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Changes in Health-Related Quality of Life due to Care Burden as Single Caregivers

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[Background]

Japan has an aging society with a declining birthrate that is unprecedented in the world. The aging rate in Japan is 28.4% (Oct, 2019).

Increase in number of nuclear families Social advancement of females

Aging of caregivers.

It has become difficult for families to support their elderly family members.

Japan has introduced the long-term care insurance system that socially supports long-term care.

The current long-term care insurance system is insufficient for adequately supporting all the care required by society.

[Background of single caregivers in Japan]

Single caregivers

Increase in the number of single persons and divorcees. Decrease in the number of siblings. Number of families with members living together.

Increase in the number of elderly people

Problems faced by single caregivers

There is no family member who can take care of them together

Fragility of the economical security. Relationships are weak, Decreased vitality, Independent lifestyle. Requirements for improving the quality of life of single caregivers. Serious Social Problem.

[Subjects]

The subjects were single caregivers. Provided long-term care while working at home. Gender was not a consideration.

[Method]

Research design: Inventory survey

Investigation time: At two time points: 1 month and 3 months after discharge of the care-requiring parent from a rehabilitation ward.

Participant recruitment: Participants were recruited from hospitals with rehabilitation wards and nursing in the home by visiting nurses, and home nursing stations.

Investigation period: From November 2019 to May 2020.

[Investigation content]

Subject's profile

Sex, age, employment form, time spent working and care time

Attributes of the care-requiring parent

sex, age, relation, types of long-term care or support required and independence degree of daily living for the demented elderly

Changes in the caregiver's health-related quality of life was measured

using SF-8TM).

※SF-8TM is a shortened version of SF-36 (MOS 36-Item Short-Form Health Survey).

It is a scale that measures health-related quality of life over the past month, and its reliability and validity have been proven.

Types of long-term care or support required

- **Support Required 1**

- The person can rise, walk, and perform most other essential daily life activities by himself/herself. However, the person needs some support for task-based activities in daily life, including cooking, shopping and taking oral medicine.

- **Support Required 2**

- The person's ability to handle task-based activities in daily life is slightly lower than that of individuals in the Support Required 1 category, and he/she needs more support.

- **Care Level 1**

- The person faces difficulty in performing essential daily life activities by himself/herself. The person's ability to handle task-based activities in daily life is lower than that of individuals in the Support Required 2 category, and.

- **Care Level 2**

- The person is in a state similar to that detailed under Care Level 1, but requires more care to be able to perform essential daily life activities.

- **Care Level 3**

- Compared with state of Care Level 2, the person's abilities to perform essential daily life activities and task based activities are significantly lower. As a result, he/she requires almost constant care.

- **Care Level 4**

- The person is in a state similar to that detailed under Care Level 3, but his/her ability to act is lower. As a result, he/she faces difficulty living without constant care.

- **Care Level 5**

- The person's ability to act is even lower than that of individuals in the Care Level 4 category. As a result, he/she requires almost constant care to live.

[Independence degree of daily living for the demented elderly]

The degree of independence in daily life of the elderly with dementia is a standard for judging the degree of independence in daily life of the elderly with dementia. **There are I to IV and M ranks in the degree of independence in daily life of the elderly with dementia.**

Dementia, from those who are almost independent at home and socially in daily life to those who have significant psychiatric symptoms, behavioral problems or serious physical illness and require specialized medical care Is judged.

The degree of independence in daily life of the elderly with dementia is also

used for certification of long-term care and certification surveys.

[Analytical method]

The SF-8TM) score was calculated PCS^{*} and MCS^{**} at the two time points were compared using a t-test. The t-test was also used for comparison versus norm-based scores (50.0 points).SF-8 sub-items were also compared at the two time points and using norm-based scoring.

Listed shared so that individual subjects can see the changes in PCS and MCS scores from 1 month to 3 months.

*Physical component summary: PCS**Mental component summary: MCS

[Ethical consideration]

This study was approved by the Ethics Review Board of the International University of Health and Welfare Graduate School (approval number 20-Ig-42).

[Profile of subjects]

	N = 36		
	1 month	3 months	
	N (%) / Mean ± SD	N (%) / Mean ± SD	p-value
Sex			
Male	15 (41.7)		
Female	21 (58.3)		
Age (years)			
30s	1 (2.8)		
40s	5 (13.9)		
50s	23 (63.9)		
60s	7 (19.4)		
Employment			
Regular employment	19 (52.8)	17 (47.2)	
Irregular employment	17 (47.2)	19 (52.8)	
Mean time spent working (min/day)	406.5 ± 176.9 min/ day	400.5 ± 170.1 min/ day	p = 0.06
Mean care time (min/day)	270.8 ± 249.0 min/ day	317.5 ± 295.4 min/ day	p < 0.01

p-value: t-test

- Most of the subjects were females (58.3%), and 23 were in their 50s (63.9%).
- In terms of employment, there were more who were regularly employed at 1 month, and more who were non-regularly employed at 3 months.
- The average daily care time increased significantly at 3 months.

Attributes of the parent requiring care

		N=36			
		1 month		3 months	
		n	%	n	%
Sex	Female	26	72.2		
	Male	10	27.8		
Age (years)	70s	9	25.0		
	80s	19	52.8		
	90s	8	22.2		
Types of long-term care or support required	Support required 1	2	5.6	1	2.8
	Support required 2	4	11.1	3	8.3
	Care Level 1	5	13.9	8	22.2
	Care Level 2	11	30.6	10	27.8
	Care Level 3	7	19.4	6	16.7
	Care Level 4	5	13.9	4	11.1
	Care Level 5	2	5.6	4	11.1
Independence degree of daily living for the demented elderly	Rank I	13	36.1	11	30.6
	Rank II	6	16.7	6	16.7
	Rank II b	3	8.3	4	11.1
	Rank III	5	13.9	4	11.1
	Rank IIIa	7	19.4	7	19.4
	Rank IIIb	1	2.8	4	11.1
	Rank IV	1	2.8	0	0.0

At 3 months, types of long-term care or support required was slightly higher than at 1 month.

Changes in the attributes of subjects and summary of the changes at 1 month and 3 months

N=36

ID	Caregiver age	Caregiver sex	Changes from 1 month to 3 months			
			PCS	MCS	Working hours	Care time
1	65	Male	No change	Decrease	Increase	Increase
2	56	Female	No change	Improvement	Increase	Increase
3	48	Male	No change	Improvement	Decrease	Decrease
4	55	Female	No change	Improvement	Decrease	Increase
5	51	Male	No change	Improvement	No change	Decrease
6	63	Male	No change	Decrease	No change	Decrease
7	39	Female	Improvement	Improvement	Increase	No change
8	56	Female	Decrease	Improvement	Decrease	Decrease
9	52	Male	Improvement	Decrease	Increase	Decrease
10	44	Female	Decrease	Improvement	No change	No change
11	44	Female	No change	No change	No change	No change
12	52	Male	Decrease	Decrease	Increase	Increase
13	58	Male	Decrease	Improvement	Decrease	Increase
14	52	Female	Decrease	Decrease	Increase	No change
15	56	Male	Improvement	Decrease	Increase	Increase
16	58	Female	Improvement	Decrease	Increase	Increase
17	52	Female	Improvement	Decrease	Increase	Decrease
18	65	Male	Decrease	Decrease	Increase	Increase
19	55	Female	Improvement	Decrease	Decrease	No change
20	60	Male	Decrease	Improvement	Decrease	Increase
21	57	Male	No change	No change	No change	No change
22	54	Female	Decrease	Improvement	Increase	No change
23	54	Male	No change	No change	No change	Increase
24	55	Female	Decrease	Improvement	Increase	Increase
25	62	Female	Improvement	Improvement	Decrease	Decrease
26	41	Female	Improvement	Decrease	Decrease	No change
27	45	Female	Improvement	Decrease	Decrease	No change
28	53	Female	Decrease	Improvement	Decrease	Decrease
29	57	Male	Decrease	Decrease	Decrease	Increase
30	55	Female	Decrease	Decrease	Decrease	Increase
31	63	Male	Decrease	Improvement	Increase	Increase
32	57	Female	Improvement	Improvement	No change	No change
33	50	Female	Improvement	Improvement	No change	Increase
34	60	Female	Decrease	Decrease	No change	Increase
35	52	Male	Improvement	Decrease	Increase	Decrease
36	53	Female	Decrease	Improvement	Increase	Increase

Care time increased to about 70%

Males tended to have lower MCS

38% females
58% males

Caregivers who spend a lot of time in long-term care need to prevent long-term care leave.

*Scores were marked as 'No change' when the PCS and MCS scores at 1 and 3 months were within ± 1 point.

Changes in nursing hours and working hours were classified as an increase by 60 minutes or more, decrease by 60 minutes or less, or as remaining unchanged.



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[Conclusion]

- ❖ The subjects component summary was lower than the norm-based score at both 1 month and 3 months, indicating a **poor health condition**.
- ❖ In these subjects, there was no significant change in health-related QOL even after 3 months, and they required physical and mental support to improve their QOL.

- ❖ The time spent on long-term care increased significantly at 3 months compared to 1 month from the start of long-term care.
- ❖ Males tended to have a lower MCS than females among single caregivers. **The results suggest that it is necessary to strengthen mental support for male caregivers.**

References cited

1. Shuichi Oki: An association between Stressful Life Events and Sense of Coherence in the male caregiver. *Ishikawa nursing magazine*.11:19-27, 2014.
2. Junko Sato, mid-autumn Hidetaro: Problems - about social isolation - social support and the quality of life of patients with dementia and the family. *A geriatric psychiatry magazine*.22(6):699-708, 2011.
3. Tomoko Sugiyama, Keiko Watanabe, Noriko Sato et al.: It is focus — in a feeling of burden on elderly people with hospitalized dementia at health-related quality of life - on admission and discharge decision in the care family. *Juntendo University medical care School of Nursing medical care nursing research*, 7(1):35-40, 2011.4.
4. Shunichi Fukuhara, bell duck friendship: Quality of life (quality of life) health-related quality of life standard -SF-8 and SF-36. *Medical Ayumi*, 213 (2):133-136, 2005.
5. Hisato Igarashi, Sumio Iijima: Examination - by - regular employment of the quality of life of the female employer and the occupational stress of relationships and the comparison of the irregular employment. *Yamanashi Nursing Journal* Vol13No. 2:1-7, 2015.
6. Mitsuko Miyashita, Mariko Sakai, Hiromi Iizuka et al.: The quality of life factor associated with care burden feeling and it of the at-home family caregiver. *Japanese Association of Rural Medicine magazine*, 54(5),

767-773, 2006.

7. Ichinomiya thickness, Ruriko Igata, indelicate Koji et al.: Examination - by feeling of burden and QOL-WHO/QOL-26 of the care in the caregiver of elderly people with at-home dementia. Geriatric psychiatry magazine, 12(10):1159-1167, 2001.
8. Cannot look after Naomi Oyama, Suzuki; Kiyomi Yamada: The analysis of the related factor in the subjective care burden on family caregiver. Old age nursing science, 6(1), 58-66, 2001.
9. Tono fixed law, Nozomi Nakajima: Association of a care burden feeling and the mental health of the family caregiver whom we looked after according to relation. Management and information, 22(2), 97-108, 2010.
10. Mitsubishi UFJ Research and Consulting Co., Ltd. "worker questionnaire survey about work and the coexistence of the care" (2012 Ministry of Health, Labour and Welfare trust investigation). P22
https://www.Mhlw.go.jp/bunya/koyoukintou/dl/h24_itakuchousa05.pdf
2020. 1. 31
11. Kishida Kensaku: Does the working investigation with the care decrease household hospitalization? Family budget economy study, 98:54-59, 2013.
12. Wakana Ochi, field high Etsuko, base existence Katsura, Chie Kawahara et al.: The descriptive study on problem of the coexistence of a care and the work of the middle age working caregiver. Japanese local nursing official journal of a scientific society, 13(2):140-145, 2011.
13. Look at Uchida Kei; Hiroko Matsuoka: Invention - for difficulty and life stability of experience-based - coexistence that working women take home health care on as the main caregiver. Aichi Prefectural University School of Nursing bulletin, 22:27-35, 2016.
14. Omission Toyoko: Do not do the best single care - alone; is 50 questions and answers, pp.10-11, Japanese broadcast publication meeting, 2010

15. Person of digital unabridged dictionary Shogakukan
<https://www.weblio.jp/content/working> 2020.4.21
16. Shunichi Fukuhara, bell duck friendship: Health-related quality of life standard SF -8 Japanese edition manual, pp15-40, Kyoto: Non profit organization health medical audit study mechanism, 2004.
17. Gen Sato: A general idea of quality of life (quality of life) measurement - quality of life in the present medical field of the quality of life (quality of life) measurement, historic background and a current problem. Medical Ayumi, 213 (2): 113-117, 2005.
18. Tadashi Endo, Naomi Ebina, Masaya Mochizuki et al.: About a difference by the presence of examination need of nursing care degree distinction and dementia about the care burden on family caregiver caring for Support and need of nursing care elderly people in a home and the subjective quality of life, it is index, 56(15): of the public welfare 34-41, 2009.
19. Kazuhiko Fujiwara, Takashi Yamaguchi, Shinichi Koike et al.: About an association between care burden feeling and health-related quality of life (Quality of Life) in the main caregiver of elderly people with at-home dementia, it is medicine and biology, 154 (5): 246-252, 2010.
20. Mizuko Hiramatsu, Yumiko Nakamura: Anxiety to the medical treatment life associated with the discharge of a medical treatment person and the family: University of Osaka Prefecture School of Nursing bulletin, 16(1):9-19, 2010.