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## GYNAECOLOGY

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# Urinary Incontinence: Women Attending the Gynecology Outpatient Clinic Unaware of Symptoms

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### ABSTRACT

**Objectives:** To determine the prevalence, symptom characteristics, risk factors and impacts on quality of life (QoL) of urinary incontinence (UI) in Thai women attending a gynecology outpatient clinic.

**Materials and Methods:** Voluntary female participants attending a gynecologic outpatient clinic with a complaint of gynecologic problems but not of urinary incontinence at a medical university hospital were prospectively recruited during June 2019 and January 2020. The data were collected using self-reported questionnaires. A Urogenital Distress Inventory Short Form (UDI-6) and Incontinence Impact Questionnaire-Short Form (IIQ-7) in the Thai-version were used.

**Results:** The total of 354 participants were enrolled. One hundred and eighty-six women (52.5%) with gynecologic symptoms had experienced urinary incontinence during the past 3 months. The prevalence of urinary incontinence increased with age, vaginal delivery, and body mass index (BMI). Stress urinary incontinence (45.2%), urgency urinary incontinence (22.0%) and mixed urinary incontinence (32.8%) were reported among unrecognized urinary incontinence participants. A high BMI and constipation were found to be the significant factors associated with developing urinary incontinence. The QoL assessment from the IIQ-7 revealed that the women in the unaware group suffered a mild impact on UI from four domains of influence including physical activity, travel, social/relationships and emotional health of QoL.

**Conclusion:** Urinary incontinence was commonly found in Thai women attending a gynecology outpatient clinic. Despite experiencing the symptoms, however, the majority of them rarely sought treatment. This may be due to its mild symptoms.

**Keywords:** prevalence, urinary incontinence, unaware urinary incontinence.

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# การกลั้นปัสสาวะไม่อยู่: อาการที่ไม่ตระหนักในสตรีที่มาห้องตรวจผู้ป่วยนอกทางนรีเวช

มณฑกานต์ ศรีสนาม, ประนอม บุพศิริ, โฉมพิลาศ จงสมชัย, ธีระยุทธ เต็มธนะกิจไพศาล

## บทคัดย่อ

**วัตถุประสงค์:** เพื่อค้นหาความชุก ลักษณะอาการ ปัจจัยเสี่ยง และผลกระทบต่อคุณภาพชีวิต ของภาวะการกลั้นปัสสาวะไม่อยู่ในสตรีไทยที่มาตรวจที่ห้องตรวจนรีเวช

**วัสดุและวิธีการ:** คัดเลือกผู้เข้าร่วมวิจัยจากสตรีที่มาเข้ารับการตรวจที่คลินิกผู้ป่วยนอกนรีเวช ด้วยปัญหาทางนรีเวชอื่นที่ไม่ใช่ภาวะกลั้นปัสสาวะไม่อยู่ ที่โรงพยาบาลศรีนครินทร์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น ในช่วงเดือนมิถุนายน 2562 ถึง มกราคม 2563 โดยรวบรวมข้อมูลจากการใช้แบบสอบถาม ที่นำแบบฟอร์มของ Urogenital Distress Inventory Short Form (UDI-6) และ Incontinence Impact Questionnaire-Short Form (IIQ-7) ฉบับภาษาไทย

**ผลการศึกษา:** มีผู้เข้าร่วมการศึกษารวมทั้งสิ้น 354 คน สตรี 186 คน (ร้อยละ 52.5) ที่มีอาการทางนรีเวช และมีอาการกลั้นปัสสาวะไม่อยู่ในช่วง 3 เดือนที่ผ่านมา ความชุกของภาวะกลั้นปัสสาวะไม่อยู่เพิ่มขึ้นตามอายุการคลอดทางช่องคลอด และค่าดัชนีมวลกาย ภาวะโอบาามปัสสาวะเล็ด (ร้อยละ 45.2) ภาวะปัสสาวะรีบและราด (ร้อยละ 22.0) และภาวะปัสสาวะเล็ดราด (ร้อยละ 32.8) ในผู้ที่มีภาวะกลั้นปัสสาวะไม่อยู่ ค่าดัชนีมวลกายที่สูงและอาการท้องผูก พบว่าเป็นปัจจัยสำคัญที่เกี่ยวข้องกับการเกิดภาวะกลั้นปัสสาวะไม่อยู่ การประเมินคุณภาพชีวิต จาก IIQ-7 พบว่าสตรีในกลุ่มที่ละเลยอาการกลั้นปัสสาวะไม่อยู่ ได้รับผลกระทบเล็กน้อยต่อภาวะกลั้นปัสสาวะไม่อยู่ใน 4 โดเมน (การออกกำลังกาย การเดินทาง การเข้าสังคม / ความสัมพันธ์และสุขภาพทางอารมณ์) ของคุณภาพชีวิต

**สรุป:** ภาวะกลั้นปัสสาวะไม่อยู่พบได้ทั่วไปในสตรีไทย อย่างไรก็ตามแม้มีอาการ แต่ส่วนใหญ่แทบไม่ได้เข้ารับการรักษา อาจเป็นเพราะอาการไม่รุนแรง

**คำสำคัญ:** ความชุก, ภาวะกลั้นปัสสาวะไม่อยู่, ภาวะกลั้นปัสสาวะไม่อยู่โดยไม่ตระหนัก

## Introduction

Urinary incontinence (UI) is defined as any involuntary leakage of urine by the International Continence Society (ICS)<sup>(1)</sup>. Half of adult women experience urinary incontinence<sup>(2)</sup>. The prevalence of UI varies widely among countries according to the differences in definition used and the presenting thresholds among women in different cultures<sup>(3)</sup>. The prevalence among middle aged and postmenopausal women was 44-57%<sup>(4)</sup>, the prevalence was reported to be 4.8- 69.3% in Asia<sup>(5-7)</sup>.

One-quarter of the affected women sought care and not more than half were given treatment. Women with UI have an increased risk of falls, fractures, sleep deficit and urinary tract infection compared to continent women<sup>(8)</sup>.

Some patients may ignore the symptoms, suffer embarrassment or have a misconception about UI, which may account for the main reasons for not seeking treatments<sup>(3,9,10)</sup>. Therefore, urinary incontinence may be considerably under-reported<sup>(9)</sup>. According to the study conducted in Singapore<sup>(11)</sup>, which investigated ear nose and throat (ENT) patients, almost half of the patients (41.7%) ignored the UI symptoms. This was also the case in Turkey<sup>(12)</sup>, which reported the prevalence of unrecognized UI at 35.7%. The prevalence of unrecognized UI in Thai women, however, has not been investigated.

The primary outcome was aimed to determine the prevalence of UI in women who were not seeking treatments. In the current study, the term “unaware (unrecognized) of UI symptoms” was used to refer to this group of women and the secondary outcomes were aimed to describe the symptom characteristics, risk factors and impact on the quality of life (QoL) caused by UI in Thai women.

## Materials and Methods

The women who attended a gynecologic outpatient clinic at a medical university hospital in the northeast of Thailand were consecutively recruited until the targeted sample size was

obtained from June 2019 to January 2020. Women aged 18 years-old or over with the complaint of gynecologic problems but not UI were included, while women with urinary tract infection symptoms, cancer or pelvic organ prolapse stage 2 or more were excluded. The terms “unaware of or unrecognized” UI symptoms was used to refer to women who have UI symptoms but do not seek any treatments. All of enrolled voluntary participants completed an informed consent prior the project participation. Ethical approval was granted by the Human Research Ethics Committee, Khon Kaen University (HE621038). The data were prospectively collected of unaware UI symptoms from all participants using self-reported questionnaires. The validated Thai version of Urogenital Distress Inventory Short Form (UDI-6) was used to determine the urinary symptoms and how each symptom bothered the patient and the Incontinence Impact Questionnaire-Short Form (IIQ-7) was also used to ask about how the UI symptoms affected their activities, relationships and feelings<sup>(13)</sup>. If patients had experienced urine leakage related to the feeling of urgency, this was classified as urgency urinary incontinence (UUI). Stress urinary incontinence (SUI) was diagnosed when patients experienced urine leakage related to physical activity, coughing or sneezing. If patients had both symptoms they were assessed as mixed urinary incontinence (MUI).

The total score in each domain (physical activity, travel, social/relationships and emotional health) was converted into a range between 0 and 100. A lower score indicated better QoL; meanwhile, a higher score indicated detrimental effects on QoL.

Standardized terminology was used to describe UI that complied with the recommendations of an International Urogynecological Association (IUGA)/International Continence Society (ICS)<sup>(14)</sup>. UI symptoms were comprised of SUI that included involuntary leakage of urine on effort, physical exertion; sneezing or coughing; UUI (involuntary leakage of urine accompanied by or immediately

preceded by urgency); and MUI (involuntary leakage of urine associated with urgency and with exertion, effort, sneezing or coughing). Based on a study by Manonai et al<sup>(6)</sup>, the prevalence of UI in Thai women in the rural area was 36.5%. This assumed the prevalence of UI in the hospital may be at least or higher than in the community setting. To achieve a power of 80% and a level of significance of 5%, at least 354 patients were required.

### Statistical analyses

Statistical analysis was performed using SPSS program version 13.0. Normality testing was conducted using Kolmogorov-Smirnov testing. The descriptive data were expressed as percentages, means, and medians. The chi squared test was employed to evaluate factors associated with UI. A p value of < 0.05 were considered statistically significant. Multiple logistic regression analysis (forward stepwise) was used for multivariate

analysis.

## Results

Three hundred and ninety patients were contacted, fifteen patients refused to participate in the study. A total of 375 voluntary participants were offered the questionnaires. Only 354 voluntary participants, however, completed the questionnaires; the response rate was 94.4%. One hundred and eighty-six women (52.5%) who attended the gynecologic clinic with the complaint of gynecologic symptoms, except UI, had experienced UI symptoms during the past 3 months.

Among participants unaware of UI symptoms, 45.2% (84 women) had SUI; 22.0% (41 women) had UUI; and 32.8% (61 women) had MUI.

The baseline characteristics of participants are shown in Table 1. Age, body mass index (BMI), the history of vaginal birth and constipation were significantly different from normal.

**Table 1.** Characteristics of participants (n = 354).

Variables	With UI (n=186)	Without UI (n=168)	p value
Age (years), mean (SD)	44.30 (10.07)	40.51(10.64)	0.0007
BMI (kg/m <sup>2</sup> ), mean (SD)	24.21 (3.99)	22.89 (3.82)	0.0017
Comorbidity, n (%)			
Yes	121 (65.05)	121 (72.02)	0.159
No	65 (34.95)	47 (27.98)	
Education level, n (%)			
- No formal schooling	1 (0.53)	0 (0.00)	0.492
- Primary school	24 (12.90)	14 (8.33)	
- Secondary school	35 (18.81)	29 (17.30)	
- Vocational/Technical/College	18 (9.70)	16 (9.50)	
- University	108 (58.06)	109 (64.88)	
Vaginal delivery, n (%)			
- Yes	111 (59.70)	70 (41.67)	0.001
- No	75 (40.30)	98 (58.33)	
Sexually active, n (%)			
- Yes	137 (73.66)	123 (73.21)	0.925
- No	49 (26.34)	45 (26.79)	

**Table 1.** Characteristics of participants (n = 354). (Cont.)

Variables	With UI (n=186)	Without UI (n=168)	p value
Occupation, n (%)			
- Unemployed	5 (2.69)	7 (4.20)	0.077
- Labor	4 (2.15)	1 (0.60)	
- Employment	12 (6.45)	5 (2.98)	
- Agriculture	27 (14.52)	11 (6.55)	
- Government service	57 (30.65)	56 (33.33)	
- Trade	17 (9.14)	16 (9.50)	
- Other	64 (34.40)	72 (42.86)	
Constipation, n (%)			
- Yes	18 (9.70)	6 (3.57)	0.022
- No	168 (90.30)	162 (96.43)	
Menopausal status, n (%)			
- Yes	46 (24.73)	38 (22.62)	0.641
- No	140 (75.27)	130 (77.38)	

UI: urinary incontinence, BMI: body mass index, SD: standard deviation

The prevalence of UI increased with age, vaginal delivery, and BMI as shown in Table 2.

Age, BMI, vaginal delivery and constipation were identified as the potential risk factors for developing UI (Table 3). Women aged 40-59 years were more than twice as likely to have UI than those aged 18-39 years (odds ratio (OR) 2.28, 95% confidence interval (CI)

1.44-3.58). The obese participants (BMI > 30 kg/m<sup>2</sup>) were more than three times as likely to have UI than normal weight participants (OR 3.16, 95%CI 1.29-7.75). Moreover, vaginal delivery and constipation (fewer than 3 times a week) were more than twice as likely to have UI (OR 2.07, 95%CI 1.35-3.16 and OR 2.89, 95%CI 1.12-7.47).

**Table 2.** Prevalence of unaware urinary incontinence symptoms in various subgroups.

Variables	Number of UI women	Prevalence of UI	95% CI
Age (years)			
18-39	48	39.02	30.35 - 48.23
40-59	127	59.35	52.43 - 65.98
≥ 60	11	64.71	38.32 - 85.79
Vaginal delivery			
- Yes	111	61.33	53.81 - 68.45
- No	75	43.35	35.85 - 51.08
Sexually active			
- Yes	137	52.69	46.43 - 58.89
- No	49	53.13	41.57 - 62.54
BMI (kg/m <sup>2</sup> )			
< 18.5	9	39.13	19.70 - 61.45
18.5 - 24.9	107	48.64	41.86 - 55.44
25 - 29.9	49	59.04	47.69 - 69.71
≥ 30	21	75	55.12 - 89.30

UI: urinary incontinence, CI: confidence interval

**Table 3.** Unadjusted odds ratios (OR) of potential risk factors for unaware urinary incontinence symptoms.

Variables	Number of women	Unadjusted OR	95% CI	p value
Age (years)	354	1.03	1.01 - 1.05	0.001
18 - 39	123	Reference		
40 - 59	214	2.28	1.44 - 3.58	< 0.001
≥ 60	17	2.86	0.99 - 8.25	0.051
BMI (kg/m <sup>2</sup> )				
< 18.5	23	0.67	0.28 - 1.63	0.387
18.5 - 24.9	220	Reference		
25 - 29.9	83	1.52	0.91 - 2.53	0.107
≥ 30	28	3.16	1.29 - 7.75	0.012
Comorbidity				
- Yes	242	1.38	0.80 - 2.17	0.160
- No	112	Reference		
Education level				
- No formal schooling + Primary school	39	1.80	0.88 - 3.65	0.102
- Secondary school	64	1.21	0.69 - 2.13	0.490
- Vocational/Technical/College	34	1.13	0.55 - 2.34	0.731
- University	217	Reference		
Vaginal delivery				
- Yes	181	2.07	1.35 - 3.16	0.001
- No	173	Reference		
Sexually active				
- Yes	260	1.02	0.63 - 1.64	0.925
- No	94	Reference		
Occupation				
- Unemployed	12	Reference		
- Labor	5	5.60	0.47 - 66.44	0.172
- Employment	17	3.36	0.71 - 15.84	0.126
- Agriculture	38	3.43	0.89 - 13.18	0.072
- Government service	113	1.42	0.42 - 4.75	0.565
- Trade	33	1.48	0.39 - 5.65	0.560
- Other	136	1.24	0.37 - 4.11	0.720
Constipation				
- Yes	24	2.89	1.12 - 7.47	0.028
- No	330	Reference		
Menopausal status				
- Yes	84	1.12	0.68 - 1.83	0.641
- No	270	Reference		

CI: confidence interval

When multivariate analysis was used, using the forward stepwise method that adjusted the possible risk factors for UI and by entering all significant factors ( $p < 0.2$ ) (including age, BMI, vaginal delivery and

constipation), the analysis revealed that only BMI and constipation remained as statistically significant risk factors associated with an increased likelihood of having UI (Table 4).

**Table 4.** Adjusted odds ratios (OR) of potential risk factors for unaware urinary incontinence symptoms.

Variables	Adjusted OR	95% CI	p value
Age (years)	1.02	1.00 - 1.05	0.028
BMI	1.08	1.02 - 1.15	0.004
Vaginal delivery	1.50	0.93 - 2.44	0.098
Constipation	3.36	1.26 - 8.92	0.015

Adjusted age, BMI, vaginal delivery and constipation  
CI: confidence interval, BMI: body mass index

To investigate QoL using IIQ-7 and severity of each of the UI symptoms, four domains were evaluated, including physical activity, travel, social/relationships and emotional health. The median scores of four domains in unaware SUI symptoms were 0, 16.66, 0 and 0; in unaware UUI scores 0, 16.66, 16.66 and 0; and 0, 16.66, 16.66 and 0 in unaware MUI (Table 5).

This might indicate that the women in the unaware groups only suffered a mild impact on UI on QoL.

As for healthcare-seeking behavior in the subjects unaware of UI symptoms, 65.1% (121 patients) thought that the UI symptoms did not bother them and 32.3% (60 patients) thought that it was a normal part of the aging process.

**Table 5.** Quality of life scores regarding each type of urinary incontinence (IIQ-7).

	Physical activity (0-100)	Travel (0-100)	Social/ Relationships (0-100)	Emotional health (0-100)
Stress urinary incontinence (score), median (IQR)	0 (0, 16.66)	16.66 (0, 33.33)	0 (0, 33.33)	0 (0, 16.66)
Urgency urinary incontinence (score), median (IQR)	0 (0, 16.66)	16.66 (0, 33.33)	16.66 (0, 33.33)	0 (0, 16.66)
Mixed urinary incontinence (score), median (IQR)	0 (0, 16.66)	16.66 (0, 33.33)	16.66 (0, 33.33)	0 (0, 16.66)

IQR: interquartile range

## Discussion

The prevalence of UI in women seeking healthcare for non-UI related symptoms in a gynecology clinic was 52.5%. Among participants unaware of UI, the prevalence was considerably high similar to the study by Luo et al who investigated the prevalence in Singapore<sup>(11)</sup>. It was reported 41.7% in ENT patients. These findings were consistent with a study which reported the prevalence of hidden UI 35.7% in Turkey<sup>(12)</sup>. The high rate of hidden UI may suggest that if the prevalence was collected solely from the complaint symptoms, the actual prevalence may be under reported.

Advancing age is established as the potential

risk of UI<sup>(15)</sup>. Based on the multivariate logistic regression, in the case of hidden symptoms, BMI and constipation were significant factors associated with developing UI. The findings of this current study did not support the data from Luo et al<sup>(11)</sup> who studied ENT patients, revealed that age, vaginal delivery and being sexually active were associated with urinary incontinence. The differences in those risk factors may be due to the different settings of patients in the gynecologic clinic and ENT clinic. Moreover, the studies in Thailand on the risk of UI revealed that chronic cough, chronic constipation, vaginal delivery, menopause were reported in women younger than 50 years of age. Furthermore, never receiving hormone therapy and high

BMI were the risk factors associated with UI in postmenopausal women<sup>(16-18)</sup>.

Despite the high prevalence of hidden UI among Thai women, most patients overlooked the urinary symptoms. According to the scores of Thai version IIQ-7, the median scores of SUI, UUI and MUI were significantly low. It may be the case that the unaware patients had only mild symptoms which might not affect their daily life such as physical activity, travel, social/relationships and emotional health. The results matched the data of those observed in Singapore and Turkey<sup>(5,13)</sup>. Consistent with the findings of Cetinel et al<sup>(12)</sup> and Cooper et al<sup>(19)</sup>, the patients were not likely to seek treatment. This may be because the symptoms were not disturbing their daily life activities (see the QoL scores). Whereas the QoL scores in symptomatic UI women were more significantly impaired than control in postmenopausal women<sup>(20)</sup>.

Some unaware patients perceived that UI was the normal process of aging. The data from Singapore also claimed the same reasons for not seeking health care<sup>(14)</sup>. Therefore, it was argued from the study that the knowledge of UI symptoms, factors and treatment options should be transferred to general public in order to raise public awareness. Moreover, in the case of mild symptoms, behavioral and lifestyle modifications such as weight reduction, fluid management, bladder training and pelvic floor muscle training were considered the first line therapy with a 50% reduction of incontinence episodes<sup>(21)</sup>. Despite the high prevalence of hidden UI, one third believed that the condition was a stage of aging process. Thus, to alleviate and improve QoL of patients with unrecognized UI, UI symptoms should be addressed in gynecologic clinics during history taking even though patients come with gynecologic problems not with UI problems. To prevent the worsening of the UI symptoms, behavioral and lifestyle modification should be counseled to patients with UI symptoms.

The present study was based on a prospective study illustrating the prevalence of the unawareness of UI among Thai women who came with the gynecologic symptom complaints but not of UI at a hospital setting. This may not represent the cases in the community. The lack of generalization, lack of physical examination

and objective data regarding UI such as a pad test were considered as limitations to this study.

## Conclusion

Urinary incontinence appeared to be a common disease among Thai women. It was the case, however, that even though experiencing the UI symptoms, the majority of the patients nevertheless, rarely sought treatment due to the mild symptoms and they were inclined to consider the problem as one of the aging process.

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## Potential conflicts of interest

The authors declare no conflict of interest.

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