



# The association of risk factors with lower urinary tract symptoms: The Community Health Survey.



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## Introduction

- To evaluate the association of lower urinary tract symptoms (LUTS) with modifiable risk factors based on community Health Survey.

## Methods

- We analyzed data from the 2011 Korean Community Health Survey (KCHS) performed (August 2011–October 2011) in South Korea. The survey carried out to Korean men (n=67,457) who were 40 years of age or older and interview with questionnaires.
- The face-to-face survey of sociodemographic questionnaires with Computer Assisted Personal Interviewing (CAPI), International Prostate Symptom Score (IPSS), and standard question were done by trained interviewers.
- We assessed risk factors (Physical activity, cigarette smoking, alcohol intake, feeling stress, hypertension, diabetic mellitus (DM), and dyslipidemia) with LUTS.

Table 1. Selected characteristics of study subjects according to lower urinary tract symptom(LUTS)

	LUTS severity						Rao-Scott Chi-Square p-value
	Mild(8-IPSS)		Moderate (9-19)		Severe (20-35)		
	N	%	N	%	N	%	
Age (year)							
40-49	20,391	(43.6)	635	(12.0)	90	(5.7)	
50-59	18,336	(33.9)	1,480	(23.2)	263	(13.8)	
60-69	12,207	(15.0)	2,800	(29.3)	739	(28.3)	
70≤	7,456	(7.5)	4,111	(35.5)	1,707	(52.2)	
Physical activity (Exercise)							
Yes	25,546	(44.7)	3,952	(46.2)	1,000	(39.7)	
No	32,844	(55.3)	5,074	(53.8)	1,799	(60.3)	<0.001
Smoking							
Current smoker	24,660	(43.2)	2,738	(32.6)	781	(28.7)	
Former smoker	21,801	(36.7)	4,591	(49.5)	1,515	(53.0)	<0.001
None smoker	11,929	(20.1)	1,697	(17.9)	503	(18.3)	
Alcohol intake							
Current drinker	41,151	(74.5)	4,924	(59.8)	1,251	(46.4)	
None drinker	17,239	(25.5)	4,102	(40.2)	1,548	(53.6)	<0.001
Body mass index							
10- 18.5	1,357	(1.7)	588	(5.1)	305	(8.4)	
18.5-25.0	40,410	(68.4)	6,514	(72.4)	1,966	(69.5)	<0.001
25.0-50.0	16,623	(29.9)	1,924	(22.5)	528	(22.1)	
Stress							
Moderate to severe	13,639	(26.7)	2,265	(28.8)	957	(36.8)	<0.001
Mild	44,751	(73.3)	6,761	(71.2)	1,842	(63.2)	
Hypertension							
Yes	14,967	(19.2)	3,765	(40.3)	1,248	(45.3)	
No	43,413	(80.8)	5,258	(59.7)	1,551	(54.7)	<0.001
Diabetic mellitus							
Yes	6,243	(9.6)	1,670	(18.2)	592	(22.8)	
No	52,126	(90.4)	7,352	(81.8)	2,206	(77.2)	<0.001
Dyslipidemia							
Yes	6,624	(12.6)	1,260	(16.3)	377	(17.2)	
No	51,678	(87.4)	7,739	(83.7)	2,408	(82.8)	<0.001

SD, standard deviation. Value are expressed as mean ± SD or N (%).

## Results

Higher IPSS scores were checked in low physical activity (n=50,496, IPSS = 4.06±0.03) compared to high physical activity (n=19,719, IPSS=3.16±0.04) group.

Stress, Hypertension, DM, Dyslipidemia groups showed higher IPSS than normal groups. In cigarette smoking, current smoker was highest percentage (43.2%, p<0.01) in mild severity of LUTS, former smoker was highest percentage (50.3%, p<0.01).

## Results

Highest percentage of mild, moderate and severe LUTS were shown in current alcohol intake (mild: 74.5%, moderate: 59.8%, severe: 46.4%, p<0.0001).

In the multivariable model, low physical activity, stress, hypertension, diabetic mellitus, and dyslipidemia groups were related with LUTS. Also, smoker had related with LUTS and former smoker had quite higher OR than current smoker (OR 1.40; 95% CI 1.29,1.51;p<0.0001 vs OR 1.29; 95% CI 1.17,1.41;p<0.1359). However, Alcohol intake was not related with LUTS (OR 0.78; 95% CI 0.74, 0.84;p<0.01).

Table 2. Relationship between LUTS and Risk factors

	Multivariable model		
	OR	95% CI	p-value
Age (year)			
40-49	1.00	ref	-
50-59	2.27	(2.02,2.54)	<0.001
60-69	5.67	(5.03,6.40)	<0.001
70≤	13.22	(11.66,15.00)	<0.001
Physical activity (Exercise)			
No	1.00	ref	-
Yes	1.15	(1.07,1.24)	0.0002
Smoking			
None smoker	1.00	ref	-
Former smoker	1.40	(1.29,1.51)	<0.001
Current smoker	1.29	(1.17,1.41)	<0.001
Alcohol intake			
Current drinker	1.00	ref	-
None drinker	0.78	(0.74,0.84)	<0.001
Body mass index			
10- 18.5	1.00	ref	-
18.5-25.0	1.65	(1.43,1.90)	<0.001
25.0-50.0	0.85	(0.79,0.92)	<0.001
Stress			
Mild	1.00	ref	-
Moderate to severe	1.79	(1.67,1.92)	<0.001
Hypertension			
No	1.00	ref	-
Yes	1.18	(1.10,1.26)	<0.001
Diabetic mellitus			
No	1.00	ref	-
Yes	1.26	(1.17,1.37)	<0.001
Dyslipidemia			
No	1.00	ref	-
Yes	1.37	(1.25,1.50)	<0.001

LUTS, lower urinary tract symptom score, OR, odds ratio, CI, confidence interval.

P-value and P-value for trend were determined by multivariable logistic regression analyses.

## Conclusions

A history of smoking, low physical activity, DM, stress, hypertension, DM, and dyslipidemia were associated with LUTS deterioration. However, relationship between alcohol intake and LUTS deterioration had no significant association.

## References

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