysis in women with idiopathic overactive bladder syndrome or stress urinary incontinence. J Urol, 2007; 178(6): 2483–2487.
14. Fan JT, Chen KM., Oct; Using silver yoga exercises to promote physical and mental health of elders with dementia in long-term care facilities. Int Psychogeriatr, 2011; 23(8): 1222–1230.