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Women's anxiety in old age and long-term care provision for the elderly.

Masayuki Kubota* Akira Babazono†

Hideyasu Aoyama‡

*Okayama University,

†Kyusyu University,

‡Okayama University,

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Masayuki Kubota, Akira Babazono, and Hideyasu Aoyama

Abstract

The purpose of this study was to verify the differences in women's anxiety in old age, the expected long-term care provision, and the expected final location for terminal care for the women themselves and for their parents. In addition, we examined factors that related to their anxiety and needs. The subjects were 1,000 women of the Seikatsu Club customer cooperative association in Chiba; 539 responded to our survey. The subjects were more anxious for their parents than for themselves. They more strongly expected long-term care for their parents to be provided by their family than they expected the same for themselves. Although no differences were observed in the expected location for terminal care, most subjects expected their home to be the terminal location. Analysis by the multiple logistic regression model indicated that the following factors were significantly related to the anxiety in old age: age odds ratio [OR = 1.81], employment [OR = 2.25] for women, and planning to live with parents [OR = 2.42], housing conditions [OR = 0.56] for parents. The following factors were significantly related to the expected long-term care provision: age [OR = 2.22] for women, and age [OR = 2.15], living with parents [OR = 3.58], and employment [OR = 2.33] for parents. Age [OR = 2.14] for women, and planning to live with parents [OR = 2.09] for parents were significantly related to the expected final location of terminal care. This survey showed that women expected long-term care for their parents to be provided by their family, while many expected public long-term care services for themselves. This is the biggest difference in women's outlook on long-term care for their parents and for themselves. Multivariate analysis suggested that women aged 40 years or over, who will need long-term care in the future, tended to expect public home care services for themselves. It is virtually certain that the demand for public home care services will increase in the future.

KEYWORDS: long-term care, terminal care, family burden, puburic home care, public long-term care insurance

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Women's Anxiety in Old Age and Long-Term Care Provision for the Elderly

Masayuki KUBOTA[ab]*, Akira BABAZONO[c] and Hideyasu AOYAMA[a]

[a]Department of Hygiene and Preventive Medicine, Okayama University Medical School, Okayama 700-8558, [b]General Management Consulting, Co., Tokyo 102-0093 and [c]Institute of Health Science, Kyushu University, Kasuga 816-0811, JAPAN

The purpose of this study was to verify the differences in women's anxiety in old age, the expected long-term care provision, and the expected final location for terminal care for the women themselves and for their parents. In addition, we examined factors that related to their anxiety and needs. The subjects were 1,000 women of the Seikatsu Club customer cooperative association in Chiba; 539 responded to our survey. The subjects were more anxious for their parents than for themselves. They more strongly expected long-term care for their parents to be provided by their family than they expected the same for themselves. Although no differences were observed in the expected location for terminal care, most subjects expected their home to be the terminal location. Analysis by the multiple logistic regression model indicated that the following factors were significantly related to the anxiety in old age: age odds ratio [OR = 1.81], employment [OR = 2.25] for women, and planning to live with parents [OR = 2.42], housing conditions [OR = 0.56] for parents. The following factors were significantly related to the expected long-term care provision: age [OR = 2.22] for women, and age [OR = 2.15], living with parents [OR = 3.58], and employment [OR = 2.33] for parents. Age [OR = 2.14] for women, and planning to live with parents [OR = 2.09] for parents were significantly related to the expected final location of terminal care. This survey showed that women expected long-term care for their parents to be provided by their family, while many expected public long-term care services for themselves. This is the biggest difference in women's outlook on long-term care for their parents and for themselves. Multivariate analysis suggested that women aged 40 years or over, who will need long-term care in the future, tended to expect public home care services for themselves. It is virtually certain that the demand for public home care services will increase in the future.

Key words: long-term care, terminal care, family burden, public home care, public long-term care insurance

Japan's health policy for the elderly is at a historical turning point (1-4). There are 2 main changes in the environment of long-term care for the elderly. First, Japan is facing an aged society whose proportion of the elderly and growth rate are the highest in the world (3-6). In 1995, the proportion of citizens who were 65 years old and over was 14.5% of the total population. This figure will climb to 17.2% by 2000 and is expected to be higher than that of any other country. Furthermore, it is predicted to reach 27.4% by 2025 (3-6). Accordingly, the number of the dependent elderly with dementia and mental and physical disorders will increase by nearly 1.5 times to 3.9 million in 2010 from 2 million in 1993 (3, 4).

Second, the caring capacity of families for their dependent elderly is becoming worse due to the trend toward the nuclear family; traditionally, the extended family, mainly women, has been responsible for the long-term care of the elderly in Japan (3, 7, 8). The trend toward the nuclear family is a result of the fact that women are having either fewer or no children; there is an increase in unmarried and late married women and many families live in an urban environment apart from their parents. The tendency for women to work outside the home has in-

* To whom correspondence should be addressed.

creased, which has reduced the caring capacity of families. Moreover, limited housing space makes it difficult for families to take care of the elderly at home (7, 9, 10).

Since the home generally does not offer appropriate care giving, and there are insufficient public home care services and long-term care facilities, the dependent elderly must stay in geriatric hospitals and general hospitals for a long time. This long-term hospitalization is called "social hospitalization" in Japan and has led to a financial crisis in the medical insurance system (3, 4, 11–14). In response to these problems, the Ten-year Strategy for Promotion of Health and Welfare of the Elderly, better known as the Gold Plan, was established by the Ministry of Health and Welfare in 1989 in order to create both institutional care and a home care infrastructure for the elderly by 2000 (3, 4, 8). Moreover, because of the pressing concern for long-term care for the elderly, a public long-term care insurance system was established in December 1997; it will begin services in April 2000, financing the increasing health care cost of the elderly (3 8, 9, 15).

Because of events of the past 50 years, the nature of anxiety in elderly women and their long-term care needs will undergo changes in the future. Therefore, it is extremely important to recognize the anxiety of women in old age and their long-term care needs. Moreover, it is also important to consider the location of terminal care because this survey confirms the substantial need for long-term care. Little research has addressed the issue of women's awareness of certain matters associated with old age for women and their parents: anxiety in old age, long-term care provision, and terminal care. In addition, we examined the factors which influence anxiety in old age, long-term care provision, and terminal care in the women themselves and their parents.

Subjects and Methods

Subjects. In this survey, 1,000 females from the approximate 30,000 members of the Seikatsu Club consumer cooperative association in Chiba were selected at random. Women alone were used in this study because they are the main caregivers and have an interest in long-term care problems of the elderly in Japan (16).

Methods. The survey was conducted in March 1996. The questionnaire addressed the attributes of the subjects, the degree of anxiety in old age, the expected provision of long-term care services, and the expected final location for terminal care for both the women and their parents. The attributes were age, family structure, the living conditions of the parents at present and in the future, income, employment, and housing conditions. In terms of the degree of anxiety in old age, we used 3 levels of anxiety; anxious, somewhat anxious and not anxious. In terms of the expected provision of long-term care services, we investigated the alternatives women expected for themselves and their parents for long-term care: family centered, public home care service centered, a public long-term care facility, a private long-term care facility and others. We surveyed the expected final location for terminal care: their own home, the home of son or daughter, a hospital, a public long-term facility, a private long-term facility and others. For the variables which would influence anxiety in old age, the expected long-term care provision, and the expected final location for terminal care, we obtained information on age, spouse, number of children, the living conditions of their parents at present, plans for living with their parents in the future, annual income, employment conditions and housing conditions.

Statistical Analysis. First, we observed the distributions of the attributes in the characteristics of subjects and the distribution of anxiety in old age, the expected long-term care provision, and the expected final location for terminal care for women and their parents. Second, we compared anxiety in old age in women and their parents, as well as the expected long-term care provision, and the expected final location for terminal care. For comparison, the chi-square test was performed after we divided the subjects into 2 groups respectively; those who had anxiety in old age and others; those who expected family centered long-term care and others; and those who expected their home as the final location for terminal care and others. We set 0.05 as a statistically significant level of the P value.

Finally, in order to control for potential confounding variables, a multiple logistic regression model was used to estimate the relationship of anxiety in old age, the expected long-term care provision, and the expected final place for terminal care with the above-mentioned affected variables (17, 18). In a multiple logistic regression model, we used dummy variables for dependent variables which were coded as 1 or 0. Among dependent variables, for anxiety in old age, code 1 indicated the subjects had anxiety in old age while code 0 indicated they had some anxiety or no anxiety. On the expected long-term care provision, code

1 indicated that they wanted to utilize public long-term care services, public home care services, nursing care provided at either public or private long-term care facilities and others, while code 0 indicated that they wanted to have long-term care services at their home administered by the family. Regarding the expected final location for terminal care, code 1 indicated that they wanted to have terminal care at the home of their child, a hospital, or a public or private long-term care facility, while code 0 indicated that they wanted to have terminal care at home. The subjects who answered 'others' and 'unknown' were excluded from the analysis.

Among independent variables, the spouse variable was removed from the analysis because 96.8% of the subjects had spouses. In terms of age, we coded each case as 1 or 0 to indicate either those aged 40 and over or those under 40, respectively. The age 40 was selected because this is when women begin to be anxious about nursing care of parents (9, 10). In addition, those aged 40 and over are insured by the public long-term care insurance system (19–21). Regarding children, 97% of the subjects have children. We coded each case 1 or 0 to indicate either 1 child or 2 or more children, respectively, because children present a long-term care option for their parents. Subjects without children were removed from the analysis. We coded each case 1 or 0 to indicate either those living with their parents at present or those not living with their parents, and those with plans to live with their parents or those with no plans. Since the average family annual income was from 7 to 8 million yen in 1994, we coded 1 or 0 to indicate subjects whose income was 7 million yen and over or subjects under 7 million yen, respectively (22). In terms of employment, we coded each case 1 or 0 to indicate subjects who either worked full-time or did not work full-time, respectively. Finally, for housing factors, we coded each case 1 or 0 to indicate either those having their own residential house with land or those without house and land, respectively.

Results

There were 539 responses out of 1,000 women, a response rate of 53.9%. The distributions of the attributes for the subjects are shown in Table 1.

The distributions of dependent variables for anxiety in old age, the expected long-term care provision, and the expected location of terminal care for subjects themselves and their parents are shown in Table 2. Subjects who did

Table 1 Distribution in characteristics of subject

Variable	Categories	No. of answer	%
Age	20–29	13	2.4
	30–39	171	31.8
	40–49	254	47.2
	50–59	76	14.1
	60–69	20	3.7
	70–79	3	0.6
	≧80	1	0.2
	Missing	1	—
	Total	539	—
Spouse	Living	519	96.8
	None	17	3.2
	Missing	3	—
	Total	539	—
Child	1	92	17.1
	2	296	54.9
	3	126	23.4
	4+	9	1.7
	0	16	3.0
	Missing	0	—
	Total	539	—
Living with parents at present	Living	75	14.0
	Not living	461	86.0
	Missing	3	—
	Total	539	—
Living with parents in the future	Living	171	36.0
	Not living	304	64.0
	Missing	64	—
	Total	539	—
Income	700>	135	26.1
	700+	383	73.9
	Missing	21	—
	Total	539	—
Employment	Full time	62	11.6
	Part time	177	33.1
	Piecework	27	5.0
	Not	269	50.3
	Missing	4	—
	Total	539	—
Housing condition	Own residential house	302	56.1
	Own appartment	116	21.6
	Rented house	111	20.6
	Others	9	1.7
	Missing	1	—
	Total	539	—

Table 2 Distribution of anxiety in old age, expected long-term care provision, expected location of terminal care for themselves and parents

Variables	Categories	Number (%)
	For themselves	
Anxiety in old age	Anxious	104 (19.9)
	Somewhat anxious	354 (67.7)
	Not anxious	65 (12.4)
Expected long-term care provision	Family centered	62 (11.7)
	Public home care service centered	237 (44.5)
	Public long-term care facility	72 (13.6)
	Private long-term care facility	43 (8.1)
	Others	15 (2.8)
	Unknown	103 (19.4)
Expected location of terminal care	Home	437 (82.3)
	Child's home	8 (1.5)
	Hospital	27 (5.1)
	Public long-term care facility	15 (2:8)
	Private long-term care facility	12 (2.3)
	Others	32 (6.0)
	For parents	
Anxiety in old age	Anxious	186 (36.3)
	Somewhat anxious	231 (45.0)
	Not anxious	96 (18.7)
Expected long-term care provision	Family centered	259 (51.6)
	Public home care service centered	78 (15.5)
	Public long-term care facility	53 (10.6)
	Private long-term care facility	9 (1.8)
	Others	42 (8.4)
	Unknown	61 (12.2)
Expected location of terminal care	Home	406 (81.0)
	Child's home	28 (5.6)
	Hospital	33 (6.6)
	Public long-term care facility	10 (2.0)
	Private long-term care facility	7 (1.4)
	Others	17 (3.4)

not answer the questions were excluded from this analysis. As for the subjects themselves, 19.9% had anxiety in old age while 12.4% did not have anxiety. As for their parents, however, 36.3% had anxiety in old age while 18.7% did not have anxiety. As to the expected long-term care provision for subjects themselves, 11.7% expected long-term care to be provided by their family, 44.5% expected to use public home care service centered, 13.6% expected to use a public long-term care facility, 8.1% expected to use a private long-term care facility, 2.8 % expected to use other plans, and 19.4% did not respond. As for their parents, however, 51.6% expected long-term care to be provided by their family, 15.5% expected to use public home care service centered, 10.6% expected to use a public long-term facility, 1.8% expected to use a private long-term facility, 8.4% expected to use other plans, and 12.2% did not respond. Many subjects expected to use public home care services for their long-term care needs; they also expected long-term care to be provided by their family for their parents' long-term care needs. Regarding the terminal care location for subjects themselves, 82.3% expected it to be at home, 1.5% expected it to be in their child's home, 5.1% expected it to be in a hospital, 2.8% expected it to be in a public

long-term care facility, 2.3% expected it to be in a private long-term care facility, and 6.0% expected some other arrangement. As for their parents, 81.0% expected it to be at home, 5.6% expected it to be at their child's home, 6.6% expected it to be in a hospital, 2.0% expected a public long-term care facility, 1.4% expected a private long-term care facility, and 3.4% expected some other arrangement. These results indicated that almost all subjects expected their home to be the final location for terminal care for both themselves and their parents.

The results of the chi-square test on anxiety in old age, the expected long-term care provision, and the expected location for terminal care for the subjects and their parents are shown in Table 3. The chi-square test showed statistically significant differences in anxiety in old age between the subjects and their parents; 36.3% were anxious for their parents while 19.9% were anxious for themselves in old age. Statistically differences in the expected long-term care provision were found between the subjects and their parents; 51.6% were expecting family centered long-term care for their parents and 11.7% for themselves.

The results of the multiple logistic regression model are shown in Table 4. In terms of anxiety in old age in the subjects themselves, age and employment conditions were significantly related to anxiety in old age. Those aged 40 and over were 1.81 times more likely to be anxious for themselves than those under 40. Those who had full-time jobs were 2.25 times more likely to be anxious than the others. As for their parents, however, planning to live with parents in the future and housing conditions were significantly related to anxiety in old age. Those who planned to live with their parents were 2.42 times more likely to be anxious about their parents than others. In terms of housing conditions, the odds ratio was 0.56. This indicates that those who have their own residential house with land were 44% less likely to be anxious about their parents than those who are living in other housing conditions. Regarding the expected long-term care provision for themselves, only age was significantly related to the long-term care provision. The odds ratio of age was 2.22. As for their parents, age, living with parents at present, and employment conditions were significantly related to the expected long-term care provision. The odds ratio was 2.15 for age, 3.58 for living with parents at present, and 2.33 for employment conditions. Concerning the expected final location for terminal care for the subjects, only age was significantly related to home as a terminal care location. The odds ratio of age was 2.14. For their parents, planning to live with their parents was significantly related to their home as the terminal care location. The odds ratio was 2.09.

Discussion

The first objective of this study was to verify the differences in women's anxiety in old age, in the expected long-term care provision, and in the expected final location for terminal care for the subjects themselves and their parents. The second purpose was to investigate the factors which influence anxiety in old age, the expected

Table 3 Results of chi-square analysis on anxiety in old age, expected long-term care provison, expected location for terminal care for themselves and parents

Variable	Categories	Themselves (%)	Parents (%)
Anxiety in old age**	Anxious	104 (19.9)	186 (36.3)
	Not anxious	419 (80.1)	327 (63.7)
	Total	523 (100.0)	513 (100.0)
Expected long-term** care provision	Family centered	62 (11.7)	259 (51.6)
	Others	470 (88.3)	243 (48.4)
	Total	532 (100.0)	502 (100.0)
Expected location for terminal care	Home	437 (82.3)	406 (81.0)
	Others	94 (17.7)	95 (19.0)
	Total	531 (100.0)	501 (100.0)

*$P < 0.05$; **$P < 0.01$.

Table 4 Results of multiple logistic regression analysis

Variable	For themselves odds ratio (95%CI)	For parents odds ratio (95%CI)
	Anxiety in old age	
Age	1.81 (1.02-3.20)*	1.06 (0.67-1.66)
Children	0.70 (0.38-1.27)	0.80 (0.46-1.37)
Living with parents	0.37 (0.08-1.65)	0.54 (0.22-1.35)
Planning to live with parents	0.71 (0.41-1.23)	2.42 (1.55-3.77)**
Income	0.95 (0.55-1.65)	0.70 (0.44-1.13)
Employment	2.25 (1.13-4.48)*	1.16 (0.58-2.32)
Housing condition	1.04 (0.63-1.71)	0.56 (0.37-0.87)**
	Expected long-term care provision	
Age	2.22 (1.15-4.30)*	2.15 (1.24-3.72)**
Children	1.03 (0.47-2.24)	0.73 (0.38-1.41)
Living with parents	0.62 (0.19-1.94)	3.58 (1.42-9.04)**
Planning to live with parents	1.69 (0.83-3.42)	0.81 (0.48-1.38)
Income	1.14 (0.58-2.24)	0.67 (0.38-1.17)
Employment	1.29 (0.42-3.90)	2.33 (1.09-4.99)*
Housing condition	0.69 (0.36-1.31)	0.66 (0.40-1.09)
	Expected location for terminal care	
Age	2.14 (1.03-4.43)*	1.27 (0.68-2.34)
Children	0.63 (0.31-1.30)	0.93 (0.45-1.93)
Living with parents	1.59 (0.52-4.81)	1.97 (0.79-4.94)
Planning to live with parents	1.56 (0.81-3.01)	2.09 (1.16-3.77)*
Income	0.68 (0.35-1.31)	0.79 (0.42-1.48)
Employment	0.60 (0.18-2.07)	0.90 (0.33-2.45)
Housing condition	0.96 (0.50-1.82)	1.20 (0.66-2.17)

*$P < 0.05$; **$P < 0.01$.

long-term care provision, and the expected final location for terminal care in the subjects themselves and their parents. In 2025, more than one fourth of the population will be aged 65 and over; there will be 5.3 million dependent elderly, a good many of them, who are current main caregivers, requiring long-term care services (3, 4). Accordingly, it is important to recognize the above mentioned anxiety and needs and the factors related to them in order to prepare for the future policy on long-term care provision.

There were differences in the awareness of anxiety in old age between the subjects themselves and their parents. The subjects were more anxious about their parents in old age than for themselves. In terms of the expected long-term care provision, there were differences between the expected provision for themselves and that expected for their parents. The subjects more strongly expected long-term care to be provided by their family for their parents than for themselves. This suggests that the subjects, recognizing the severe burden of long-term care, have little expectation of their own long-term care by their family, though they are more likely to take care of their parents. No differences were observed in the expected location for terminal care between subjects themselves and parents. But most subjects expected their home to be the final location for terminal care for both themselves and their parents.

The results of the multivariate analysis of this survey showed that those aged 40 years or over were more likely to have anxiety in old age for themselves than those under 40. Those in full-time employment were more likely to have anxiety in old age for themselves than others without similar employment. Those who planned to live with their parents were more likely to have anxiety in old age for their parents than others who did not similar plans. Those who lived in residential houses with land were less likely

to have anxiety in old age for their parents than others. With regard to the expected long-term care provision, it was shown that those aged 40 and over were more likely to have a positive attitude toward utilizing public long-term care services both for themselves and for their parents. This is because they generally had a pressing need for nursing care for their parents. Those living with parents at present and those with full-time employment were also more likely to have a positive attitude towards utilizing public long-term care services for their parents. Moreover, this survey demonstrated that those aged 40 and over were less likely than those under 40 to anticipate that their own home would be the final location for terminal care for themselves. Those planning to allow their parents live with them in the future were less likely to see their home as the terminal location for their parents than those whose parents would not live with them.

According to the 1993 public opinion survey on the image of daily living in old age by the Prime Minister's Office, 89.2% of respondents admitted that they had been anxious about daily living in old age (23, 24). Nearly 50 % thought they would be suffering from some physical or mental disorders or would be bedridden (23, 24). Another survey by the Management and Coordination Agency, carried out in 1997, showed that 81.2% of respondents were anxious about their life in old age; the greatest anxieties centered on the thought of becoming ill and the long-term care services that would be required (25). In this survey, 87.6% and 81.3% of respondents were anxious and somewhat anxious about their daily life in old age as well as that of their parents, respectively; the results of this survey supported the findings of other researchers.

In terms of long-term care provision, the general survey of social security by the Ministry of Health and Welfare in 1992 demonstrated that 71.6% of the elderly aged 65 and over expected to have family centered long-term care services when they needed them (23). The younger generation, those in their 30's or 40's, expected more institutional care than the elderly when the time came that they were in need of nursing care (23). Nearly 50% of the research subjects responded that the main reason they expected institutional care was that they did not want to burden their families. Ueda *et al.* reported that 71% of caregivers thought that nursing care at home was inevitable, but 40.4% of caregivers expected nursing care for themselves at long-term care facilities (26). These results agreed with our survey which showed that women wanted their parents to be taken care of by their family; at the same time, they expected public long-term care services for themselves.

Concerning the expected final location for terminal care, the survey by the Ministry of Health and Welfare in 1995 showed that 89.1% of the elderly expected to be at home during this terminal care. However, 66.3% of them died in hospitals and only 33.1% died at home, which was contrary to the expectations of many (3). These results agreed with our survey in which most women expected their home to be the final location for terminal care for both themselves and their parents.

Many kinds of awareness studies for the long-term care provision have been carried out in association with public long-term care insurance. However, little research has attempted to verify the differences in women's awareness in terms of anxiety in old age, the expected long-term care provision, and the expected final location of terminal care for women and their parents. On these points, the findings of this study are new, and they are valuable for reviewing future home care policy in Japan. This survey showed that women, currently the main caregivers, expected long-term care for their parents to be provided by their family; many women expected public long-term care services for themselves. This is the primary difference in women's outlook on long-term care. The results of this study support the policy of public long-term care insurance that aims to increase public home care services.

Multivariate analysis showed that women aged 40 years or over and women in full-time employment were more likely to have anxiety about old age for themselves. Women aged 40 years or over tended to expect public home care services for women themselves. These results suggested that women, who will need long-term care in the future, tended to expect to utilize public home care services for themselves. One may conclude that the reason for women's anxiety for their parents in old age is their expectation that long-term care for their parents would be undertaken by themselves. One may also conclude that the demand for public home care services will increase in the future. As long as the long-term care policy is based on the needs of the elderly and caregivers, as the New Gold Plan, it is important to do cross generation studies of the rapidly changing needs for long-term care provision. Therefore, the results of this survey strongly suggest the importance of further promotion of public home care services for the future needs of

the elderly and caregivers.

It is important to future to know why women expect family centered long-term care for their parents. Many elderly people expect family centered long-term care (23). It appeared that women know the expectation of their parents to be cared for at home. Therefore women want to acquiesce to this expectation. Furthermore, Japan is usually viewed as a society that respects the elderly. The tradition of respect for the elderly has given rise to the ideal of aging parents living with their children and receiving long-term care from their family at home (27). At the same time, the institutionalization of the elderly in nursing homes or the use of public home care services has traditionally been viewed as a failure to live up to these social ideals (27). Such awareness concerning long-term care has led to the expectation of family centered long-term care for the elderly.

Despite this tradition, long-term care for the elderly at home has become a serious issue; it has caused serious social problems such as the cruel treatment of the elderly, poor nursing care, and family suicide (7, 8). According to a questionnaire survey of the Japanese labor union federation in 1996, nearly half of the caregivers experienced cruel treatment from elderly relatives and 33% sometimes felt enmity (8). Daily 24 h long-term care of the elderly has caused mental and physical problems and an increasingly stressful life for many women (26, 28–30).

In Sweden, many elderly do not expect long-term care from their family because they do not wish to have a good relationship with their children destroyed by serious problems associated with long-term care (31). In addition, there is a survey report that shows a strengthening of family bonds after the public long-term care system was established in Sweden, an advanced country in welfare for the elderly (31, 32). In Northern Europe and the United States, which have experienced an aging society in advance of Japan, various kinds of long-term care services have been developed in order to help caregivers, mainly housewives (33–41).

One may concluded that the reason why women did not expect family long-term care for themselves was the difference of awareness in terms of long-term care of the generations between women who are main caregivers and the elderly who are caretakers. This generation gap seemed to increase the difficulties in long-term care for the elderly who are more serious today than in times when the elderly were caregivers. Women may want to avoid destroying the relationship with their children or relatives through the unpleasant demands of long-term care.

This survey had some limitations. First, the female subjects were very interested in welfare and health care policy because they had joined a consumer cooperative association in an urban district. Therefore, there is a limitation in generalizability to abstract universal statements from the results of this research, because the sample was not selected randomly from the general population. Second, we did not have information on the health care condition of the subjects and their parents. Third, some information bias is unavoidable because we obtained information by using a questionnaire.

We need further surveys of other groups, such as those in rural districts, in order to verify the differences of the long-term care needs in relation to regional characteristics or a different population pyramid. It is important that policy makers in Japan monitor the main caregivers' expectation of public home care services and establish a more effective and efficient home care system.

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