

THE IMPACT OF MENSTRUAL PRODUCTS ON VOIDING DYSFUNCTION IN WOMEN



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Introduction

- The latest large-scale survey on the use of menstrual hygiene products in Taiwan showed that over 90% of Taiwanese women prefer using sanitary pads, followed by tampons, while other related products have a usage rate of less than 5%.
- Menstrual cups has been developed since the 1930s with currently about 200 brands available globally.
- With the limitations of government policy in Taiwan, reusable menstrual hygiene products were not common until the past decade. Since the development of first menstrual cup in Taiwan in 2017, online discussions and big data research indicate a positive shift in feedbacks, transitioning from a focus on pain to convenience and eco-friendliness.

Aim of the study

To investigate the occurrence of symptoms related to the use of menstrual hygiene products among women through an online questionnaire and assess the impact of these symptoms on daily life.

Materials and methods

- An anonymous electronic questionnaire survey among women of reproductive age
- Survey contents:
  - Storage voiding symptoms (frequency and urgency)
  - Emptying voiding symptoms (difficulty in voiding, hesitancy, intermittency, and incomplete bladder emptying)
  - Incontinence (stress(SUI) or urge (UUI) urinary incontinence)
  - Dysuria
  - Vaginal pain
  - Perineal itchiness.
  - Whether participants sought medical assistance during and after menstruation due to the above symptoms.
  - Each symptom was scored on a scale of 0 to 5 during and after menstruation.
- Compared symptoms between users of non-invasive products (Group 1(G1): menstrual pads or underwear) invasive products (Group 2 (G2): tampons, menstrual cups, or discs)

Interpretation

- In Taiwan, about 70% women used menstrual pads or menstrual underwear during menstruation. Older age, sexual experience, and parity are more likely to invasive products
- A significant **improvement in overall symptoms** was observed after menstruation, except for urinary incontinence or the need for medical assistance.
- **Urgency** (aOR = 0.39, p = 0.039) and **incomplete emptying** (aOR = 0.42, p = 0.024) are significantly less common in G2 (invasive users)
- There is a trend suggesting that G2 experienced more symptom changes in frequency, urgency, difficulty in voiding, hesitancy, and intermittency compared to G1. However, these differences were not statistically significant

Conclusions

- During menstruation, women experienced generally more voiding symptoms, except for urinary incontinence and the need for medical help
- Invasive menstrual products are associated with fewer symptoms of urgency and incomplete bladder emptying during menstruation compared to non-invasive products.

References

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Results

Table 1. Baseline characteristics of study population

	Type of menstrual products			
	Total	G1 (Non-invasive)	G2 (Invasive)	
	n=227	n=160	n=67	p-value
Age, years	32 (28-37)	31 (27-36)	34 (32-40)	0.001
Current residence				0.276
Northern Taiwan	123 (54.2)	86 (53.8)	37 (55.2)	
Central Taiwan	43 (18.9)	32 (20.0)	11 (16.4)	
Southern Taiwan	46 (20.3)	30 (18.8)	16 (23.9)	
Eastern Taiwan	8 (3.5)	8 (5.0)	0 (0.0)	
Other countries	7 (3.1)	4 (2.5)	3 (4.5)	
Education level				0.561
High school	8 (3.5)	7 (4.4)	1 (1.5)	
University	173 (76.2)	121 (75.6)	52 (77.6)	
Graduate school	46 (20.3)	32 (20.0)	14 (20.9)	
Sexual experience				0.003
No	57 (25.8)	49 (31.4)	8 (12.3)	
Yes	164 (74.2)	107 (68.6)	57 (87.7)	
Missing	6	4	2	
Parity				<0.001
No	171 (75.7)	130 (81.8)	41 (61.2)	
Yes	55 (24.3)	29 (18.3)	26 (38.8)	
Missing	1	1	0	

Figure 1. Comparison of symptoms during the menstruation and after menstruation among all women.

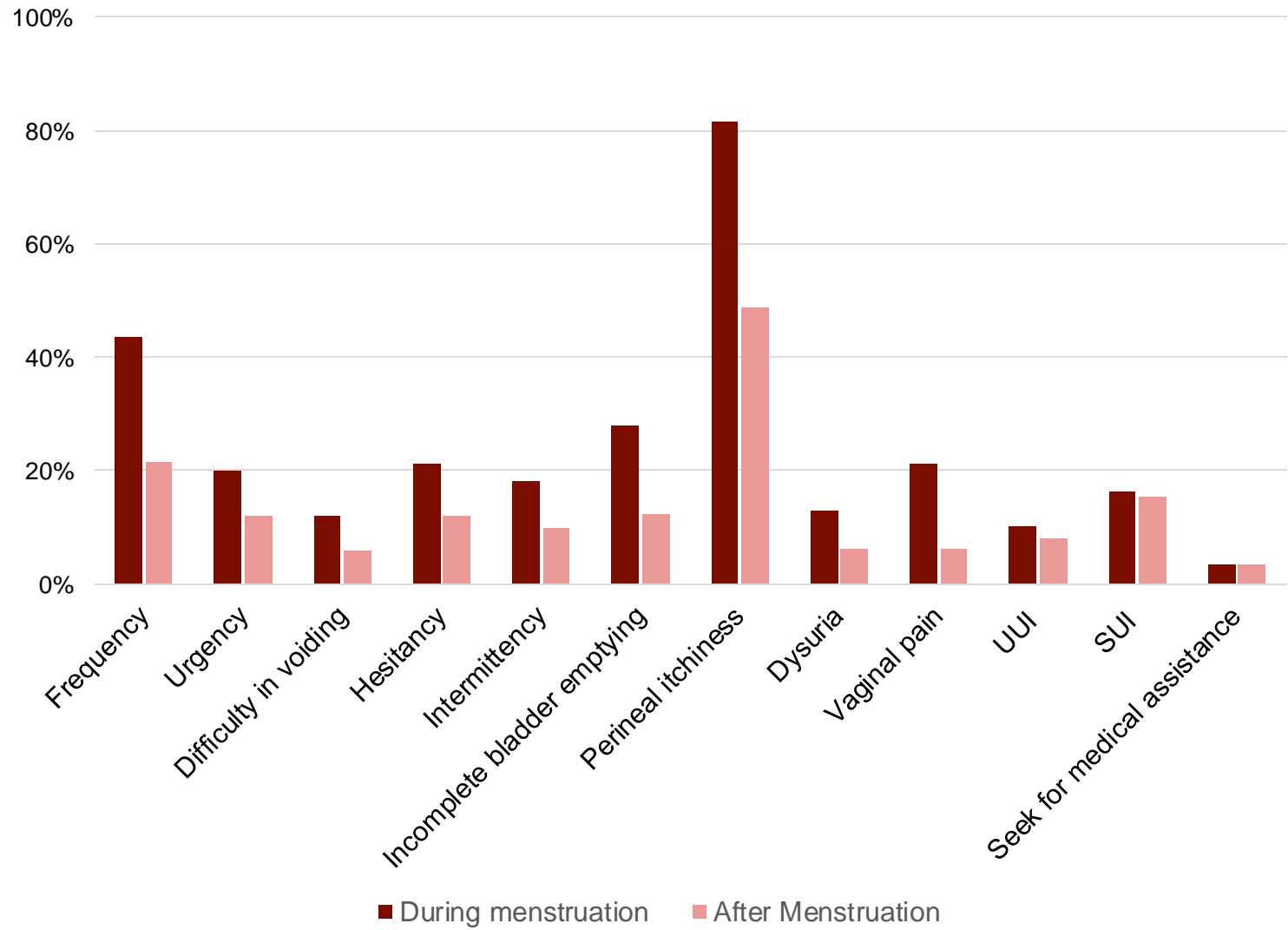


Table 2. Comparison of symptoms during their menstruation between G1 (Non-invasive) and G2 (Invasive).

	Type of menstrual products	aOR <sup>a</sup> (95% CI)	p-value
Frequency	G2 vs. G1	0.70 (0.37-1.29)	0.252
Urgency	G2 vs. G1	0.39 (0.16-0.95)	0.039
Difficulty in voiding	G2 vs. G1	1.10 (0.44-2.76)	0.843
Hesitancy	G2 vs. G1	0.93 (0.44-1.96)	0.838
Intermittency	G2 vs. G1	0.69 (0.31-1.56)	0.376
Incomplete emptying	G2 vs. G1	0.42 (0.20-0.89)	0.024
Perineal itchiness or erythema			
None		ref.	
Rarely	G2 vs. G1	1.22 (0.52-2.83)	0.650
Occasionally	G2 vs. G1	0.56 (0.23-1.36)	0.202
Usually	G2 vs. G1	0.36 (0.08-1.52)	0.163
Almost always	G2 vs. G1	NA	-
Dysuria	G2 vs. G1	2.31 (0.75-7.07)	0.144
Vaginal pain	G2 vs. G1	0.90 (0.44-1.87)	0.786
UUI	G2 vs. G1	2.71 (0.85-8.66)	0.093
SUI	G2 vs. G1	2.20 (0.93-5.22)	0.075
Seek medical assistance	G2 vs. G1	1.23 (0.27-5.66)	0.787

<sup>a</sup> Adjusted for age, sexual experience, and parity).

Table 3. Comparison of differences in symptoms during their menstruation between G1 (Non-invasive) and G2 (Invasive).

	Type of menstrual products	aOR <sup>a</sup> (95% CI)	p-value
Frequency	G2 vs. G1	1.34 (0.70-2.56)	0.378
Urgency	G2 vs. G1	1.14 (0.28-4.69)	0.857
Difficulty in voiding	G2 vs. G1	2.15 (0.79-5.82)	0.132
Hesitancy	G2 vs. G1	1.28 (0.54-3.04)	0.570
Intermittency	G2 vs. G1	1.18 (0.47-2.96)	0.729
Incomplete emptying	G2 vs. G1	0.55 (0.24-1.26)	0.159
Perineal itchiness	G2 vs. G1	1.22 (0.66-2.26)	0.533
Dysuria	G2 vs. G1	0.41 (0.11-1.51)	0.182
Vaginal pain	G2 vs. G1	1.16 (0.51-2.62)	0.721
UUI	G2 vs. G1	0.46 (0.12-1.84)	0.274
SUI	G2 vs. G1	0.37 (0.12-1.15)	0.086
Seek medical assistance	G2 vs. G1	1.33 (0.11-15.82)	0.824

<sup>a</sup> Adjusted for age, sexual experience, and parity).