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24/7 USE OF CONTINENCE PADS AND IMPAIRED QUALITY OF LIFE IN WOMEN WITH URINARY INCONTINENCE.

Hypothesis / aims of study
The aims of the study were as follows: (i) to compare the quality of life (QoL) in women with urinary incontinence (UI) using continence pads only during the day versus all day and night; (ii) to identify the time-frame for the onset of deteriorated QoL in female UI.

Study design, materials and methods
A cross-sectional study was conducted in a group of 331 consecutive women referred to an urogynecology ambulatory clinic due to lower urinary tract symptoms. Medical history was taken, urogynecological and urodynamic examinations were performed according to the standards of the International Continence Society. The degree of prolapse was assessed using the Pelvic Organ Prolapse Quantification (POP-Q). The subjects were asked to complete a disease-specific QoL questionnaire – the King's Health Questionnaire (KHQ). Detailed questions were asked about symptom severity, as well as day and night use of continence pads. A total of 307 women with UI were enrolled for further analysis and categorized according to the use of absorbent materials. Group I included women using continence pads only during the day i.e. in and outside the home, only outside the home, occasionally or changing underwear, but not at night. Group II consisted of patients using continence pads during day and night (24 hours). Patients not using continence pads or only for hygiene reasons were excluded. Medical history, urogynecological examination and questionnaire scores were compared. Altman's nomogram was used to determine the sample size for approximately 60 subjects in each group to give 80% power to detect a difference of 15 units in KHQ scores based on SD=30.0 at a significance level of 5%.

Results
Out of 307 women with UI, only 28 (9.1%) did not use any protection during the day, and 168 (54.7%) during the night. Eighty-nine (29%) patients with UI used continence pads for 24 hours/day and 176 (57.3%) patients used continence pads only during the day. Diapers for adults were used by 15 (16.8%) patients in Group II but none in Group I.
A total of 265 women with UI were recruited for the study: 217 (81.9%) were diagnosed with Stress Urinary Incontinence (SUI), 29 (10.9%) with Mixed Urinary Incontinence (MUI), and 19 (7.2%) with Urgency Urinary Incontinence (UUI). POP assessment revealed stage 0 POP-Q in 23 (8.7%) patients, I - 43 (16.2%), II - 185 (69.8%), III - 14 (5.3%), IV – none. No differences were found in terms of age, parity, menopause, type of UI, stage of POP-Q and percentage of sexually active subjects between Groups I and II. Women using continence pads 24 hours/day had significantly higher Body Mass Index (BMI) (28.1 ± 5.1 vs. 26.7 ± 5.0, $p<0.05$) and lower education as compared to patients using continence pads only during the day ($p<0.05$). The characteristics of the study population are presented in Table 1.
Based on the KHQ evaluation, QoL was significantly deteriorated in Group II as compared to Group I in the following domains: Incontinence Impact, Role-, Physical-, and Social Limitations, Emotions, Sleep/Energy and Severity Measures ($p<0.01$). Additionally, the scores in General Health Perception and Personal Relationships domains indicated lower QoL, but did not reach statistical significance (Table 2). The correlation analysis and hierarchical linear regression revealed no significant impact of BMI on the KHQ scores.

Interpretation of results
Out of the UI women consulted in an urogynecological ambulatory clinic, approximately one-third used continence pads over the period of 24 hours/day, which resulted in significantly deteriorated QoL as compared to patients using continence pads only during the day.

Concluding message
Continence pad use is an important aspect of the QoL assessment in women with UI. The questions about continence pad use should become an obligatory part of the medical interview as it might pinpoint the exact moment when more active management of patients with UI is necessary.

Table 1 Characteristics of the study population

Variable	Group I Continence pads only during the day (n=176)	Group II Continence pads day and night ALL 24 hours (n=89)	P value

Type of UI n (%)
  SUI
  MUI
  UUI
	145 (82.40
	21 (11.9)
	10 (5.7)
		72 (80.9)
		8 (9.0)
		9 (10.1)
			0.35[a]

Age (years) Mean ± SD	55.3 ± 10.8	53.8 ± 10.1	0.45[b]
BMI (kg/m^2) Mean ± SD	26.7 ± 5.0	28.1 ± 5.1	**<0.05[b]**

Postmenopausal n (%)	123 (70.7)	64 (71.9)	0.95[a]

Education level n (%)
  Primary
  Secondary
  Higher
	16 (9.2)
	109 (62.6)
	49 (28.2)
		19 (21.3)
		48 (53.9)
		22 (24.7)
			<0.05[a]

POP-Q n (%) 0 I II III IV	16 (9.1) 23 (13.1) 126 (71.6) 11 (6.3) 0	7 (7.9) 20 (22.5) 59 (66.3) 3 (3.4) 0	0.21[a]
Parity Mean ± SD (median)	2.2 ± 0.9 (2)	2.4 ±1.4 (2)	0.44[b]
Sexual activity n(%)	147 (84.5)	75 (84.3)	>0.05[a]

[a] Chi-square test
[b] Mann-Whitney U test

Table 2 Mean scores in KHQ domains

KHQ domains	Group I Continence pads only during the day (n = 176)*	Group II Continence pads day and night All 24 hours (n = 89)*	P value (Mann-Whitney U test)
General health	33.9 ± 22.7	39.9 ± 26.0	0.07
Incontinence impact	**50.8 ± 32.8**	**68.2 ± 30.5**	**<0.001**
Role limitations	**44.5 ± 29.0**	**57.3 ± 30.5**	**<0.01**
Physical limitations	**47.5 ± 30.1**	**63.0 ± 30.2**	**<0.001**
Social limitations	**23.3 ± 28.6**	**41.2 ± 31.3**	**<0.001**
Personal relationships	28.7 ± 30.5	37.0 ± 35.2	0.15
Emotions	**33.3 ± 29.6**	**50.9 ± 33.1**	**<0.001**
Sleep/Energy	**29.2 ± 30.8**	**50.8 ± 33.1**	**<0.001**
Severity measures	**48.9 ± 28.3**	**69.6 ± 26.0**	**<0.001**

*Data presented as mean ± standard deviation
The scores for each domain range from 0 to 100, with 0 representing the best and 100 the worst health status.