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Factors Related to Positive Feelings of Caregivers Who Provide Home-Based Long-Term Care for Their Family Members in Japan

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Abstract
Background. The objective is to elucidate the factors related to the positive feelings of family caregivers who are engaged in home-based elderly care.
Methods. The study utilized the data of a cross-sectional citywide survey in Japan. The survey was conducted with 1,821 subjects and the final analysis was performed on 435 subjects. Questions for recipients such as those on their care levels, causes of care, whereas the primary caregivers were asked about whether they had positive feelings toward caregiving, and whether their opinion was reflected in care policies.
Results. The factors s that showed a positive association with positive feelings were "the caregiver's opinion is reflected in care policies" (OR: 5.05, 95% CI: 2.60–9.87) and "the caregiver is in good health condition" (OR: 2.02, 95% CI: 1.02–3.93). The factors that showed a negative association were "the caregiver is a daughter-in-law of the care recipient" (OR: 0.42, 95% CI: 0.21–0.82) and "the care recipient is an elderly person with cognitive impairment" (OR: 0.36, 95% CI: 0.18–0.70).
Conclusions. The study suggests the necessity of providing support for caregivers in terms of empowerment and health management. Furthermore, they suggest that special attention should be paid to caregivers at risk of being unable to sustain positive feelings toward caregiving.

1. INTRODUCTION

In addition to the issue of the aging of population, caring for elderly persons has become a major policy issue in developed countries. At 23%, Japan ranks first among developed countries in terms of the ratio of its elderly population [1]. Furthermore, due to the rapidly aging population, this ratio is expected to reach 40.5% in 2055 [2]. Along with the rapid increase in the ratio of elderly population, the population of elderly persons in need of care is also expected to swell rapidly.

In Eastern Asian countries, including Japan, China, Taiwan, and Korea, the Confucian idea that children should take care of elderly parents is deeply rooted in people's minds [3-5]. According to a government survey conducted in 2007, 70% of caregiving in Japan is provided by family members[6]. Among family caregivers who live with an elderly person in need of care, those who are engaged in caregiving throughout the day make up 22.3% of the Japanese population. For family caregivers who provide care to an elderly person who requires the highest level of care (care level 5), the ratio increases to 52.7%[6]. High ratios of female caregivers [5] (71.9%) [6] and elderly caregivers, reflected in the percentage of caregivers aged 70 and over (34.1%), are also observed as characteristics of caregiving in Japan. On the other hand, the ratio of three-generation households, which was at 15.3% in 1986, decreased to 8.4% in 2009 [7], indicating a decrease in family size due to the trend toward the nuclear family. It has also been pointed out that female participation in society has resulted in the weakening of family function in terms of caregiving. It has also been reported that these changes lead to changes in the sense of values concerning family caregiving [5].

In recent years, many studies have reported on the mental aspects of family members who provide care to elderly persons at home. While many of the preceding studies focus on the negative aspects of caregivers' feelings, such as caregiver burden [8-10], it has been gradually revealed that there are also positive aspects in caregivers' feelings toward caregiving. However, studies on these positive aspects are rare compared to those on negative aspects. The first study widely known on the positive aspects of caregivers' feelings was reported in 1989. Lawton in the U.S. prepared a caregiving appraisal, which used indicators to measure both positive and negative aspects of feelings toward caregiving [11]. In his instrument, Lawton used "caregiving mastery" and "caregiving satisfaction" as indicators to measure the positive aspects of caregivers' feelings. Lawton's study was followed by other studies on the positive aspects of caregivers' feelings, in which indicators such as "uplifts" [12], "gain" [13], "meaning of caregiving" [14, 15], "enjoyable" [16], and "rewards" [17] were used. With regard to the factors related to the positive aspects of caregivers' feelings, the following associations have been found. The indicator "satisfaction" is related to factors such as male caregivers, many hours of caregiving in a

week [18], low income and low education [11], and satisfaction in caregivers' relationship with the care recipient [19]. "Uplifts" is related to female caregivers and caregivers' relationship with the care recipient [12]. "Gain" is related to factors such as low education and the physical wellness of the caregivers and their ability to solve problems [13]. "Meaning of caregiving" is related to the caregivers' discontent with their role in caregiving [15], and "enjoyable" is related to a low burden of caregiving, satisfaction with social support, and high income [16]. "Reward" is related to old age and low education of the caregiver [17]. Thus, results from studying the factors related to the positive aspects of feelings toward caregiving have been reported recently. However, it should be noted that many of these studies are conducted in the U.S. and European countries. Since environmental and cultural differences have greater influences on care assessment than racial and ethnic differences do [20], studies on the positive aspects of feelings toward caregiving in Japan and other East Asian countries, which have different cultural backgrounds, are necessary.

However, studies on positive feelings toward caregiving are rarer in East Asian countries than they are in the U.S. and European countries, and most of them are conducted in Japan. In the studies conducted in Japan, outcome indicators such as "reward" [21], "feeling of caregiving fulfillment"[22, 23], and "self-developing feeling" [24]are used to measure the positive aspects of feelings toward caregiving. With regard to the factors related to the positive aspects of feelings toward caregiving, it is reported that the increased age of the caregiver, higher utilization rate of home-visit nursing [22], and caregiver's physical wellness [23] are related to "feeling of caregiving fulfillment ." Furthermore, a daughter of a care recipient tends to feel more of a "self-developing feeling" as compared to a daughter-in-law of the care recipients. It has also been reported that the caregiver's health condition, satisfaction in life and that in the family relationships [24] are related to "self-efficacy" [25] .

Nevertheless, the outcome indicators used in these studies are limited to and dependent on individual studies without any consensus in terms of related factors. In addition, the subjects of these studies are limited to members of self-help groups [22, 26] or users of home-visit nursing [24, 27]. On the other hand, some qualitative studies on care of elderly persons with cognitive impairment report that caregivers have coping styles such as "internal control," "self-exposure," "search and choice of measures," and "harmony with given themes." These qualitative study results suggest the possibility that caregiving where family caregivers can reflect their opinion and take initiative may contribute to positive feelings. However, no studies have yet examined the relationship between the positive aspects of the feelings toward caregiving and the factor whether the family caregiver is able to reflect their own opinion in caregiving.

The objective of the present study is to appraise caregivers' positive feelings toward caregiving using the idea of "YOKATTA," a widely used word to refer to the positive aspects of things in general, and identify factors related to these feelings. A factor "whether caregivers can reflect their opinion in caregiving" was added as a candidate to existing factors whose associations with positive aspects have already been shown in preceding studies. The present study, which is based on a survey conducted by a municipal government and the insurer of Japan's Long-term Care Insurance System, is expected to identify the factors related to family caregivers' positive feelings toward caregiving that are distinct to Japanese culture as well as provide evidence to discuss how to support caregivers.

2. METHODS

2.1. Subjects

A cross-sectional citywide survey was conducted in Tsukuba city, which is an insurer of the Long-term Care Insurance System in Japan. The city is located about 31 miles northeast of the capital city of Tokyo and consists of a mix of rural areas and semi-urban areas. Its population was around 20 thousand and its ratio of elderly to the rest of the population was 15.5% as of 2008 [1].

Anonymous self-completion questionnaire forms were mailed to 1,821 subjects randomly sampled from 3,310 persons in need of home-based care. Persons in need of home-based care are defined as those who utilized any form of home-based care covered by the Long-term Care Insurance System run by the city as of January 2008. The respondents were those in need of care and primary caregivers; each group was asked a specific set of questions related to their situation. In cases where a person in need of care could not respond to the questions without assistance, their family caregiver responded instead.

2.2. Survey data

The survey questions included those about the characteristics of the respondent's household and family caregiver in addition to the basic attributes of the elderly person in need of care. As regards the characteristics of the person in need of care, data on the sex and age of the person, care level, cause of condition requiring care, period of receiving care, and whether the person received medical treatment on a regular basis were collected. As for the characteristics of the family caregiver, data on sex, relationship, age, subjective assessment of health condition, whether the caregiver's opinion is reflected in care policies, and whether the caregiver has positive feelings toward caregiving were collected.

With regard to positive feelings toward caregiving, the caregiver was asked whether they "feel YOKATTA toward caregiving." The elements of feeling "YOKATTA" include the following five items: "improvement of disease condition," "deepening of human relationship," "joy of being thanked," "sense of repayment," and "others"; these items were provided in the light of Cohen et al.'s classification [1] and Lawton's "caregiving appraisal [2]." Furthermore, an additional item, "does not feel YOKATTA toward caregiving," was added. The caregiver was asked to answer whether the respective items applied to them; for the "others" category, the caregiver was prompted to provide details.

In the present study, when a caregiver chose the aforementioned items, they were defined as one who "feels YOKATTA toward caregiving" (hereafter referred to as "has positive feelings toward caregiving.") "YOKATTA" is a widely used Japanese word to refer to the positive aspects of things in general, and it can mean both objective and subjective feelings of satisfaction.

Of the 888 questionnaire forms sent back (return rate 49.2%), those in which question items concerning the positive aspects of feelings toward caregiving remained unanswered (n = 258) were excluded. Cases in which the person in need of care was younger than 65 (n = 21) were also excluded in order to focus on cases of elderly care. In addition, cases in which any of the major items concerning the characteristics of the care recipient and caregiver (sex and age of the care recipient, the caregiver's age and relationship with the care recipient, the care level, the period of caregiving) as well as items about the cause of the condition requiring care (considered to be related to the caregiver's positive feeling), whether the caregiver's opinion was reflected in care policies, subjective assessment of one's health condition, and whether the person in need of care received medical treatment on a regular basis remained unanswered (n = 174) were also excluded. The final analysis was performed on 435 subjects.

2.3. Statistical analysis

In order to examine the factors related to family caregivers' positive feelings toward caregiving, a univariate analysis was performed using the chi-square test. Following the univariate analysis, a multiple logistic regression analysis was performed to identify the final related factors. For the logistic model, the variables that showed a statistically significant association ($p \leqq 0.20$) with caregivers' positive feelings toward caregiving in the univariate analysis were input. In addition, the sex and age of persons in need of care and the primary caregivers' relationship with care recipients, age, the level of care, and period of caregiving were input as moderator variables. Association strengths were explained using the crude odds ratio (OR) and the 95% confidence interval (95% CI). A stepwise method was used with the significance level set at 20% for both inclusion and exclusion criteria. All the data analyses were performed using SAS statistical software package (SAS version 9.1; SAS institute Inc., Cary, NC, USA).

2.4. Ethical considerations

The internal ethical review board of the University of Tsukuba, with which the primary author is affiliated, approved this study. We performed the study under a contract relating to the secondary use of a public database with the local authorities of Tsukuba city.

3. RESULTS

Table 1 shows the characteristics of recipients and primary caregivers. Of all the elderly in need of care, 177 (39.3%) were male and 264 (60.7%) were female. The largest age group was aged 85 and over (163 subjects, 37.5%), followed by those aged 80–84 (118 subjects, 27.1%). The most common care level was care level 3 (119 subjects, 27.4%), and the second most common level was care level 2 (110 subjects, 25.3%). The most common cause of conditions requiring care were "gradually because of aging" (114 subjects, 26.2%) and "cerebrovascular" (104 subjects, 23.9%). The most common period of caregiving was three to five years (118 subjects, 27.1%), followed by five or more years (112 subjects, 25.7%). The largest age group of primary caregivers was in their 50s (143 subjects, 32.9%), and the second largest group was in their 60s (115 subjects, 26.4%). The most common primary caregiver was a daughter-in-law of the care recipient (121 subjects, 27.8%), followed by the wife of the care recipient (111 subjects, 25.6%) and a married daughter of the care recipient (80 subjects, 18.4%).

Table1
The characteristics of recipients and primary caregivers

characterisitics	n	%
recipient's sex		
men	171	(39.3)
women	264	(60.7)
recipient's age		
65-69age	21	(4.8)
70-74age	53	(12.2)
75-79age	80	(18.4)
80-84age	118	(27.1)
≧85age	163	(37.5)
care need level		
support level 1	17	(3.9)
support level 2	38	(8.7)
care level 1	79	(18.2)
care level 2	110	(25.3)
care level 3	119	(27.4)
care level 4	45	(10.3)
care level 5	27	(6.2)
cause of care		
cerebrovascular	104	(23.9)
fracture/falling	45	(10.3)
rheumatism/backache/joint disease	38	(8.7)
cerebrovascular	20	(4.6)
respiratory disease	18	(4.1)
intractable disease	19	(4.4)
advanced age	114	(26.2)
dementia	71	(16.3)
others	48	(11.0)
unclear	1	(0.2)
period of receiving care		
≦6months	34	(7.8)
6 months～1years	33	(7.6)
1years～2years	49	(11.3)
2 years～3years	89	(20.5)
3years～5years	118	(27.1)
≧5years	112	(25.7)
caregivers' sex		
men	111	(25.5)
women	324	(74.5)
caregiver's age		
20's	1	(0.2)
30's	8	(1.8)
40's	28	(6.4)
50's	143	(32.9)
60's	115	(26.4)
70's	96	(22.1)
80's	44	(10.1)
caregiver's relationship		
husband	61	(14.0)
wife	111	(25.6)
son-in-law	2	(0.5)
daughter-in-law	121	(27.8)
married son	24	(5.5)
married daughter	80	(18.4)
single son	24	(5.5)
single daughter	12	(2.8)
total	435	(100)

Table2
The charracteristics of recipients and primary caregivers depending on whether the caregivers have positive feelings toward caregiving

	caregiving affirmation yes		caregiving affirmation no		total		
characterisitics	n	%	n	%	n	p-value	χ^2
recipient's sex						0.453	0.569
men	141	(82.5)	30	(17.5)	171		
women	210	(79.5)	54	(20.5)	264		
recipient's age						0.925	0.009
65-74age	292	(80.6)	70	(19.4)	361		
≧75age	60	(81.1)	14	(18.9)	74		
caregiver's kinnship						0.017*	8.183
husband and wife	140	(81.4)	32	(18.6)	172		
daughter-in-law	88	(72.7)	33	(27.3)	121		
daughter/son/son-in-law	123	(86.6)	19	(13.3)	142		
caregiver's age						0.294	1.100
20-60's	234	(79.3)	61	(20.7)	295		
70-80's	117	(83.6)	23	(16.4)	140		
care need level						0.720	0.128
support level 1～care level3	294	(81.0)	69	(19.0)	363		
care level 4/5	57	(79.2)	15	(20.8)	72		
cause of care						<0.001*	17.771
cerebrovascular	89	(85.6)	15	(14.4)	104		
aging	89	(78.1)	25	(21.9)	114		
cognitive impairment	45	(63.4)	26	(36.6)	71		
other disease	124	(84.9)	22	(15.1)	146		
period of receiving care						0.920	0.010
6 months～3years	165	(80.5)	40	(19.5)	205		
≧3years	186	(80.9)	44	(19.1)	230		
caregiver's opinion in care policies						<0.001*	26.851
reflected	318	(84.6)	58	(15.4)	376		
not reflected	33	(55.9)	26	(44.1)	59		
caregiver's health condition						0.003*	8.780
healthy	308	(83.0)	63	(17.0)	371		
sick	43	(67.2)	21	(32.8)	64		
medical treatment on a regular basis						0.038*	4.325
receive	337	(81.6)	76	(18.4)	413		
do not receive	14	(63.6)	8	(36.4)	22		
合計	351	(80.7)	84	(19.3)	435		

* p-value<0.20

Table 2 shows the characteristics of recipients and primary caregivers depending on whether the caregivers have positive feelings toward caregiving. The group with positive feelings toward caregiving included 351 subjects (80.7%), and the group without positive feelings toward caregiving included 84 subjects (19.3%). As a result of the univariate analysis, the factors related to positive feelings toward caregiving were "the

caregiver's relationship with the care recipient" (p = 0.017), "the cause of the condition requiring care" (p = 0.005), "whether the caregiver's opinion is reflected in care policies" (p < 0.001), "the caregiver's subjective assessment of their health condition" (p = 0.003), and "whether the recipients receives medical treatment on a regular basis" (p = 0.038).

Table 3 shows the result of the multiple logistic regression analysis. The variables that showed a positive association with positive feelings toward caregiving were "the caregiver's opinion is reflected in care policies" (OR: 5.05, 95% CI: 2.60–9.87) and "the caregiver's subjective assessment of health condition is high" (OR: 2.02, 95% CI: 1.02–3.93). The variables that showed a negative association with positive feelings toward caregiving were "the caregiver is a daughter-in-law of the care recipient" (OR: 0.42, 95% CI: 0.21–0.82) and "the care recipient is an elderly person with cognitive impairment" (OR: 0.36, 95% CI: 0.18–0.70).

Table3
Factors related to Positive feelings toward caregiving (n=435)

characterisitics	Ajusted OR (95% CI)
recipient's age	
65-74age	0.79 (0.33 - 1.86)
≧75age	1
recipient's sex	
men	0.70 (0.38 - 1.27)
women	1
caregiver's age	
20-60's	0.58 (0.26 - 1.37)
70-80's	1
caregiver's relationship	
husband and wife	0.42 (0.21 - 0.82)
daughter-in-law	0.66 (0.25 - 1.76)
daughter/son/son-in-law	1
care need level	
support level 1～care level3	1.17 (0.57 - 2.31)
care level 4/5	1
period of receiving care	
6 months～3years	1.10 (0.65 - 1.87)
≧3years	1
cause of care	
cerebrovascular	1.24 (0.60 - 2.66)
aging	0.77 (0.39 - 1.54)
cognitive impairment	0.36 (0.18 - 0.70)
other disease	1
caregiver's opinion in care policies	
reflected	5.05 (2.60 - 9.87)
not reflected	1
caregiver's health condition	
healthy	2.02 (1.02 - 3.93)
sick	1
medical treatment on a regular basis	
receive	2.22 (0.76 - 6.16)
do not receive	1

Hosmer and Lemeshow test P=0.80
Likelihood rank test P=0.005
Ajusting care recipient's age, care recipient's sex, care need level, cause of care, period of receiving care, caregiver's age, caregiver's relationship

Table 4 shows the characteristics of feeling YOKATTA toward caregiving. Of the primary caregivers who felt YOKATTA toward caregiving, 121 (27.8%) selected "improvement of disease condition," 74 (17.0%) selected "deepening of human relationship," 57 (13.1%) chose "joy of being thanked," 74 (17.0%) selected "sense of repayment," and 25 (5.7%) chose "others." The results according to the caregiver's relationship with the care recipient showed that husbands, wives, daughters-in-law, married sons, married daughters, and unmarried daughters of care recipients selected "improvement of disease condition" most, while unmarried sons of care recipients selected "sense of repayment" most (41.7%). The caregivers who chose "deepening of human relationship" with the highest frequency were spouses, which represented 25.6% of that group. The caregivers who selected "joy of being thanked" with the highest frequency were daughters-in-law, which represented 19.8% of that group. The caregivers who selected "sense of repayment" with the highest frequency were children of care recipients (including married sons, unmarried sons, married daughters, and unmarried daughters), which

represented 30.7% of all the children of care recipients.

Table4-1 The characteristics of positive feelings "YOKATTA" toward caregiving

	improvement of disease condition		deepening of relations		happiness which be felt grateful		sensation of repayment		other		haven't felt good for care		total
characteristics	n	%	n	%	n	%	n	%	n	%	n	%	n
husband	16	(26.2)	14	23.0)	9	14.8)	9	(14.8)	3	(4.9)	10	16.4)	61
wife	32	(28.8)	30	27.0)	15	13.5)	7	(6.3)	5	(4.5)	22	19.8)	111
son-in-law	0	(0.0)	0	0.0)	0	0.0)	1	(50.0)	1	(50.0)	0	0.0)	2
daughter-in-law	27	(22.3)	12	9.9)	24	19.8)	14	(11.6)	11	(9.1)	33	27.3)	121
married son	7	(29.2)	4	16.7)	4	16.7)	4	(16.7)	0	(0.0)	5	20.8)	24
married daughter	28	(35.0)	12	15.0)	4	5.0)	26	(32.5)	3	(3.8)	7	8.8)	80
single son	5	(20.8)	2	8.3)	1	4.2)	10	(41.7)	0	(0.0)	6	25.0)	24
single daughter	6	(50.0)	0	0.0)	0	0.0)	3	(25.0)	2	(16.7)	1	8.3)	12
total	121	(27.8)	74	17.0)	57	13.1)	74	(17.0)	25	(5.7)	84	19.3)	435

Table4-2 The characteristics of positive feelings "YOKATTA" toward caregiving

	improvement of disease condition		deepening of relations		happiness which be felt grateful		sensation of repayment		other		haven't felt good for care		total
characteristics	n	%	n	%	n	%	n	%	n	%	n	%	n
husband and wife	48	(27.9)	44	25.6)	24	14.0)	16	(9.3)	8	(4.7)	32	18.6)	172
son-in-law	0	(0.0)	0	0.0)	0	0.0)	1	(50.0)	1	(50.0)	0	0.0)	2
daughter-in-law	27	(22.3)	12	9.9)	24	19.8)	14	(11.6)	11	(9.1)	33	27.3)	121
children	46	(32.9)	18	12.9)	9	6.4)	43	(30.7)	5	(3.8)	19	13.6)	140
total	121	(27.8)	74	17.0)	57	13.1)	74	(17.0)	25	(5.7)	84	19.3)	435

4. DISCUSSION

The study results showed that 80% of family caregivers who provide home based care to elderly persons answered that they had positive feelings toward caregiving. The factors that showed a positive association with positive feelings toward caregiving were “the caregiver’s opinion is reflected in care policies” and “the caregiver’s subjective assessment of their health condition is high.” On the other hand, the factors that showed a negative association with positive feelings toward caregiving were “the caregiver is a daughter-in-law of the care recipient” and “the cause of the condition requiring care is cognitive impairment.” The reasons for these associations are discussed below from the perspective of caregiver-related factors and care recipient-related factors, respectively.

Among caregiver-related factors, “the caregiver’s opinion is reflected in care policies” showed a positive association with positive feelings toward caregiving. For a caregiver to have their opinion reflected in care policies, they must have the power to have their own opinion and express it. This power is considered to reflect the caregiver’s ability, especially their ability to act, such as “caregiving mastery,” “locus of control” and “self-efficacy” as reported in preceding studies. For example, Lawton describes caregiving mastery as “a positive view of one’s ability and ongoing behavior during the caregiving process” [1]. It is believed that a caregiver’s confidence in their abilities makes the caregiving meaningful and can help them deal with situations. Furthermore, the caregiver will approach caregiving positively and feel YOKATTA about being engaged in caregiving. However, even though the caregivers express their opinion, and a proper environment is not present, their opinion will not be reflected. It has been reported that the levels of satisfaction in decision-making felt by an elderly care recipient and their family caregiver are related to the nature of their relationship [2]. If their relationship is positive, the primary caregiver’s opinion will be easily reflected. In order to reflect the primary caregiver’s opinion in care policies, it is important that the family respects the caregiver’s opinion and discusses the issue thoroughly. On the other hand, since the subjects in this study were users of home-care service covered by Long-term Care Insurance, the relationship between the family and the care manager in charge should be also considered. With regard to difficulties that a care manager might deal with, disagreement among the family members [3], refusal by the person in need of care or their family to accept services, and disagreement between the care manager and the recipient or their family [4] have been identified as possibilities. Although this study does not include data on the relationship between primary caregivers and those who have relationships with them,

these possibilities suggest the importance of creating an environment in which a primary caregiver can find meaning in caregiving and take the initiative to provide care with positive feelings.

Another caregiver-related factor that showed a positive association with positive feelings toward caregiving was "the caregiver's subjective assessment of their health condition is high." Preceding studies also reported positive associations between family caregivers' health condition and enjoyable, satisfaction, and feeling of fulfillment in caregiving [5-8]. Similarly, the poor health condition of a family caregiver is a factor related to caregiver burden [9]. Furthermore, accounting for the association between caregiver burden, the number of hours spent caregiving, and whether or not the caregiver has time to go out [10], it is possible that a caregiver's lack of free time may be related to their poor health condition. Preceding studies also show a strong association between a caregiver's health condition and whether or not they have a hobby, as well as the fact that female caregivers tend to have fewer diversions and opportunities to have medical checkups compared with those who are not engaged in caregiving [11]. These results suggest that for a caregiver to be in good health condition, one needs to secure time away from caregiving and receive medical checkups. To this end, considerations must be made such as arranging an easy access to medical checkups for caregivers, preparing a care plan that secures free time for caregivers, and facilitating utilization of day services so that caregivers can have medical checkups.

The factor "the caregiver is a daughter-in-law of the care recipient" showed a negative association with positive feelings toward caregiving. Many studies have reported that the fact that the primary caregiver is a daughter-in-law of the care recipient is related to the caregiver burden. In Japan, the Family System, in which the head of a family has the authority to administer the family, was abolished in 1947. However, the Civil Code of Japan provides that direct lineal descendants and ascendants, as well as brothers and sisters, have a mutual duty to support each other, and the idea that "a daughter-in-law should take care of parents-in-law" still remains among the Japanese people. Previous studies indicate that a son of the person in need of care will not become a caregiver in many cases, although his wife does; a daughter-in-law is often exposed to especially strong pressure from other family members [12]. According to the study data we collected on the elements of positive feelings in caregiving, in contrast with wives or husbands of care recipients, who most often selected "deepening of human relationship," and sons or daughters of care recipients, who most often selected "sense of repayment," 19.8% of daughters-in-law selected "joy of being thanked," marking a high ratio as compared to those for other relationships with care recipients. As compared to a son or daughter, a daughter-in-law who began living with her husband's parent (the care recipient) after the marriage might find it more difficult to have positive feelings toward caregiving. Therefore, it may be necessary to ensure that a sense of gratitude be expressed. Preceding studies show that caregiving by a daughter-in-law is related to the failure of home-based care [13] and that the risk of the mother-in-law's death is higher when the recipient receives cared from a daughter-in-law than when she receives it from a daughter [14] . In order to solve problems related to elderly care in Japan, it may be essential to change traditional ideas about daughters-in-law and to stop assuming that they should provide care to parents-in-law. Similarly, it may also be necessary to improve the caregiving environment for daughters-in-law who cannot have positive feelings toward caregiving; this may be achieved by providing public services or assistance to free them from caregiving for a length of time.

On the other hand, among care recipient-related factors, "the cause of condition requiring care is cognitive impairment" showed a negative association with positive feelings toward caregiving. Many studies show an association between cognitive impairment in care recipients and caregiver burden [15, 16], with the care recipients' problematic behavior being the most strongly related factor. Although this cannot be verified by the present study because it did not collect information about the problematic behavior of persons in need of care, it may be possible that care recipients' problematic behaviors caused difficulties in caregiving, thus affecting the negative association with positive feelings toward caregiving.

The number of persons in need of care whose condition was caused by cognitive impairment was at 310,000 in 2001, and this figure almost doubled to 610,000 in 2007 [17]. The number of persons not having positive feelings toward caregiving may increase with cognitive impairment conditions that require care. In present-day Japan, support systems for family caregivers who provide care to elderly people with cognitive impairment are operated by municipalities as voluntary projects. Accordingly, the contents of projects differ by municipality. In Tsukuba city, where the subjects of this study reside, the administration provides services such as lending position information terminals to track cognitively impaired elderly people who exhibit wandering behavior; however, there are no support programs for caregivers. Further enrichment of support systems will be necessary.

Finally, it should be noted that there are some limitations in the present study. First, the data utilized in this study was taken from the results of a survey conducted in Tsukuba city, which is only one of the many cities in Japan. The ratio of the elderly population in the city was 15.5% in 2008 [18], lower than that of the national average (22.1%) for the same year. This indicates the possibility that the study results may not be generalized to

represent the national situation. On the other hand, when focusing on elderly persons aged 65 and over, the ratio of persons certified as requiring care in 2008 was 15.1% [18] in Tsukuba. The national figure for the same group was 16.0% [19]. Considering that there is no significant difference between them, its influences on the characteristics of elderly persons in need of care are expected to be small. Second, because of the valid collection rate of 49.2% and missing values for some question items, the current study results may include selection bias. However, the study is based on data collected from subjects randomly sampled from all the elderly persons in need of care in the city, thus maintaining a necessary sample size to some extent. In addition, the study discussed factors related to positive feelings toward caregiving using "whether a caregiver has positive feelings," not the degree of such feelings, as a dependent variable. Furthermore, in the analytical phase, potential confounders were adjusted as far as possible. For these reasons, it is believed that the influences of possible selection bias remain small. Despite these limitations, to the best of our knowledge, the present study was the first to elucidate the association between whether the caregiver's opinion is reflected in care policies and the existence of positive feelings toward caregiving. The results of this study will help policy makers and care professionals develop effective support systems for family caregivers not only in Japan, but also in other East Asian countries that are faced with a rapidly aging population.

5. CONCLUSION

This study elucidated factors related to the positive feelings of family caregivers toward administering care to elderly persons in need of home-based support in Tsukuba city, Japan. The variables that showed a positive association with positive feelings toward caregiving were "the caregiver's opinion is reflected in care policies" and "the caregiver's subjective assessment of health condition is high." The variables that showed a negative association with positive feelings toward caregiving were "the caregiver is a daughter-in-law of the care recipient" and "the care recipient is an elderly person with cognitive impairment."

The study results suggest the necessity of providing support for caregivers in terms of empowerment and health management, as well as paying special attention to caregivers at high risk of not being able to have positive feelings toward caregiving, including those who provide care to their parent-in-law or to an elderly person with cognitive impairment. In Japan, there are no state-level systems to support caregivers directly like those seen other countries. In addition, caregiving in Japan still reflects old traditions and cultures. As one of the leading Asian countries faced with population aging, Japan is expected to deal with these issues.

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