A demographic description of caregivers in Sapporo Japan : male caregivers are here to stay

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The population of elderly in Japan continues to grow as advances in health care are supporting longer living. In traditional Japanese culture, as people age and become frail, they most often continue to live at home and are cared for by family. However, recently the birth rate in Japan has decreased dramatically, and the nuclear family has become standard. Therefore, caregivers often have to take care of the frail elderly without any help because other relatives live in distant places and are unable to help in caring for the frail elderly. The present study aimed to investigate who the caregivers are and the demographic characteristics of caregivers, including the percentage using home health nursing support for their loved ones. Specific focus was on the characteristics and needs of men providing caregiving. Seventy one dyads of caregiver and patient were examined. Differences were found between caregivers' gender.

Male caregivers were more likely to be older ($p < 0.05$), to be spouse ($p < 0.05$), longer duration of caregiving ($p < 0.05$), to have a daughter-in-law who helped from outside ($p < 0.05$), and to use home help service ($p < 0.05$) than female caregivers. Also, male caregivers were less likely to be children ($p < 0.05$), to care for older frail elderly ($p < 0.05$), to have a sister or brother who help from outside ($p < 0.05$), and to use day care service (0% v. s. 21.6%) than their counterparts.

After "caregiver's age" was adjusted, male caregivers were less likely to care for frail elderly persons who were more than 80 years old (OR=0.28, 95%CI= (0.08, 0.994)) and were more likely to use home-visit care (home help service) (OR=5.72, 95%CI= (1.75, 18.68)) than female caregivers. The needs of supporting the at home care of male caregivers may be different from female caregivers.

Key words : family caregivers, frail elderly, male caregivers, Long Term Care Insurance, Japan

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I Introduction

After World War II, improvements in public health and advances in medicine have given Japan the longest life expectancy in the world (Ministry of Health, Labour and Welfare, 2011 ; Ministry of Internal Affairs and Communications et al., 2011a). This has led to a dramatic increase in the number of elderly people in Japan, which is now well-documented (Ministry of Health, Labour and Welfare, 2011 ; Ministry of Internal Affairs and Communications et al., 2011a), and a concurrent increase in the number of elderly in need of care (frail elderly). Number of 65 years and over in Japan in 2006 was about 26 million (20.7%) (Ministry of Internal Affairs and Communications et al., 2011b), and in Sapporo in 2008 was 359,983 (19.1%) (City of Sapporo, 2011a). In Japan, there was the institution, where an elderly needing care enter, for example Geriatric health services facility (Roken nursing home), and Special nursing home for the elderly (Special nursing home) etc (City of Sapporo, 2011b). Frail elderly have been cared for in the traditional Japanese family system where most Japanese elderly live with their children (Campbell, 1992 ; Ministry of Health, Labour and Welfare, 2011).

The Ministry of Health, Labour and Welfare reported that male caregivers were about 10% in 1997, but increased to nearly 30% in 2007 (Tsudome and Saito, 2007). All frail elderly are assessed to see if they qualify for elderly care services according to Government Certified Disability Index (Yokaigodo in Japanese) (Shimizu, 2003). In Sapporo 61,444 elderly persons were authorized regarding Yokaigodo, because their ages were 65 years or over (City of Sapporo, 2011a). Problematic, however, is that the government index looks only at the condition of the patient, and not at who is available, or the capabilities of that person, to

care for them at home. As one characteristic of caregiving at-home, we thought the gender differences of caregiver-related care settings and use of these services. We desired to assess if differences existed in the needs of caregivers by gender.

Assessing who caregivers are and how they are managing has generated much attention in nursing research. Arai et al. (2001) found that when caregivers were overwhelmed, this led to depression and earlier discontinuation of care for the family member. Calasanti and King (2007) studied 22 husbands caring for their wives at home. These males used coping strategies different from those commonly used by females, including "exerting force," "blocking emotions," and "self medicating" with alcohol. Sandberg and Eriksson (2007), too, found that males caring for their wives needed to "focus on a clear set of goals" to cope. Caregiver burden has been the focus of many funded studies by Dr. Carol Farran. Farran and Keane-Hagerty (2011) give evidence based advice to caregivers on how to keep themselves strong.

II Subjects and Methods

A cross-sectional study was conducted in order to assess male and female caregivers for the frail elderly with periodic nurse service in 2008, in 7 home-visiting nursing service stations in Sapporo, Japan. Demographic characteristics and use of services, with focus on potential differences by caregiver gender, were studied.

Caregiver-patient dyads were identified through 7 home health agencies in Sapporo, Japan. Written informed consent was obtained. This study was approved by the Ethical Boards of Sapporo Medical University.

The caregivers were asked to complete the following self-administered questionnaires in regards to their health status and caregiving situation in the same manner as in our previous studies (Arai

et al., 2001 ; Oura et al., 2007 ; Washio et al., 2003) : (i) questions regarding the caregiver's health status including the Center for Epidemiologic Studies Depression Scale (CES-D) (Kano, 2003 ; Radloff, 1977) ; (ii) questions regarding demographic variables of the caregivers and their frail elderly ; and, (iii) questions regarding several care variables, such as : the time spent physically caregiving, the time spent attending to the frail elderly, and the duration of caregiving. Information on the frail elderly was also collected from medical records.

III Data Analysis

Statistical analyses were performed using the Statistical Package for Social Science (SPSS). Caregivers were divided into two groups according to the gender of the caregivers. The Chi-square test and the Mann-Whitney U-test were used to compare these groups. A multiple logistic regression analysis was conducted to control for any confounding factors related to male caregivers. The odds ratios (OR) and their 95% confidence intervals (95%CI) were calculated for each factor based on the logistic regression coefficient and standard error. For each of the estimations, the OR was adjusted for the caregivers' age. A level of 0.05 was used as the critical level of significance.

IV Results

Initially informed consent was received from 86 pairs of caregivers and disabled elderly in October 2008. We excluded 15 pairs of patients aged 64 years or younger and their caregivers, because the main users of the Long-term Care Insurance System (LTC) are aged 65 or older. Thus we analyzed 71 pairs in total. The number of frail elderly included 31 males and 40 females with a mean age ($\pm$ standard deviation ; SD) of 81.1 ± 8.0 years. The number of caregivers included 20 males and

51 females with a mean age ($\pm$ SD) of 65.7 ± 11.6 years old. The relationship of those caregivers surveyed included : 15 husbands (21.1%), 20 wives (28.2%), 4 sons (5.6%), 23 daughters (32.4%), 8 daughters-in-law (11.3%), and 1 son-in-law (1.4%).

Table 1 shows a comparison between male and female caregivers ; characteristics of caregivers and the frail elderly. Male caregivers were more likely to be older (male : $71.7 (\pm 11.6)$ years v. s. female : $63.3 (\pm 10.8)$ years, $p < 0.01$), and to care for younger frail elderly (male : $77.2 (\pm 5.3)$ years v. s. female : $82.6 (\pm 8.5)$ years, $p = 0.01$) than female caregivers. Male caregivers were more likely to be a spouse (male : 15 (75.0%) v. s. female : 20 (39.2%), $p < 0.01$), female caregivers were more likely to be children (including "in-law") (male : 5 (25.0%) v. s. female : 31 (60.8%), $p < 0.01$) than male caregivers. The number of male caregivers that cared for frail elderly males was zero, while on the other hand, the number of female caregivers was 31 (60.8%). Nine (45.0%) of the male and 20 (39.2%) of the female caregivers were depressed. The rate of depressive caregivers did not differ between the two groups.

Table 2 demonstrates a comparison between male and female caregivers ; care setting. Male caregivers maintained their caregivers roles for longer periods than females with a longer duration of caregiving (mean $\pm$ SD ; male : $68.1 (\text{months}) \pm 36.2$ v. s. female : $50.6 (\text{months}) \pm 48.8$, $p = 0.02$) than their counterparts. Male caregivers were more likely to have a daughter-in-law who helped from the outside ($p = 0.03$), and less likely to have a sister or brother who helped from the outside ($p < 0.01$) than female caregivers. Male caregivers were more likely to use home help service than their counterparts ($p < 0.01$). The number of male caregivers that used day a care service for the frail elderly was zero, and the number of females was 11

Table 1 Comparison between male and female caregivers ; characteristics of caregivers and the frail elderly.

	Male caregivers (N=20)	Female caregivers (N=51)	p
Caregivers' characteristics			
Age (years old)	71.7±11.6	63.3±10.8	<0.01
Caregivers who are spouses	15 (75.0%)	20 (39.2%)	<0.01
Caregivers who are children (including "in-law")	5 (25.0%)	31 (60.8%)	<0.01
Consulting with own medical doctor	12 (60.0%)	28 (54.9%)	=0.70
Felt ill (always, sometimes)	8 (40.0%)	20 (40.0%) ##	=1.00
Had a job	2 (10.0%)	8 (15.7%)	=0.54
Economic conditions (good, fair)	8 (40.0%)	19 (39.6%) #	=0.97
Depression	9 (45.0%)	20 (39.2%)	=0.66
J-ZBI	34.3±16.8	33.7±18.1	=0.79
Patients' characteristics			
Age (years old)	77.2±5.3	82.6±8.5	=0.01
Gender (Male)	0 (0%)	31 (60.8%)	—
Barthel Index	49.0±32.6	61.2±31.6	=0.14
Dementia	13 (65.0%)	40 (78.4%)	=0.24
Dementia with behavioral disturbances *	4 (20.0%)	9 (17.6%)	=0.82

*corresponding up to 1 item ; wandering or violence etc

Values are expressed as Mean±SD or number (%)

#n=48, ##n=50

(21.6%).

In Table 3, the odds ratio and 95% confidence intervals for male caregivers associated with related factors are shown. Male were more likely to use home-visit care (home help service) (OR=5.72, 95%CI=(1.75, 18.68)) than female caregivers, and male caregivers were less likely to care for the frail elderly who were older than 80 years old (OR=0.28, 95%CI=(0.08, 0.994)) even after adjusting for the caregivers' age.

V Discussion

We conducted this study to assess for potential differences in caregiver gender and specific needs of the caregivers. We found that males were devoted caregivers, willing to care for a spouse for long durations of time. Males used home health support to assist them. After the patient age of 80, males were less likely to continue caregiving, perhaps because of their own age and health status.

We found that male caregivers were more likely to use a home help service than their female counterparts. The results of the present study are consistent with the results of the study by Sugiura et al. (2010), which showed that husband caregivers are more likely to use a home help service than wife caregivers in the baseline. These findings may be partly explained by the result of the study by Tsudome and Saito (2007), which demonstrated that male caregivers are less skilled at personal homemaking at home than females.

There are many male caregivers who may be in the situation of elder-to-elder nursing (Rourou Kaigo : in Japanese). Tsudome and Saito (2007) reports that the number and proportion of male caregivers is rapidly increasing. A comprehensive survey of living conditions of the people in Japan conducted by the Ministry of Health, Labour and Welfare (2008) reported that most people providing caregiving in Japan were born during the 1950's.

Table 2 Comparison between male and female caregivers ; care setting

	Male caregivers (N=20)	Female caregivers (N=51)	p
Time spent on physical caregiving (hours/day)	8.7±6.1	7.9±6.6	=0.34
Time attending the elderly (hours/day)	10.8±8.4	8.3±7.2	=0.28
Duration of caregiving (months)	68.1±36.2	50.6±48.8	=0.02
Had a family member who helped with caregiving	5 (25%)	23 (45.1%)	=0.12
Had Help from the outside	9 (47.4%)#	26 (51.0%)	=0.79
Daughter-in-law helped from the outside	3 (15.0%)	1 (2.0%)	=0.03
Sister or brother helped from the outside	1 (5.0%)	18 (35.3%)	<0.01
Relieving irritated moods caused by caregiving (possible)	13 (65.0%)	39 (78.0%)####	=0.26
Use of a care service at home (well)	17 (85.0%)	39 (79.6%)##	=0.51
Use of a care service at a facility (well)	12 (63.2%)#	25 (54.3%)###	=0.51
Self payment of more than 10,000 Japanese Yen as a part of total care service costs	16 (80.0%)	27 (55.1%)##	=0.053
No. of times using public care service	2.2±1.2	2.0±1.1	=0.38
Used the following public service :			
Home helper	13 (65.0%)	12 (23.5%)	<0.01
Bath services	8 (40.0%)	16 (31.4%)	=0.49
Day services	8 (40.0%)	19 (37.3%)	=0.83
Day care services	0 (0%)	11 (21.6%)	—
Short stay services	4 (20.0%)	10 (19.6%)	=0.97
Food delivery services	1 (5.0%)	4 (7.8%)	=0.67
Being able to go out without accompanying the elderly	15 (75.0%)	39 (79.6%)##	=0.68

Values are expressed as Mean±SD or number (%)

#n=19, ##n=49, ###n=46, ####n=20, #####n=50

Generally, many people of the 50's generation are still employed. Houde (2002) reported that success in caregiving was influenced by the relationship with the frail elderly, the generation, or the working situation in the case of male caregivers. An improved system to support of coexistence of at-home care and outside employment will be needed in Japan. The use of home health nursing services can assist to fill that gap.

We recommend further studies on specific measures that support men's abilities to care for their spouses at home, as it appears that male caregivers are here to stay.

Study Limitations

The design of the present study was cross sectional and not, and therefore it was hard to understand the inter relationship between factors in terms of causes or effects. Second, this study is not geographically representative of all Japan. Third, the Odds Ratio was adjusted only for the caregivers' age because of the small number of subjects.

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Table 3 Odds ratio* and 95% confidence intervals for male caregivers associated with related factors.

	Crude OR (95%CI)	Adjusted OR* (95%CI)
Caregivers' characteristics		
Caregivers who are spouses	4.65 (1.46, 14.80)	4.30 (0.66, 28.18)
Caregivers who are children	0.22 (0.07, 0.68)	0.23 (0.04, 1.52)
Patients' characteristics		
Age (80+/79-)	0.20 (0.07, 0.63)	0.28 (0.08, 0.994)
Duration of caregiving (48+/47-) (months)	2.28 (0.78, 6.70)	1.83 (0.60, 5.61)
Care setting		
Had Help from the outside		
Daughter-in-law helped from the outside	8.82 (0.86, 90.61)	6.27 (0.58, 67.40)
Sister or brother helped from the outside	0.10 (0.01, 0.78)	0.14 (0.02, 1.28)
Used the following public service :		
Home-visit care (Home help service)	6.04 (1.96, 18.57)	5.72 (1.75, 18.68)
Commuting for care (Day care)	—#	—#

*Odds ratio : Adjusted "Caregiver's Age"

**CI : confidence interval

: measurement impossible

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