

Table 1. The short version of the Japanese version of the Zarit Caregiver Burden Interview (J-ZBI_8).¹⁴⁻¹⁶

For each question, chose one of the following answers:

0. Never 1. Rarely 2. Sometimes 3. Quite frequently 4. Nearly always

Questions

1. Do you feel embarrassed over your relative's behavior? *
 2. Do you feel angry when you are around your relative? *
 3. Do you feel that your relative currently affects your relationship with other family members or friends in a negative way? †
 4. Do you feel strained when you are around your relative? *
 5. Do you feel that your social life has suffered because you are caring for your relative? †
 6. Do you feel uncomfortable about having friends over because of your relative? †
 7. Do you wish you could just leave the care of your relative to someone else? *
 8. Do you feel uncertain about what to do about your relative? *
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*: J-ZBI_8 Personal Strain

†: J-ZBI_8 Role Strain

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RESEARCH LETTER

Caregiver burden not 'worse' after new public long-term care (LTC) insurance scheme took over in Japan

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The Long-Term Care (LTC) insurance scheme was implemented in Japan in 2000. Under this scheme, services are allocated based not on the availability of informal care but the degree of mental and physical disability of the clients themselves (MHLW, 2003). This scheme is unprecedented in making the government rather than the family responsible for the care of the elderly (Arai, 1997). The idea behind the scheme appeared to be praiseworthy (Campbell and Ikegami, 2003). However, in reality, much of the Japanese media called the LTC insurance scheme a failure, claiming that family caregivers were more 'burdened' since the LTC insurance system was implemented. We previously stated that such claims were not based on scientific studies and called for a new study with sound methodology to see if the claims were true (Arai, 2001).

Were family caregivers who looked after the impaired elderly residing in the community more 'burdened' since the LTC insurance system was put in place? In order to answer the above question, we conducted the following two studies in a town located in rural northern Japan—Matsuyama Town (population: 7126). First, we used a paired *t*-test to compare the degree of caregiver burden measured in 1999 and that in 2001 among the caregivers who had provided continuous caregiving one year before and after

the implementation of the LTC insurance program. Second, we compared caregiver burden between those who looked after the disabled elderly in 1999 and those who began caring for the disabled elderly in 2001 by Analysis of Co-variance (ANCOVA). The above two studies were conducted as part of the Matsuyama Caregiver Study which commenced in 1998. In this study, all caregivers co-residing with registered disabled elderly in the town were surveyed; the degree of their feelings of burden was measured yearly between 1998–2001 by the Japanese version of the Zarit Caregiver Burden interview (J-ZBI) (Zarit *et al.*, 1980; Arai *et al.*, 1997), which is the most widely used caregiver burden scale in Japan. In 1999, of the 99 registered disabled elderly residing in the community, 76 disabled elderly and their co-residing caregivers were surveyed. Of these, we were able to follow 31 pairs of caregivers and disabled elderly, who had kept co-residing and looking after the elderly from 1999 to 2001. In 2001, 51 new caregivers co-residing with the disabled elderly started to provide caregiving in the town, and were included in the survey. The design of the Matsuyama Caregiver Study has been described in detail elsewhere (Arai *et al.*, 2000; Arai *et al.*, 2002).

The results of the first study are presented in Table 1. It was found that the number of services used in 2001 was significantly greater in 1999. However, the mean J-ZBI score in 2001 was not significantly different from that of 1999, indicating that caregiver burden itself did not change from 1999 to 2001 (Table 1). The following reason was postulated for the lack of change in burden. The degree of impairments among the disabled elderly worsened, as reflected by a measure of the Activities of Daily

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Table 1. Comparisons of caregiver burden and other variables between 1999 and 2001 using paired *t*-test

	1999		2001		<i>p</i> -value
	Mean	(SD)	Mean	(SD)	
J-ZBI	29.9	(17.95)	32.71	(14.60)	0.41
Barthel Index	10.32	(6.59)	7.55	(6.43)	0.02
No. of services used	0.87	(1.02)	1.58	(0.96)	0
Hours of caregiving/day	5.14	(4.22)	5.08	(4.74)	0.94

J-ZBI: Japanese version of Zarit Burden Interview.

Living (ADL), i.e. the Barthel Index score of impaired elderly. And, because this ongoing deterioration was so severe, of course, caregiver's burden was not alleviated—even if more care services were used.

The second study was aimed at investigating whether caregivers in 1999 before the insurance system began were 'better off' than those who started to use social services in 2001 after the insurance program was in place. Specifically, caregiver burden, measured by J-ZBI, was compared between those who looked after the disabled elderly in 1999 and those who began caring for the disabled elderly in 2001 using the Analysis of Co-variance (ANCOVA), adjusting for caregiver's age, sex, age of the disabled elderly, duration of caregiving (months), number of family members, ADL score (Barthel Index), and score of behavioral disturbance (TBS). The adjusted mean J-ZBI score of 28.7 in 2001 was not significantly different from the 32.5 score in 1999, indicating the media claims were unfounded.

Overall, the above studies demonstrated that, contrary to media claims, family caregivers who looked after the impaired elderly residing in the community

had not become more 'burdened' since the LTC insurance scheme was implemented. The system has not been failure, at least from a scientific standpoint; media claims were unfounded. However, these data were obtained only by one municipal government, and ongoing nationwide studies of this issue must be conducted.

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