

## **Prevalence of lower urinary tract symptoms in adults above 50 years of age in central Kerala**

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### **Abstract:**

**Background & objectives:** The *lower urinary tract symptoms*(LUTS) represent one of the most common clinical complaints in elderly population. Approximately one in five adults report moderate-to-severe LUTS and it substantially reduces quality of life. LUTS represent an increasing problem in community because of increasing life expectancy. By assessing the magnitude of LUTS, it helps in implementing strategies enabling us to control the disease and to improve the Quality of Life (QOL) among elderly. There are few studies to assess the prevalence of LUTS in elderly population in India. With this background this present study was undertaken to find out the prevalence of LUTS among adults aged above 50 years in central Kerala.

**Methods:** The study was done in Aarpookara panchayath of Kottayam district. Four hundred and eighty subjects were selected using cluster sampling technique from 16 wards of Aarpookara panchayath where each ward was considered as a cluster. Identification of ward and households was done with the help of Junior Public Health Nurse/ASHA worker. Thirty eligible subjects satisfying the inclusion and exclusion criteria from each ward were recruited into the study. Selection of lane and 1<sup>st</sup> house in each ward was done by random selection by using the procedure discussed in cluster sampling technique used for evaluation of universal immunization coverage.

**Results:** 66.8% subjects were found to have LUTS of which 56.7% had mild, 42.5% had moderate and 0.8% had severe symptoms. Storage LUTS(66.5%) was the most common complaint seen followed by post-micturition(5.6%) and voiding LUTS(5%). The most prevalent symptoms seen were nocturia(62.9%) followed by urgency(26%) and frequency (12.1%). Study also showed that severity of LUTS increased with increasing age ( $p=0.001$ ), poor education ( $p=0.01$ ) and decrease in socioeconomic status( $p=0.01$ ). There is significant relationship between LUTS and QoL( $p=0.001$ ).

**Conclusions:** In the community studied, both males and females were equally affected with LUTS. Severity of LUTS increased with age and decreased with increase in education and socioeconomic status of subject. Most prevalent were storage LUTS followed by voiding and post-micturition LUTS. Nocturia was the most common symptom seen. LUTS and QoL have significant direct relationship.

**Keywords:** LUTS, Urinary, Infection, Symptoms, 50 years.

### **Introduction:**

Lower urinary tract symptoms (LUTS), includes a cluster of chronic urinary symptoms in the bladder, prostate or urethra resulting from a complex interplay of patho-physiologic features, comprising a progressive, age-related combination of storage, voiding, and post-micturition symptoms. LUTS include voiding symptoms like, hesitancy, straining, dribbling, incomplete emptying and, storage symptoms like nocturia, frequency, urgency and urgency incontinence and impotence<sup>[1]</sup>.

Both urological and non-urological conditions may contribute to LUTS. Benign prostatic hyperplasia (BPH) in men and parity and menopause in females are the principal underlying causes of LUTS<sup>[2][3]</sup>. The cause of LUTS was traditionally thought to be bladder outlet obstruction, but even those without outlet obstruction were symptomatic. Thus, suspected conditions related to LUTS other than BPH are age, cardiovascular diseases, depression, diabetes mellitus, bladder stone, detrusor muscle weakness, urethral stricture, use of ketamine, neurological conditions like multiple sclerosis, spinal cord injury and urinary tract infections.

LUTS can be assessed by International Prostate symptom score(IPSS)along with physical examination and other primary and secondary tests like serum PSA (Prostate Specific Antigen)test ,ultrasound, urinary flow studies, imaging ,prostate biopsy and Cystoscopy. Treatment varies from lifestyle modification to medical and surgical modality. Depending upon the cause, antibiotics for UTI; Stenting of prostate and urethra; urethral dilatation for strictures are other modalities. A 2014 meta-analysis found that, for elderly males with LUTS, sitting to urinate meant there was a decrease in post-void residual volume (PVR, ml), increased maximum urinary flow (Q max, ml/s), which is comparable with pharmacological intervention, and decreased the voiding time.

Though the symptoms of LUT are not life threatening but can substantially affect the Quality of Life(QoL) .These include loss of confidence, self-esteem and feeling of uncertainty keeping oneself isolated and withdraw from their normal life styles. LUTS affect self-perception and mental

LUTS represent an increasing problem in community because of increasing life expectancy. By assessing the magnitude of LUTS, it helps in implementing strategies enabling us to control the disease and to improve the QOL among elderly. Also by assessing the severity of LUTS proper interventions like life style management, medical and surgical treatment can be adopted thus preventing unnecessary treatment .Timely and appropriate advice is given to these elderly patients and this can go a long way in improving the QOL.

### **Materials and Methods**

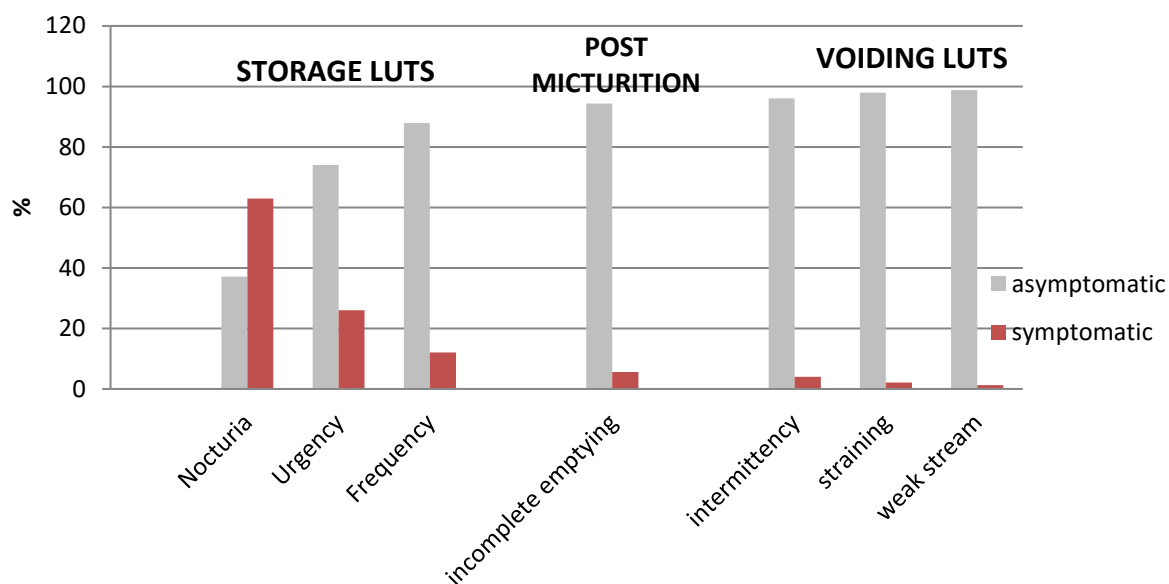
The study was conducted in Aarpookara Panchayath of Kottayam district, Kerala, in May-June 2018, after the approval from the Institutional Ethics Committee. It was a cross-sectional study done on 480 Adults >50 years of age in Aarpookara panchayath selected using cluster sampling technique. Aarpookara panchayath has 16 wards and each ward was considered as a cluster. With the help of Junior Public Health Nurse/ASHA worker,30 eligible subjects satisfying the inclusion and exclusion criteria from each ward(cluster) were recruited into the study. Selection of lane and 1<sup>st</sup> house in each ward was done by random selection by using the procedure discussed in cluster sampling technique used for evaluation of universal immunization coverage.

Pretested semi-structured interview based on I-PSS score (International-prostate symptom score) for assessing LUTS severity. Though I-PSS is used as a global tool for symptomatic assessment of prostatism, IPSS can be used to evaluate female LUTS <sup>[5]</sup>.The score is based on answers to seven questions concerning urinary symptoms and one question concerning quality of life (QOL).

Data was entered in Microsoft Excel. Analysis was done by SPSS version 21. Association between prevalence of LUTS ,QoL and socio-demographic variable was found out by using the chi-square test with p value of<0.05 was taken significant.

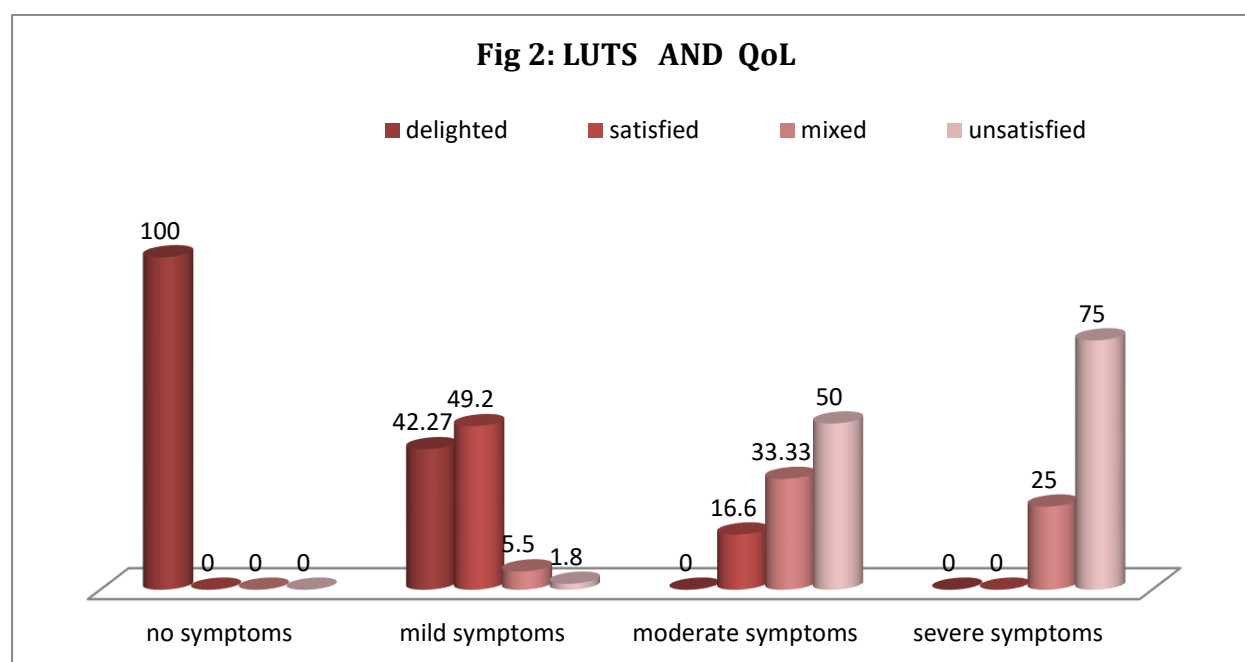
### **Results:**

Of 480 subjects studied 57.50% were females. 46.5% of the study subjects belonged to 50-59 years, 42.5% in 60-79 years and only 9.8% belonged to above 80 years. The mean age was 63 years severe LUTS symptoms.34% were asymptomatic,1% were having severe LUTS and 65% were having mild-moderate LUTS. Storage LUTS was the most common (66.5%) followed by post micturition (5.6%) and voiding symptoms (5%). Nocturia (63%) was the most common symptom whereas weak stream (1.3%) was least common (Fig 1). This study showed that LUTS are found almost equally in both sexes. Also there is a significant relationship between age and Socioeconomic status with severity of LUTS symptoms (Table 1). This study also showed that there is statistically significant association between QoL and LUTS score. (Fig 2)

**Fig1:symptom prevalence****TABLE 1: LUTS and variables**

	ASYMPTOMATIC	SYMPTOMATIC	P-VALUE
<b>AGE</b>	53.3%	46.7%	<b>P=0.001</b>
50-59 years	18%	32%	
50-79 years	10.7%	39.3%	
80-99 years			
<b>GENDER</b>	33%	57%	<b>P=0.86</b>
Males	34.4%	55.6%	
Females			
<b>RELIGION</b>	31.6%	58.4%	<b>P=0.32</b>
Hindu	34.3%	55.7%	
Christian	50.9%	39.1%	
Muslim			

TYPE OF FAMILY	37.7%	52.3%	P=0.64
Nuclear	29%	71%	
Joint			
SES	72%	28%	P=0.03
Upper class	32.2%	57.8%	
Middle class	3%	31%	
Lower class			



## Discussions

Only One-tenth of all participants reported moderate to severe symptoms compared to one-fifth participants in the Boxmeer study.<sup>[4]</sup> the study on Korean men above 40 years by showed that more than 90% of subjects had moderate to severe LUTS symptoms.<sup>[6]</sup> Study by Jung Ki Jo, et al, showed that prevalence of moderate to severe LUTS in those who had not been not diagnosed with LUTS/BPH was 64.5% and the prevalence of moderate to severe LUTS in those who had been diagnosed with LUTS/BPH but had not been treated was 23.5% .<sup>[7]</sup> This difference in prevalence of symptoms may be due to the fact that LUTS symptoms were assessed mainly In male population with or without BPH and hence there will be some LUTS symptoms.

Most studies showed that Nocturia is the most common LUTS symptoms seen consistent with study. the study by Tae Heon Kim et al showed that Storage LUTS (70.1%) were more prevalent than voiding (60.4%) or post micturition LUTS (38.3%).<sup>[6]</sup>nocturia, weak stream and urgency were common LUTS symptoms seen in the study conducted by ShakibahmedMasu, et al<sup>[8]</sup>

This study also showed that LUTS are found almost equally in both sexes. The BATCH survey conducted in Boston showed that LUTS symptoms did not vary significantly by consistent with this study.<sup>[9]</sup> Results from by Nancy N. Maserejian et al study showed that women had 50% higher odds of developing moderate-to-severe LUTS compared to men and this may be because hospital seeking behavior of men for BPH and prostate malignancies.<sup>[10]</sup>Equal sex distribution of LUTS shows that as BPH is the not only significant cause of LUTS as per traditional belief.

This study shows that there is statistically significant association between QoL and LUTS score. As severity of LUTS increases, QoL decreases. This study also shows that QoL has significant association between all LUTS symptoms. Jung Ki Jo et al study on Korean men shows that there is significant relationship between QoL and LUTS severity consistent with this study. <sup>[7]</sup>

**Conclusion:**

In the community studied ,both males and females were equally affected with LUTS. Severity of LUTS increased with age and decreased with increase in education and socioeconomic status of subject. Most prevalent were storage LUTS followed by voiding and post-micturition LUTS.Nocturia was the most common symptom seen.LUTS and QoL have significant direct relationship.

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**Conflicts of interest:** None

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