

DIFFERENCES BETWEEN BOTHERSOME AND NON-BOTHERSOME NIGHT-TIME FREQUENCY

Hypothesis / aims of study

To uncover the distributions of bothersome and non-bothersome nocturnal voiding and the differences between them using a community-based study we conducted.

Study design, materials and methods

A total of 2,205 men and women aged 41-70 yr from three Japanese towns answered to a postal questionnaire survey. The questionnaire included the International Prostate Symptom Score, Pittsburgh Sleep Quality Index (PSQI), Medical Outcome Study Short Form-8, medical history of several diseases and history of cigarette smoking and alcohol consumption. We chose subjects who had one or two episodes of nocturnal voiding per night and divided them into two subgroups based on the answer to a question on trouble sleeping due to nocturnal voiding in the PSQI. We compared data regarding lower urinary tract symptoms (LUTS), sleep, and general-health related quality of life (GHQL) among these subgroups.

Results

Of the subjects, 314 (14.2%), 693 (31.4%), 149 (6.8%) and 168 (7.6%) had once bothersome (OBN), once non-bothersome (ONN), twice bothersome (TBN) and twice non-bothersome nocturnal voiding (TNN) per night, respectively. Regarding LUTS, the TBN group had the worst and ONN group had the best scores whilst the OBN and TNN groups had equivalent scores (Table 1). Regarding sleep and GHQL, trouble sleeping but not frequency of nocturnal voiding per se did not affect the scores (Tables 2 and 3). The TNN group generally had better scores than the OBN group, while the former had more frequent nocturnal voiding.

Interpretation of results

The LUTS other than night-time frequency were affected by both frequency of nocturnal voiding per se and trouble sleeping due to nocturnal voiding. On the other hand, sleep problems and GHQL were impacted by trouble sleeping due to nocturnal voiding but not by frequency of nocturnal voiding per se if night-time frequency is mild, once or twice.

Concluding message

Sleep and GHQL of subjects with mild (once or twice) night-time frequency is considerably impacted by sleeping troubles.

References

Table 1 Lower Urinary Tract Symptoms

	ONN	OBN	TNN	TBN	Kruskal-Wallis test (p-values)	Crude p-values					
						ONN vs OBN	ONN vs TNN	ONN vs TBN	OBN vs TNN	OBN vs TBN	TNN vs TBN
Incomplete emptying	0.39	0.65	0.61	0.89	<0.001	<0.001**	0.09	<0.001**	0.31	0.007*	0.002*
Frequency	0.92	1.22	1.32	1.87	<0.001	<0.001**	0.001**	<0.001**	0.85	<0.001**	<0.001**
Intermittency	0.31	0.56	0.65	1.03	<0.001	<0.001**	0.002*	<0.001**	0.81	0.001**	0.01
Urgency	0.42	0.46	0.71	0.86	<0.001	0.07	0.007*	<0.001**	0.24	<0.001**	0.04
Weak stream	0.63	1.04	1.14	1.60	<0.001	<0.001**	<0.001**	<0.001**	0.92	<0.001**	0.001**
Straining	0.32	0.54	0.70	1.05	<0.001	<0.001**	0.004*	<0.001**	0.96	0.003*	0.02
Night-time frequency	1	1	2	2	-	-	-	-	-	-	-
Incontinence	0.22	0.22	0.34	0.41	0.029	0.83	0.52	0.004*	0.46	0.01	0.12
Voiding subscore of the IPSS	1.25	2.15	2.50	3.67	<0.001	<0.001**	<0.001**	<0.001**	0.88	<0.001**	0.001**
Filling subscore of the IPSS	2.33	2.67	4.03	4.73	<0.001	<0.001**	<0.001**	<0.001**	<0.001**	<0.001**	<0.001**
Total score of the IPSS	3.95	5.43	7.11	9.31	<0.001	<0.001**	<0.001**	<0.001**	0.003*	<0.001**	<0.001**
IPSSQOL	1.48	2.00	2.27	2.65	<0.001	<0.001**	<0.001**	<0.001**	0.33	<0.001**	0.03

Table 2 Sleep Problems

	ONN	OBN	TNN	TBN	Kruskal-Wallis test (p-values)	Crude p-values					
						ONN vs OBN	ONN vs TNN	ONN vs TBN	OBN vs TNN	OBN vs TBN	TNN vs TBN
Sleep quality	0.84	1.24	0.88	1.41	<0.001	<0.001**	0.76	<0.001**	<0.001**	0.37	<0.001**
Sleep latency	0.61	1.12	0.77	1.51	<0.001	<0.001**	0.41	<0.001**	<0.001**	0.04	<0.001**
Sleep duration	1.02	1.21	0.93	1.21	<0.001	0.001**	0.49	<0.001**	0.005*	0.11	<0.001**
Sleep efficiency	0.14	0.37	0.21	0.66	<0.001	<0.001**	0.01	0.001**	<0.001**	0.91	<0.001**
Sleep disturbance	1.67	2.15	1.63	2.25	<0.001	<0.001**	0.25	<0.001**	<0.001**	0.75	<0.001**
Hypnotic use	0.13	0.35	0.24	0.57	<0.001	<0.001**	0.23	0.44	<0.001**	0.03	0.19
Daytime dysfunction	0.38	0.61	0.45	0.75	<0.001	<0.001**	0.01	<0.001**	0.57	<0.001**	<0.001**
Total score	4.78	7.05	5.16	8.37	<0.001	<0.001**	0.47	<0.001**	<0.001**	0.001**	<0.001**

Table 3 General-Health-Related Quality of Life

	ONN	OBN	TNN	TBN	Kruskal-Wallis test (p-values)	Gude p-values					
						ONN vs OBN	ONN vs TNN	ONN vs TBN	OBN vs TNN	OBN vs TBN	TNN vs TBN
General health perception	51.9	49.4	50.9	48.6	<0.001	<0.001**	0.13	<0.001**	0.008*	0.24	0.003*
Physical function	50.2	49.3	49.6	48.0	<0.001	0.004*	0.52	<0.001**	0.16	0.04	0.003*
Role physical	50.4	48.7	49.7	47.4	<0.001	<0.001**	0.15	<0.001**	0.16	0.04	0.002*
Bodily pain	51.7	49.7	50.4	48.4	<0.001	<0.001**	0.18	<0.001**	0.15	0.11	0.01
Vitality	52.1	49.9	51.3	49.0	<0.001	<0.001**	0.15	<0.001**	0.02	0.26	0.003*
Social function	49.7	47.0	49.3	46.2	<0.001	<0.001**	0.81	<0.001**	0.001**	0.35	<0.001**
Mental health	51.0	48.4	50.5	48.7	<0.001	<0.001**	0.65	0.001**	0.001**	0.47	0.03
Role emotional	50.2	48.0	49.5	48.0	<0.001	<0.001**	0.30	<0.001**	0.01	0.89	0.04
Physical component summary	50.0	48.7	48.9	46.8	<0.001	0.001**	0.06	<0.001**	0.5	0.003*	0.001**
Mental component summary	49.9	47.1	49.5	47.7	<0.001	<0.001**	0.78	0.003*	<0.001**	0.28	0.03

*: 5% significant by Bonferroni's method, **: 1% significant by Bonferroni's method. (in all Tables)

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study was approved by the Kyoto University Ethical Committee and followed the Declaration of Helsinki Informed consent was obtained from the patients.