

PREVALENCE AND RISK FACTORS OF INCONTINENCE AMONG NURSING HOME RESIDENTS IN JAPAN

Hypothesis / aims of study

Urinary and fecal incontinence are common problems among residents living in nursing homes. However, a nationwide survey of prevalence of these impairments among nursing residents in Japan had not been conducted to date. Japanese nursing homes provide physical and cognitive cares for frail elderly to rehabilitate to home. The Functional Independence measure (FIM) is widely used indicator of severity of disability to evaluate activity of daily living of elderly. The aim of this study is to clarify the prevalence of urinary and fecal incontinence and to identify risk factors of these impairments among the elderly living in nursing homes in Japan. We also analysed association between the status of incontinence and change of the FIM score after 3-month rehabilitation.

Study design, materials and methods

There are 3,589 nursing homes (long-term care facilities) in Japan. We asked all facilities to participate in this study and recruited newly admitted residents aged ≥ 65 since August 2015 to October 2015. We reviewed personal information including gender, age, the Care-Needs level, status of incontinence, and the FIM score. We determined risk factors of incontinence by a logistic regression analysis. After 3-month rehabilitation conducted, we compared the status of incontinence and changes of the FIM score. Written informed consent was obtained from all participants or their family members on behalf of elderly.

Results

Eight hundred thirty-three facilities cooperated and 2942 residents were recruited for this study. After excluding elderly with insufficient data, data from 2793 residents (751 males and 2042 females, median 86 (range, 65 -107) years old) were used for analysis. Total 1762 residents (68.9%) were not in complete control of bladder or bowel and 1062 residents (41.6%) were not in complete control of bladder and bowel. Prevalence of urinary and fecal incontinence was 67.7% and 42.6%, respectively. Toileting programme was obtained for only 40% of residents with incontinence. Total score of FIM was significantly lower in the elderly with incontinence; mean 95.6 \pm 17.5 vs. 62.3 \pm 26.8 in urinary incontinence and 88.5 \pm 20.6 vs. 52.3 \pm 25.0 in fecal incontinence (both, $P < 0.0001$). Odds ratios after adjustment for gender, age, the Care-Needs level, and the FIM score; male sex (OR 1.45; 95%CI 1.12-1.85), the Care-Needs level (OR 1.10; 95%CI 1.00-1.22), and total score of FIM with decreasing by 10 points (OR 1.79; 95%CI 1.69-1.89) were significant risk factors for urinary incontinence. Similarly, male sex (OR 1.30; 95%CI 1.02-1.64), the Care-Needs level (OR 1.25; 95%CI 1.13-1.38), and total score of FIM with decreasing by 10 points (OR 1.75; 95%CI 1.67-1.85) were significant risk factors for fecal incontinence.

After 3-month rehabilitation, we could follow continence status of 1319 residents. Status of urinary continence/incontinence was stable in 1051 residents, while 158 residents improved and 89 residents impaired the status. One hundred residents with urinary incontinence no longer needed pads or diapers after 3-month rehabilitation. Status of fecal continence/incontinence was stable in 1095 residents, while 123 residents improved and 81 residents impaired the status. Eighty three residents with fecal incontinence no longer needed pads or diapers after 3-month rehabilitation. Concerning with urinary incontinence, mean changes of total score of FIM were +10.6 in improved, +2.0 in stable, -3.9 in impaired groups ($P < 0.0001$). Likewise, concerning with urinary incontinence, mean changes of total score of FIM were +8.9 in improved, +2.6 in stable, -6.2 in impaired groups ($P < 0.0001$).

Interpretation of results

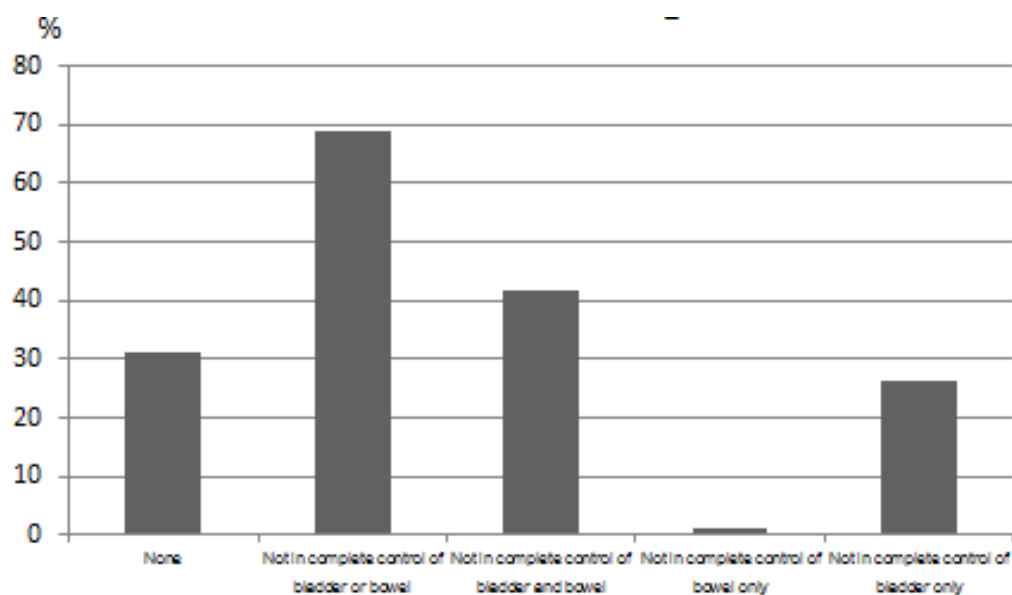
We firstly conducted a nationwide survey of continence status among residents in nursing home in Japan. Urinary incontinence is often comorbid with fecal incontinence. Prevalence of incontinence among older Americans had been reported from the Centers for Disease Control and Prevention (CDC) in 2014 [1]. Reportedly, among nursing home residents, percentage of not in complete control of bladder and bowel was 57.5%. We cannot compare our data with the CDC data directly, because system of nursing home care and characteristics of residents were different. Simply, proportion of highly aged group (aged 85 and older) was 58.3% in our study, while 46.5% in the CDC report.

Our study suggested total score of FIM was an independent risk factor of incontinence. Moreover, changes of total score of FIM are significantly higher in the group of improved continence.

Concluding message

The FIM score is useful to evaluate risk of incontinence among residents in nursing homes. Rehabilitation including physical and cognitive training may improve continence status of elderly.

Fig 1. Status of Continence among residents in nursing homes



Urinary incontinence		Crude OR (95% CI)	Adjusted OR (95% CI)
Age group	65 – 74	Reference	Reference
	75 – 84	0.95 (0.70 - 1.30)	1.07 (0.71 - 1.61)
	85 and older	1.14 (0.84 - 1.53)	1.33 (0.90 - 1.98)
Gender	Female	Reference	Reference
	Male	1.56 (1.30 - 1.92)	1.45 (1.12 - 1.85)
Care-Needs level		1.81 (1.68 - 1.96)	1.10 (1.00 - 1.22)
FIM total, decreasing by 10 points		1.82 (1.72 - 1.92)	1.79 (1.69 - 1.89)

Fecal incontinence		Crude OR (95% CI)	Adjusted OR (95% CI)
Age group	65 – 74	Reference	Reference
	75 – 84	0.93 (0.69 - 1.26)	1.15 (0.76 - 1.73)
	85 and older	1.02 (0.77 - 1.35)	1.21 (0.82 - 1.81)
Gender	Female	Reference	Reference
	Male	1.45 (1.22 - 1.72)	1.30 (1.02 - 1.64)
Care-Needs level		2.07 (1.92 - 2.24)	1.25 (1.13 - 1.38)
FIM total, decreasing by 10 points		1.82 (1.75 - 1.92)	1.75 (1.67 - 1.85)

References

1. Gorina Y, Schappert S, Bercovitz A, et al. Prevalence of incontinence among older Americans. National Center for Health Statistics. Vital Health Stat 3(36). 2014.

Disclosures

Funding: the Ministry of Health, Labour and Welfare, Japan (No. 29) **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Ethics Committee of Tokyo Teishin Hospital

Ethics Committee of Japan Association of Geriatric Health Services Facilities **Helsinki:** Yes **Informed Consent:** Yes