

[ORIGINAL ARTICLE]**Prevalence and associated risk factors of urinary incontinence among menopausal women living in rural area.****Pawar Anushree¹, Prof. Dr. Ganvir Shyam (PhD)²,**¹ M.P.T. Students, ² Professor and HOD, Dept. of Community Physiotherapy, DVVPF's, College of Physiotherapy, Ahmednagar**ABSTRACT :**

Background: Urinary incontinence is a social plus hygiene problem. It is one of the common symptoms attributable to hormonal changes during menopause which significantly affects quality of life of women. This study was aimed to estimate the prevalence, risk factors of urinary incontinence and its impact on everyday activities.

Method: This study was carried out in rural areas of Ahmednagar district. Two hundred women above 40 years of age were included. Incontinence was assessed using international consultation on incontinence questionnaire.

Results: Statistical analysis was done using SPSS software, where the mean age was 48.12±8.9 years, 113 females were postmenopausal and 87 were premenopausal.

Conclusion: A moderate prevalence of urinary incontinence was found among rural areas. Multi parity, occupation, hysterectomy, comorbidities were identified risk factors for incontinence. Significant differences were found in occupation, comorbidities, parity, and hysterectomy in the studied population.

Key words: Premenopausal, Post menopause, Urinary incontinence, Quality of life.

Introduction :

Urinary incontinence is a condition resulting in involuntary loss of urine which is objectively demonstrable and is a social plus hygiene problem. It is a common health problem among women, with the prevalence ranging from 8 to 45% in different studies. Urinary incontinence is a severe debilitating condition affecting all women causing significant impact on the physical, psychological, and socio economical aspects of life^[1]. Two major types of incontinence are stress incontinence, in which urine leaks due to physical exertion, and urge incontinence, in which urine leaks with a sudden compelling desire to void. Women who experience both symptoms are considered as having mixed urinary incontinence.^[2]

Urinary incontinence is a common problem with widespread human and social implications causing discomfort, shame, and loss of self-confidence. It not only affects the quality of life but also has significant

cost implications^[3]. Women neither come forward seeking medical consultation nor do they discuss about their incontinence openly, and the condition remains underestimated in the society. There are many unreported cases in the population as per several hospital-based studies done in India before. The knowledge about the risk factors of urinary incontinence in this population will help us to take measures to reduce the burden of the condition^[4]. Incontinence has a significant impact on a woman's social and personal life, so understanding its impact will help us to formulate regimen to enhance their quality of life. Several studies have been done previously, although many risk factors have been reported that can cause incontinence, there is lack of study on prevalence risk factors of urinary incontinence in rural areas. Hence objectives of this study are to determine the prevalence of urinary incontinence, to determine the risk factors associated with urinary incontinence, to determine impact of

*Corresponding author

Pawar Anushree

Email : anu.pawar.amp@gmail.com

DVVPF'S College of Physiotherapy, Vilad ghat, Ahmednagar

Copyright 2023, VIMS Journal of Physical Therapy. This is an Open Access article which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



incontinence on quality of life.

Materials and Methods :

This cross-sectional study began after an approval from the institutional ethical committee, and it was undertaken for a period of 3 months. 200 women above forty years of age, who were residing in nearby villages of Ahmednagar were included in the study, through simple random sampling technique, written and informed consent was obtained, and they were interviewed regarding urinary incontinence using international consultation on incontinence questionnaire(ICIQ) and values were noted for statistical analysis. ICIQ measures the frequency, intensity, and impact of urinary incontinence.

Statistical analysis was done using SPSS 2.0 version.

Data was statistically described in terms of mean \pm SD, median and range, or frequencies and percentages. For comparing categorical data, χ^2 test was used. p value < 0.05 was considered level of significance.

Result :

The mean age for 200 participants was 48.12 ± 8.9 years while the mean BMI of this sample was 24.5 ± 2.6 kg/m². Most participants were farmers by occupation. "Misri" was the common addiction while hypertension and diabetes were two important comorbidities found in this population. 113 were postmenopausal and 87 were premenopausal women, out of which 38 women had hysterectomy. Table 1 shows demographic characteristics of the studied population.

Table 1: Demographic Characteristics

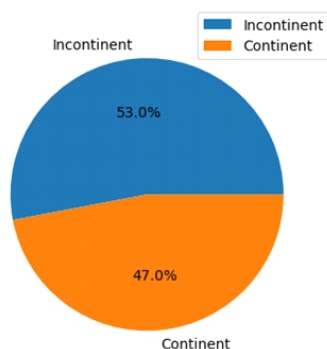
Demographic		n
Marital Status	Married	180
	Widow	20
Occupation	Farmer	104
	Housewife	26
	Labor	30
	Maid	40
Addictions	Misri	43
	Tobacco	17
	None	140
Comorbidities	Hypertension	10
	Diabetes	12
	None	178
Parity	Primipara	10
	Multipara	190
Gynecological Surgery	Hysterectomy	38
	None	162
Menopausal Status	Premenopausal	87
	Postmenopausal	113
		Mean \pm SD
Age (years)		48.12 ± 8.9
BMI (kg/m ²)		24.5 ± 2.6

Table 2: Percentage of Continent and Incontinent participants

	n (%)
Continent	47.5%
Incontinent	52.5%

Table 3 : The impact of urinary incontinence on everyday activities.

	mean \pm SD
Impact score (ICIQ)	3.00 ± 2.9



After assessing the impact of urinary incontinence on everyday activities using international consultation on incontinence questionnaire, the obtained mean score was 3.00 ± 2.9 , suggesting mild affection in quality of life of studied participants (table3).

Table 4 : Risk Factors associated with incontinence.

Demographic		Continence (n=95)	Incontinence (n=105)	χ^2 test (p value)
Occupation	Farmer	53	50	0.001
	Housewife	09	17	
	Labor	10	20	
	Maid	23	18	
Addictions	Misri	15	28	0.015
	Tobacco	08	04	
Comorbidities	Hypertension	05	05	0.009
	Diabetes	00	12	
Parity	Primipara	06	05	0.001
	Multipara	89	100	
Gynecological surgery	Hysterectomy	00	38	0.002
Menopausal status	Premenopausal	47	40	0.091
	Postmenopausal	48	65	

After an analysis using χ^2 test for assessing the risk factors in premenopausal and postmenopausal women, we found that there was statistically significant difference between occupation, comorbidities, parity, and hysterectomy, suggesting it as major risk factors for developing urinary incontinence (table4).

Discussion :

In this study, we found that 105 (52.5%) participants were having urinary incontinence showing moderate prevalence in our studied rural area.

Multiparity has been identified as a significant risk factor for the development of urine incontinence because it damages pelvic floor structures. Women with multiparity had an increased risk of incontinence due to pelvic floor musculature and connective tissue injury during the process of parturition, which affects the normal urinary continence function, according to a Meta-analysis by

Zhou, Hai-Hong et al. for overall urinary incontinence^[5].

We found that occupation had significant relation with development of urinary incontinence which is in line with the study by Kim et al who found that following working situations were found to be strongly related with urine incontinence: an unclean and uncomfortable workplace, a dangerous job and a high risk of accidents, a sense of urgency, being in an uncomfortable position for an extended amount of time, and lifting heavy objects^[6].

We also found that comorbidities such as hypertension and diabetes were prevalent in the participants with incontinence, with diabetes being more significantly related to occurrence of urinary incontinence. Women with diabetes who experience microvascular problems, particularly macroalbuminuria and peripheral neuropathic pain, have a higher likelihood of experiencing weekly

incontinence. These connections imply that incontinence may be a microvascular issue as well, presumably as a result of problems with the nerve supply to the urethral sphincter and bladder, which might injure the sphincter and lead to uncontrollable bladder contractions and incontinence^[7].

The History of hysterectomy was one of the risk factors of urinary incontinence in this study, as the correlation between prior hysterectomy and incontinence was found statistically significant. Hysterectomy is a risk factor, as it can lead to injuries to several anatomical structures; urinary tract, digestive tract and nervous structures^[8]. Katza et al. had stated that there is influence of body mass index, mode of delivery and smoking on the occurrence of urinary incontinence after hysterectomy^[9].

In our study population, we found that the impact of urinary incontinence on everyday life was moderate as we obtained a mean score of 3.00 ± 2.9 . It is suggestive of mild affection in quality of life of our participants. Women do not openly discuss their incontinence or seek medical advice, and as a result, the condition is still underappreciated in society.

To decrease the devastating effects of this disorder, a thorough study of the factors that contribute to the incidence of urinary incontinence in women is crucial.

Conclusion :

The results of this current study indicate a moderate prevalence of urinary incontinence among rural areas. Multi parity, occupation, hysterectomy, comorbidities were identified risk factors for incontinence. We also found that incontinence has a mild impact on everyday living of this studied population.

Funding : This research received no external funding.

Informed consent : Informed consent was obtained from all subjects involved in the study.

Conflicts of interest : The authors declare no conflict of interest.

References:

1. Agarwal BK, Agarwal N. Urinary incontinence: prevalence, risk factors, impact on quality of life and treatment seeking behaviour among middle aged women. *Int Surg J.* 1953-19584;(6):2017.4(6).
2. Aoki, Brown HW, Brubaker L, Cornu JN, Daly JO, Cartwright R. Urinary incontinence in women. *Nat Rev Dis Primers.* 3(1):1-19:2017.6
3. Singh U, Agrawal P. Prevalence and risk factors of urinary incontinence in Indian women: A hospital-based survey. *J Urol.* 2013.29;1:31-6
4. Ajith AK, Rekha A, Duttagupta S, Murali V, Ramakrishnan D, Krishnapillai V. Prevalence and Factors of Urinary Incontinence among Postmenopausal Women Attending the Obstetrics and Gynecology Outpatient Service in a Tertiary Health Care Center in Kochi, Kerala. *Indian J Community Med.* 2019;44;Suppl 1:S30-3.
5. Zhou, H-H, Shu, Liu, Wang, Yang, Guo. Association between parity and the risk for urinary incontinence in women: A meta-analysis of case-control and cohort studies. *Medicine.* 2018;97(28):1-9.e11443.
6. Kim Y, Kwak Y. Urinary incontinence in women in relation to occupational status. *Women Health.* 2017;57(1):1-18.
7. Brown JS, Vittinghoff E, Lin F, Nyberg LM, Kusek JW, Kanaya AM. Prevalence and risk factors for urinary incontinence in women with type 2 diabetes and impaired fasting glucose: findings from the National Health and Nutrition Examination Survey (NHANES) 2001-2002. *Diabetes Care.* 2006;29(6):1307-12.
8. Skorupska K, Wawrysiuk S, Bogusiewicz M, Miotła P, Winkler I, Kwiatkowska A, and Tomasz Rechberger. "Impact of hysterectomy on quality of life, urinary incontinence, sexual functions and urethral length". *J Clin Med. Clin. Med.* 2021, 10(16), 1-8
9. Bohlin Katza S, Ankardal M, Lindkvist H, Milsom I. Factors influencing the incidence and remission of urinary incontinence after hysterectomy. *Am J Obstet Gynecol.* 2017;216(1):53-9.