

A Tool for Subject Assessment of Incontinence Symptoms and Episodes



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BACKGROUND

A study was undertaken to develop a tool that would allow the assessment of episode-free, symptom-free and limitation-free days in persons with urinary incontinence. This tool was also designed to accommodate for types of incontinent episodes and relate these episodes to symptoms and activity limitations.

METHODS

A seven-day voiding diary was constructed based upon literature review, clinician input and other incontinence diaries. The diary required patients to record a description of each episode (time, type, and severity), as well as report day and nighttime symptoms and functional interference. 41 patients with urinary incontinence (stress, mixed and urge) were recruited for baseline interviews. Data on a variety of subjective outcome measures were collected. Each patient was then randomly assigned to a seven-consecutive-day period between the baseline and follow up measures in which they were to complete the voiding diary. A repeat battery of outcome measures was collected 30 days after the baseline visit.

INCONTINENCE VOIDING DIARY

The diary exercise consists of the completion of a one-day diary for seven straight days. The diary was to be filled out in 4 sections: upon waking, during the day, and two sections before going to bed:

Section 1

Please complete this section UPON WAKING: _____
Day & Date _____

During the past night, did you wake up needing to void? NO YES #Times _____
During the past night, did you have any incontinent episodes? NO YES #Times _____

Loss of urine at night while sleeping	Unable to ignore the urge to urinate
Loss of urine before reaching the bathroom	Lower back pain related to bladder condition
A strong urgent need to urinate	Bladder pain or cramping
Getting up at night more than once urinate	Inability to stop urination once it starts
Difficulty starting urination	Strain to complete urination
Urine stream starts/stops	Feeling of incomplete emptying

The 3 questions to be completed upon waking consisted of UI-related occurrences during the previous night. The first two questions ask about the number of times during the past night the patient woke up needing to void and the number of times an incontinent episode took place. This was followed by a set of 12 symptoms the patient was to check if experienced during the night.

Section 2

Please Complete the Following Voiding Diary
DURING YOUR DAY

Line	Time	AM 7-6	8-9	9-10	10-11	PM 12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	AM 11-12	12-3	3-6	
1	Voided																			
2	Incontinence Episode (SL)																			
3	Stress																			
4	Urge																			
5	Pad/change																			
6	Times asleep																			

Section 2 consists of a voiding pattern chart, to be filled out during the day. It is split by hours of the day, from 6 am to 6 am, and has spaces to include how many times one has voided (in any hour), whether it was a small or large episode, whether the episode was stress-related or urge-related, and whether or not a change of pad or clothing occurred.

Section 3

ABOUT YOUR DAY: _____
Day & Date _____

What sort of protection did you use today for incontinent episodes?
 None Regular or Maxi Pad Adult Garment or Diaper
 Mini Pad Other (what type) _____

Did your symptoms cause you to limit any of the following normal activities?

Activity	Not Limited at all	Somewhat Limited	Quite a bit Limited	Extremely Limited
Ability to work outside the home				
Domestic chores and family responsibilities				
Social and leisure activities				
Ability to get things done as desired				

Section 3 involves answering 1 question about the protection used for incontinent episodes during the day, as well as a set of 4 questions about any limitations of normal activities (ability to work outside the home, chores/family responsibilities, social activities, and ability to get things done as desired) the patient may have experienced during the day.

Section 4

BEFORE GOING TO SLEEP ON: _____
Day & Date _____

Please check all of the symptoms you experienced during the day.

Loss of urine with activity	Unable to ignore the urge to urinate
Loss of urine before reaching the bathroom	Lower back pain related to bladder condition
A strong urgent need to urinate	Bladder pain or cramping
The need to urinate more often than every three hours	Inability to stop urination once it starts
Difficulty starting urination	Strain to complete urination
Urine stream starts/stops	Feeling of incomplete emptying

Was this a "typical" day for you? Please comment about anything that made it an unusual day for you.

The final section, section 4, was to be answered before going to sleep. It asks about 12 symptoms (similar to those previously asked in section 1) and whether or not any of them were experienced during the day.

RESULTS

Table 1: Demographic Characteristics of the UI Sample (n=41)

Demographics	
Age (Years)	
- Mean (Std.Dev.)	51.2 (10.6)
- Minimum	18
- Maximum	79
Gender:	
% Male	19.5
% Female	80.5
Ethnicity	
% White (non-Hispanic)	83
% Black/African American	10
% American Indian/Alaskan Native	0
% Asian/Pacific Islander	0
% Hispanic/Latino	5
% Other	0
Marital Status	
% Married or Living As Married	37
% Widowed	10
% Separated	2
% Divorced	37
% Never Married	15
Income	
% Under \$25,000	41
% \$25,000-\$49,999	32
% \$50,000 and Over	22
% Missing	5
Education	
% High School	27
% College	34
% Graduate and Professional School	39

Table 3: Episode-Free Days Statistics

	Total	Typical Only
Day #1	5	3
Day #2	8	7
Day #3	10	7
Day #4	10	5
Day #5	11	5
Day #6	13	7
Day #7	8	2
Total Week	65	36
Average for week	9.29	5.14
# of patients with episode-free days	18	24
Pearson Correlation		
Disability Days from study battery	0.41 (p<.01)	0.62 (p<.001)

* Approximately how many days in the past month were you free from episodes of incontinence, pain, urgency, or related sleep disturbances?

Table 4: Symptom-Free Days Statistics

	Average Number of Symptoms	Average Number of Symptoms (Typical)
Total Night Symptoms	3.13	3.34
Total Day Symptoms	4.43	4.44
Total 24-hour Symptoms	5.94	6.03
# of patients with symptom-free days	3	3
Pearson Correlation		
Disability Days from study battery	0.58 (p<.001)	0.50 (p<.001)

* Approximately how many days in the past month were you entirely free from any symptoms related to your urinary problems?

Table 2: Voiding Diary Variable Descriptives (n=40: 1 patient missing diary data)

	Mean	Std.Dev.	Min	Max
Number of diaries taken (out of seven days)	6.98	0.16	6.00	7.00
Average times voided per night	1.34	1.14	0.00	5.86
Average number of episodes per night	0.25	0.36	0.00	1.50
Average number of symptoms experienced per night	3.13	2.16	0.00	7.71
Average times voided per day	9.97	4.98	2.43	32.57
Average number of episodes per day	0.30	0.67	0.00	2.86
Average number of stress episodes per day	1.25	2.00	0.00	10.00
Average number of urge episodes per day	2.49	3.27	0.00	12.29
Total times had to change clothing (for the week)	5.70	11.50	0.00	52.00
Average number of hours slept per night	7.07	2.88	0.00	12.14
Average limited activities score (4=not limited to 16=extremely limited)	6.31	3.10	4.00	16.00
Average number of symptoms experienced per day	4.43	2.30	0.86	9.29
Number of typical days out of the week	3.60	2.51	0.00	7.00

Table 5: Limitation-Free Days Statistics

	Average Amount of Limitation	Average Amount of Limitation (Typical)
Total Group	6.31	6.50
# of patients with limitation-free days	22	18
Total limitation-free days across all diaries	103	57
Pearson Correlation		
Disability Days from study battery	0.64 (p<.001)	0.56 (p<.001)

† Score range: 4=Not Limited At All to 16=Extremely Limited
* Approximately how many days in the past month were you free from urinary-related interference or limitations in your normal daily activities?

CONCLUSIONS

Results indicate that the diary captures high quality data for reporting disability-free days (in terms of incontinent episodes and related symptoms and restrictions). A need for minor adjustments in some areas of the diary was identified. Lastly, diary results show good associations with other standardized measures, adding support to the reliable performance of this tool.