

A PROSPECTIVE COMPARISON OF DATA QUALITY FROM A 3-DAY URINARY DIARY COMPARED TO A 7-DAY DIARY

Hypothesis / aims of study

Urinary diaries record data on bladder function in a day-to-day situation. Data from diaries are used as outcome measures in research studies, and as an adjunct to bladder retraining in clinical practice. The ICS recommend the use of diary measures in research studies, but there is no consensus on the optimum duration of record keeping to capture adequate data. Schick et al compared 4-day and 7-diaries retrospectively¹. They evaluated 14 parameters and concluded that the 7-day diary was "as good as" a 4-day diary. However, they did not state how missing data were dealt with. The completeness of the data recorded will be the critical factor determining the quality of the data. We have compared the 3-day and 7-day diary formats for data completion in a prospective study.

Study design, materials and methods

This study was an analysis of data collected during a continence nurse practitioner intervention randomised controlled trial as part of a larger study of incontinence in a community-dwelling cohort². Patients were asked to complete a 3-day diary as part of the baseline assessment. A small cohort were asked to complete a 7-day diary instead. Data were analysed for completeness, defined as a complete day of valid data. The difference in compliance rates was calculated with the 95% confidence intervals (95%CI) for the diaries overall, and for individual domains of function (Table). Differences in completion rate according to demographic data were examined using Chi square. To examine diary fatigue, data from just the first three days of the 7-day diary were compared to the 3-day diary.

Results

248 patients completed the 3-day diary and 40 the 7-day diary. The only demographic differences between the groups was gender. Before treatment 82.5% of the 7-day diary users and 57.7% of the 3 day diary users were women (difference 24.8%; CI 8.6, 41.1). Data are shown below as numbers (%) with % difference and 95% CI:

Completion	3-day	7-day	7-day (d 1-3)	3 vs 7 Difference	3 vs 7.3 Difference
Overall	225 (90.7)	20 (50.0)	26 (65.0)	40.7 (28.8 - 52.6)	25.7 (14.6 - 36.9)
Domain					
<i>Frequency</i>	236 (95.2)	27 (67.5)	33 (82.5)	27.7 (18.3 - 37.1)	12.7 (4.4 - 21.0)
<i>Incontinence (day)</i>	242 (97.6)	29 (82.5)	36 (90.0)	25.1 (17.2 - 33.0)	7.6 (1.5 - 13.7)
<i>Incontinence (night)</i>	241 (97.2)	37 (92.5)	37 (92.5)	4.7 (-1.4 - 10.8)	4.7 (-1.4 - 10.8)
<i>Intake</i>	236 (95.2)	25 (62.5)	32 (80.0)	32.7 (22.9 - 42.4)	15.2 (6.7 - 23.7)
<i>Output</i>	231 (93.1)	21 (52.5)	27 (77.5)	40.6 (29.6 - 51.7)	25.6 (15.4 - 35.8)
<u>Total</u>	248(100.0)	40 (100.0)	40 (100.0)		

Interpretation of results

Complete data were present significantly more often in the 3-day diary than in the 7-day diary for all areas except recording of night-time incontinence. Comparison of just the first three days of the 7-day diary revealed the same pattern, although the differences were smaller. It would appear that there is an element of diary fatigue, with reporting becoming less reliable during the 7 days of diary completion, but also the prospect of completing a long diary reduces completion rates even at the beginning of the diary period.

Concluding message

These data would support the recommendation that 3-day diaries represent the best compromise between capturing important clinical variation and losing data due to poor compliance. 3-day diaries should become the standard duration for research and clinical practice.

References

1. Frequency-volume chart: the minimum number of days required to obtain reliable results. *Neurourol Urodyn* 2003;22:92-6.
2. Development, implementation and evaluation of a new nurse-led continence service: a pilot study. *J Clin Nurs* 2000;9:566-73

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