A COMMUNITY SURVEY OF LOWER URINARY TRACT SYMPTOMS AND POSTVOID RESIDUAL AMONG MALE AGED 40 AND OLDER--ARE SELF-REPORTED SYMPTOMS RELIABLE INDICES FOR PATIENT EDUCATION?

Hypothesis / aims of study
Lower urinary tract symptoms (LUTS) are categorized as storage (urgency, frequency, nocturia and incontinence), voiding (sensation of incomplete emptying, hesitancy, weak stream and straining) or mixed symptoms. Although many epidemiology studies were done to reveal the prevalence rate of LUTS, little study include both questionnaire and objective measurements in the community setting. In this study, we investigated the prevalence of male LUTS and the associations between LUTS and post-void residuals as measured by bladder ultrasound.

Study design, materials and methods
A total of 613 eligible subjects were recruited from the community-based integrated screening program held in Hualien County in Taiwan. All subjects underwent a battery of questionnaires aimed to investigate subjects’ LUTS and self-management behavior. Demographic (age, body mass index - BMI, education, smoking, alcohol and exercise habits), past/ present medical history, were used for patient assessment. The International Prostate Symptom Score (IPSS) was administered for the assessment of LUTS (post-voiding, hesitancy, weak stream and straining) or mixed symptoms.

Was informed consent obtained from the patients? Yes
Was this study approved by an ethics committee? Yes
What were the subjects in the study? Male aged 40 and older
Is this study registered in a public clinical trials registry? No
Specify source of funding or grant Tzu-Chi College of Technology
Hualien County Health Bureau
Is this a clinical trial? No
Specify Name of Ethics Committee Tzu-Chi College of Technology
Was the Declaration of Helsinki followed? Yes

Results
584 (95.1%) subjects were included in the results analysis. Their mean age was 64.5±12.5 years. Average BMI was 24.85, with 27.2% overweight and 27.9% obese. The overall prevalence of storage (13%) and mixed (9%) symptoms were higher than that of voiding symptoms (11.1%). Mean score for the symptoms (S) subscale of IPSS was 2.6 ± 3.3. The prevalence of storage symptoms was similar across age groups, whereas voiding and mixed symptoms increased with age. Among voiding symptoms, nocturia was the most prevalent symptoms (47.1%), followed by postvoid dripping (33.2%), urgency (26.6%) and frequency (23.7%). In related to postvoid residuals, 47(7.8%) subjects obtained postvoid residuals more than 100cc, with limited awareness of LUTS. Finally, there was no significant correlation between IPSS score and post-void residuals volume.

Interpretation of results
Nocturia was the most prevalent voiding symptom, following by postvoid dripping, urgency and frequency. Reported prevalence rates were higher than other published study, due to advancing age among this sample. Nocturia was the most prevalent LUTS in this study. This result is in accordance with previous LUTS surveys in Europe and Japan. Yu et al. also reported a high prevalence rate of nocturia in Taiwanese people. However, poor association were found between post-void residual and LUTS. Hence, subjects with high post-void residual may have poor preception of LUTS. This raised a caution of proper patient education in the community if only based on subject self-reported symptoms.

Concluding message
Careful attention to individual symptoms may help distinguish different types of male voiding dysfunction. With objective measurement and careful evaluation of LUTS, community nurses may prevent further urinary tract disorder and promoting bladder health.

References